THE EMPLOYMENT ADJUSTMENT OF MALE IMMIGRANTS IN ENGLAND[*]

by

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In this paper the employment adjustment of immigrant men to the English labour market is examined, using 1993-4 data from the Quarterly Labour Force Survey of the United Kingdom. Hypotheses proposed by Chiswick (1982), concerning the impact of education, potential labour market experience, years since immigration and country of birth on the employment rate, are investigated using logistic regression analysis. Our results show that both white and non-white foreign born men experience employment disadvantages immediately after entering the UK. However, for whites, this effect is transitory, whereas non-whites never attain the employment rates of native born men. The country of birth is also shown to be a crucial determinant of immigrant employment rates.

KEYWORDS: Immigrants, Employment, Ethnic Minorities.

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1. Introduction

The economics literature concerning immigration has shown that there are important differences between the labour market performance of immigrants and natives (see Ghatak et al., 1996). The main focus of this work, following the path-breaking paper by Chiswick (1978), has been on the adjustment process of immigrant earnings as time in the host country increases. This "assimilation" is necessary because skills obtained in the country of origin do not transfer perfectly between national labour markets and because immigrants lack the location-specific human capital which would enable them to compete, on an equal basis with native born job-seekers, in the destination country's labour market. Furthermore, the country of origin and the self-selection of immigrants also affect their subsequent earnings performance (Chiswick, 1978; Borjas, 1985, 1987, 1992).

In contrast, surprisingly little research into the employment experience of immigrants has been undertaken. Chiswick (1982) (and, more recently, Chiswick and Hurst, 1998) used a model of immigrant adjustment to examine the roles of schooling, labour market experience, time spent in the destination country and country of birth in explaining immigrant employment in the United States.[1] He found that male immigrants, like other recent labour market entrants, are initially less likely to be employed than comparable native born men. However, this differential is transitory and disappears about five years after immigration.[2]

Chiswick (1982) argues that the adjustment process depends on immigrants acquiring local labour market knowledge and country-specific skills, such as language fluency (Chiswick and Miller, 1995). Employers are also better able to evaluate the true ability of potential immigrant workers, many of whom have unfamiliar foreign qualifications and work experience, the longer the time that immigrants spend in the local labour market. In contrast, other labour market entrants, such as native

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[1] Chiswick and Hurst (1998) also investigate the unemployment and unemployment compensation of immigrants in the US using Chiswicks (1980) model. In a companion paper we examine the unemployment experience of male immigrants in England, in terms of both the International Labour Office definition and the claimant count (Wheatley Price, 1998b).

[2] In addition, Chiswick et al. (1997) have shown that the economic climate, at the time of arrival, has no long term (or "scarring") effect on immigrants' subsequent labour market performance.

born school-leavers, already possess location-specific human capital, familiar qualifications and some idea of where their best employment opportunities lie.

There have been few econometric investigations into ethnic employment differentials in the United Kingdom (UK). However, Blackaby et al. (1994, 1998) provide evidence that employment and earnings prospects for non-whites have worsened over time, and that difficulties accessing employment appear to be more serious than differences in earnings, once employed. In addition, Blackaby et al. (1997) have investigated ethnic differences in unemployment rates in Britain. They argue that the unexplained difference is partly due to discrimination and partly due to the way that ethnic minorities respond to this discrimination.

However, decomposition analysis does not prove that discrimination is the cause of the unexplained component in such studies. Another possible reason for the poorer labour market performance of the ethnic minority population in the UK derives from the fact that the majority of non-whites were born abroad. Therefore, many of these individuals undertook most of their schooling and some of their labour market experience in their country of origin.[3] Furthermore, many of these immigrants are not fluent communicators in the English language upon arrival in the UK. There are, therefore, several reasons why a rational employer might be less willing to employ such workers besides discrimination.

This study is the first to investigate the importance of country of birth and years since migration, on the employment of immigrant males in England, and is the only study to examine Chiswick's (1982) model for non-US data, that we are aware of. We use data from the Quarterly Labour Force Survey of the United Kingdom and allow for the possibility of discriminatory differences by separately investigating white and non-white males. We define the employment rate as the total number of men who report being paid employees, self-employed, voluntary workers or

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[3] Blackaby et al. (1995) use only a dummy variable to indicate those born abroad. Blackaby et al. (1997) perform separate logistic regressions on all non-white natives as well as Irish and other white immigrants. However, there are no controls for country of origin nor time spent in the United Kingdom.

engaged in government training schemes, according to International Labour Office definitions, as a proportion of the total male sample[4].

The paper is set out as follows: Section 2 sets out the key hypotheses of the microeconomic model of immigrant employment adjustment proposed by Chiswick (1982). Section 3 introduces our data source and describes the main characteristics of our sample. The empirical model is outlined in section 4 and the logistic regression results are discussed in Section 5. Section 6 concludes the paper.

2.   A Model of Immigrant Employment Adjustment

The key explanatory variables in the standard microeconomic model of employment are an individual's stock of human capital, his family characteristics and his geographical location within a country (e.g. Nickell, 1980). In the light of human capital theory (Becker, 1964) we would expect that individuals are more likely to be employed the larger their stock of skills which are appropriate to the prevailing labour market conditions. Since those with the most desirable skills would not only be the most employable but also earn the highest wages, their opportunity cost of not being in employment is also greater.

Thus human capital accumulation, by means of formal schooling or post-education investments in labour market activity would be associated with higher probabilities of employment. If the post-education investments take the form of on-the-job firm-specific training (often employer-funded) we would expect measures of labour market experience to be associated with lower quit, discharge and layoff rates as the return to that investment in other forms of employment would be much lower. We would expect this positive association to be strongest in the early years of labour market activity, as the expected returns from such investment can accrue over many years.

The probability of being employed has also been found to vary systematically with marital status and family size (e.g. Nickell, 1980, Blackaby et al., 1997). Married men are more likely to be employed than single men since they have more stable work histories, more specialised skills, more

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[4] The latter two categories being very small

motivation for work due to their greater responsibilities and increased pyschic costs of unemployment (Nickell, 1980). Employers may also take marriage as a signal for more responsible, reliable and committed workers who are less likely to quit. Previous studies have found having several dependent children, in the United Kingdom, is associated with lower male employment rates (e.g. Nickell, 1980). The opportunity cost (or reservation wage) of working increases with every dependent child, partly due to social security entitlements increasing household income, and this effect outweighs the increased motivation for work caused by the need to provide for the family (Blackaby et al., 1997). Reduced mobility and feelings of alienation, associated with failure to control fertility, are other possible explanations (Nickell, 1980). We also include dummy variables for region of geographic residence, quarter in which the survey was undertaken and year, as economic opportunities may vary across these locations, seasonally or over time.

Chiswick's (1982) addition to this standard model is based on the job search behaviour of immigrants, as they adjust to the labour market conditions of the host country, and their particular human capital characteristics.[5] Immigrants are assumed to carry with them human capital, in the form of formal schooling and labour market skills, acquired in their country of birth. These skills do not transfer perfectly across national borders due to the different characteristics of each country's labour market (Chiswick, 1978). In addition, the knowledge acquired in the source country by the immigrant, concerning the labour market in the destination country of choice, is assumed to be imperfect. The sources of information, often previous immigrants from the same origin country, may be biased and incomplete. Therefore immigrants (especially the small number who are refugees) are unable to prepare adequately for employment in the destination labour market and are thus at a disadvantage, compared to otherwise equivalent native born males, when they enter it.

As with other new entrants to the labour market, immigrants are unlikely to have already arranged employment and are therefore less likely to be employed. Thus, they will need to engage in job search activity. Moreover, this activity is likely to be less effective than equivalent natives since

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[5] See also Chiswick and Hurst (1998) for a recent discussion.

immigrants may suffer from a lack of appropriate language skills, and have little knowledge of the labour market institutions, job opportunities or business customs. Over time, through investments in location-specific human capital (often learning-by-doing), immigrants adjust to the host country's labour market conditions and acquire the necessary knowledge and employer-desirable skills to enable them to be effective in their job search.

One consequence of the lack of knowledge of local labour market conditions for immigrants is that they are unaware of where the most profitable job opportunities lie. This results in greater uncertainty about those jobs which are offered and provides the incentive for immigrants to engage in more job search activity than the native born, who are able to evaluate job offers more accurately. Thus immigrants might be expected to sacrifice more resources on the job search process in order to understand the local labour market better and find more profitable job opportunities. Since time is one of the most important resources for job search, immigrants, on average, will spend less time in employment than natives.

Some immigrants may intend to return to their origin country after a relatively short period in the host country (Dustmann, 1993). These males have less incentive to invest in location-specific human capital and may be more likely to quit. Immigrants may also be employed disproportionately in temporary and seasonal jobs or be more likely to have been newly recruited, leading to higher job turnover, especially in cyclical downturns.

Additionally, from the employer's perspective, the suitability of immigrants as employees may be hard to judge. This is more likely the less similar is the country of origin to the UK, especially in terms of its economic structure and educational system. The greater their uncertainty, the lower will be employer's estimates of the benefits of hiring foreign born workers, resulting in a lower distribution of wage offers and thus less take-up of employment opportunities by immigrants.

Furthermore, many foreign born workers may not be fluent communicators in the English language, which could severely limit the value, to the employer, of such employees (Chiswick and Miller, 1995) and limit their ability to successfully undertake certain jobs. Together these factors will

result in more hiring mistakes, where immigrant workers are concerned, and therefore higher discharge rates.

However, as the duration of residence in the destination country increases, immigrants will acquire the necessary location-specific human capital and will increasingly accept employment opportunities which match their aspirations and spend less time in job search. Furthermore, employers will be able to assess an immigrant's productivity more accurately and will make fewer hiring mistakes. Thus quit, discharge and layoff rates would be expected to fall. All these adjustments suggest that immigrant workers would, over time, experience employment rates closer to that of native workers.

As Borjas (1992) has argued, the national origin mix of immigrants is a crucial determinant of their labour market performance. Since the quality of schooling varies across countries we would anticipate, even when the quantity of schooling has been controlled for, that immigrants from different countries might benefit to different degrees from schooling they obtained in their country of birth. Furthermore, even if the quality was similar, skills obtained through formal education might not be equally transferable across countries. The same argument applies to post-school human capital investments. There may also be systematic differences in unobserved ability determined before migration by the prevailing characteristics of the origin country. An obvious example is if all the immigrants from one country were forced to leave as refugees.

Only once these possibilities have been controlled for does it make sense to use unexplained coefficient differences as a measure of discrimination. Here, employers may be less willing to hire workers from ethnic minority backgrounds if they use ethnicity as a screening device for less productive workers, engage in discriminatory practices in the access to employment, amongst otherwise identical employees, or, alternatively, be only willing to employ such workers in a limited variety of jobs, thus reducing the employment opportunities amongst such groups (Becker, 1957).

3.   A Description of the Dataset

The data used for this study concerns males, aged 25-64, resident in England, obtained using the Quarterly Labour Force Survey (QLFS) of the United Kingdom. Our particular sample is taken from the eight QLFSs based on interviews conducted between December 1992 and November 1994. By pooling these eight surveys, and taking advantage of the five wave structure[6] of the QLFS, we obtain a sample of approximately 75000 males in England, aged 25-64.[7] Table A1, in the Appendix, presents the variable names we use together with their descriptions.

The means and standard deviations of the characteristics for the white and non-white males in our sample are presented in Table 1[8]. It shows that immigrant whites are less likely, on average, to be employed (76.1%) than their native born counterparts (80.1%), but they possess more years of education (12.86 compared to 11.57). However, their accumulation of potential experience is lower. White foreign born males predominantly reside in London.

The comparable statistics for the 4153 non-white males in our sample show that 85.7% are foreign born. The employment rate for both groups is surprisingly similar (68.8% for natives and 66.9% for immigrants) but native born non-whites have slightly fewer years of education (12.9 compared to 13.3) and only half the amount of potential labour market experience (12.5 years compared to 25.5 years). This implies that these non-white native men have a mean age of 30.45 years whereas non-white immigrants are on average 42.78 years old. As a consequence the foreign born non-whites are more likely to be married and have children. Both non-white groups are largely concentrated in London.

Over half of all foreign born whites, in our sample, came to the UK before 1965.[9] The proportion arriving over the next two decades continuously fell from 12.6% between 1965 and 1969 to 5.0% in the early 1980s, with 16.5% of immigrant whites coming in the last decade. Ireland is by far the largest source country for white immigrants to England, accounting for 30% of our sample.

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[6] Since an individual is interviewed for five successive quarters we are able to take individuals in wave 5 from all quarters and, in addition, those in wave 1 from the last four quarters. This avoids double counting but increases the sample sizes by 50%. We include only those persons who were present at the first interview for their cohort.

[7] These are unlikely to be in full-time education.

[8] Fuller details of both the dataset and our particular sample can be found in Wheatley Price (1998a).

Many of the other white immigrants have British nationality and immigrated to the UK whilst they were still children (see also Shields and Wheatley Price, 1998). Immigrants without British or Irish nationality are more likely to originate in the USA, Canada, New Zealand and Australia, or in the rest of Europe.

The variation in the time of arrival of non-white immigrants to the UK is noticeably different from the white foreign born males. Only 7.8% of surviving non-whites were present in the UK before 1960. During the 1960s about 40% of our sample entered the country. This stimulated a tightening of immigration policy for non-whites (see Hatton and Wheatley Price, 1998, for details). Resulting in a dramatic slow-down over the next fifteen years. More recently, as with white immigrants, about 16.5% of the sample arrived in the last decade.

The source countries for non-white immigrants are also very different for non-whites. Less than 1% of non-white immigrants were born in the major western industrialised countries. The Indian subcontinent is the source of nearly 50% of non-white male immigrants in our sample (India – 24%; Pakistan – 15%). Furthermore, many of the 11.3% of immigrants born in Kenya and Uganda are of South Asian origin. The Caribbean, Africa and the Middle East are also major sources. The performance of the non-white population is therefore likely to differ greatly, even after controlling for other characteristics, due to the diverse characteristics of these origin countries.

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[9] These figures may not be representative of inflows. Some entrants have died, and others may have return migrated.

Table 1

Descriptive Statistics – All Males Aged 25-64 in England 1993-4

Variable	White				Non-White			
	Native Born		Foreign Born		Native Born		Foreign Born	
	Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.
Employment Rate	0.801	0.400	0.761	0.426	0.688	0.464	0.669	0.471
EDUYRS	11.57	2.49	12.86	3.90	12.92	2.90	13.30	4.64
EXPER	26.58	12.05	25.90	13.09	12.53	7.17	24.48	12.40
MARLIV	0.790	0.407	0.775	0.418	0.541	0.499	0.846	0.361
KIDS1	0.148	0.355	0.145	0.352	0.167	0.373	0.177	0.382
KIDS2	0.158	0.365	0.154	0.361	0.123	0.329	0.205	0.404
KIDS3	0.062	0.241	0.074	0.262	0.071	0.257	0.187	0.390
NORTH	0.316	0.465	0.153	0.360	0.174	0.379	0.176	0.381
SOUTH	0.385	0.487	0.360	0.480	0.155	0.362	0.162	0.369
LONDON	0.098	0.297	0.357	0.479	0.467	0.499	0.463	0.499
Pre-1955	–	–	0.207	0.405	–	–	0.016	0.124
1955-1959	–	–	0.147	0.354	–	–	0.062	0.240
1960-1964	–	–	0.154	0.361	–	–	0.195	0.396
1965-1969	–	–	0.126	0.332	–	–	0.190	0.393
1970-1974	–	–	0.093	0.290	–	–	0.172	0.378
1975-1979	–	–	0.059	0.235	–	–	0.123	0.329
1980-1984	–	–	0.050	0.217	–	–	0.076	0.264
1985-1989	–	–	0.087	0.282	–	–	0.084	0.278
1990-1994	–	–	0.077	0.267	–	–	0.082	0.274
IRELAND	–	–	0.299	0.458	–	–	–	–
USA	–	–	0.045	0.207	–	–	–	–
CAN/NZ/AUS	–	–	0.077	0.266	–	–	–	–
SW EUR	–	–	0.055	0.228	–	–	–	–
IT	–	–	0.057	0.231	–	–	–	–
G	–	–	0.064	0.244	–	–	–	–
NW EUR	–	–	0.058	0.234	–	–	–	–
SE EUR	–	–	0.077	0.266	–	–	–	–
E BLOC	–	–	0.042	0.202	–	–	–	–
USA/CAN/NZ/AUS/EUR	–	–	–	–	–	–	0.009	0.096
MID E/N AFR	–	–	0.049	0.216	–	–	0.053	0.224
KEN	–	–	–	–	–	–	0.076	0.265
UG	–	–	–	–	–	–	0.037	0.190
C & E AFR	–	–	–	–	–	–	0.038	0.192
W AFR	–	–	–	–	–	–	0.049	0.216
W C & E AFR	–	–	0.028	0.164	–	–	–	–
S AFR	–	–	0.038	0.192	–	–	0.030	0.170
JAM	–	–	–	–	–	–	0.079	0.271
R CARIB	–	–	–	–	–	–	0.065	0.247
ALL CARIB	–	–	0.011	0.104	–	–	–	–
BANG	–	–	–	–	–	–	0.052	0.223
SRIL	–	–	–	–	–	–	0.022	0.145
IND	–	–	0.030	0.171	–	–	0.243	0.429
PAK	–	–	–	–	–	–	0.147	0.355
BANG/SRIL/PAK	–	–	0.009	0.093	–	–	–	–
HK/MAL/SING	–	–	0.035	0.184	–	–	0.044	0.204
REST	–	–	0.024	0.152	–	–	0.051	0.220
Sample Size	67679		3206		593		3560	

Notes: For dummy variables, the values shown are the proportion of the sample for which the value is one.

4. Empirical Specification of the Model

Given the cross-sectional nature of our dataset and its limitations, we cannot estimate the underlying structural model using separate labour demand and labour supply functions. Consequently we use a reduced form model in order to estimate the probability of a 25-64 year old male, with certain observable characteristics, being in employment (according to our definition), as opposed to not being in employment. The model arises from defining an individual-specific unobservable random index which indicates the propensity, or ability, to obtain employment. Letting E_i^* be the unobserved, or latent, variable given by:

$$E_i^* = x_i`\beta + \varepsilon_i \qquad (1)$$

where $x_i`$ represents a vector of observable characteristics (including a constant) for the ith individual, β is the vector of associated coefficients and ε_i denotes the error term. The choice for the probability distribution function for ε_i is the standard logistic distribution, with mean zero and variance one. However, we do not observe E_i^*. Instead we can define the observed random variable EMP as follows:

$$emp_i = 1 \text{ iff } E_i^* > 0$$

$$emp_i = 0 \text{ iff } E_i^* \leq 0 \qquad (2)$$

which indicates whether the individual i is observed in employment or not. This is equivalent to assuming that we observe the sign of E_i^* but not its numerical value.

As is standard in these analyses (e.g. Nickell, 1980; Blackaby et al., 1997; Chiswick and Hurst, 1998) we use a binary logistic regression model (logit) estimated by the method of maximum likelihood (see Greene, 1993, pp. 635-655 for details) with EMP as the dependent variable. The logit model calculates the probability of the ith individual being observed in employment as follows (Greene, 1993, p.638):

$$\text{Prob} (emp_i = 1) = \frac{e^{(b x_i)}}{\left[1 + e^{(b x_i)}\right]} \qquad (3)$$

We estimate such logistic regression models for the white and non-white samples separately, since we anticipate that the coefficient estimates across these groups will be substantially different.[10] Firstly, the basic human capital employment model[11] is estimated for each of the native born (Model 1) and foreign born (Model 4) groups. Next, using the pooled sample, we introduce a dummy variable to denote whether the individual is an immigrant or not (Model 2)[12]. Then, since immigrant employment might differ with time spent in the UK we replace the immigrant dummy with dummy variables indicating the timing of immigration (Model 3).[13] Controlling for total experience, these variables capture the separate effect of time spent in the UK on employment probability. They enables us to assess whether immigrants' employment prospects approach those of observationally equivalent natives. Finally, in Model 5, estimated for foreign born males only, we include all these variables and other dummies indicating country of birth.

5.   Results

5.1   White Men

Our results for the white male samples are presented in Table 2. The logistic regression results indicate that years of education and years of potential labour market experience have a significant and positive influence on employment in England, amongst all males aged 25-64. Moreover, the effect of potential experience is non-linear, with the coefficient on the years of experience squared variable being negative and significant. Thus, beyond a certain level, extra years of labour market activity are associated with a declining probability of employment.

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[10] Pooled sample estimates of the standard model indicate that there are statistically significant differences between these groups of workers, even when holding returns to other characteristics to be constant across all groups (see Wheatley Price, 1998a for details).

[11] We use years of education, rather than highest qualification, as providss a simple interpretation. Furthermore, many immigrants possess foreign qualifications which may have been incorrectly assigned to UK-equivalent categories. The standard measure of potential experience, we use, may overstate true experience. However, this issue is no so serious for men (Wright and Ermisch, 1991) and the QLFS provides us with no alternative measure.

[12] This is the full extent of most studies' attempt to investigate whether immigrants have different employment outcomes from natives.

[13] This specification allows us to capture the non-linearities far better than a linear or quadratic functional form of years since migration

The reported estimates also show that being married, or living together with a partner, significantly increases, but that having several dependent children significantly reduces, the probability of being employed for white men. Indeed, males are increasingly less likely to be employed the more children they have. These are typical findings and confirm those of previous studies (such as Nickell, 1980; Chiswick, 1982; Blackaby et al., 1997). Geographical location also plays a part in explaining employment rates in England. All white males resident in the South are significantly more likely, and white native born men living in Greater London and the North are less likely, to be employed than those living in the Midlands.

Model 2 indicates that, controlling for observed characteristics and holding the rewards to these variables constant for all individuals, white immigrants are significantly less likely to be employed than white natives. However, controlling for total labour market experience (Model 3), the timing of immigration makes a large difference to the employment prospects of white immigrants. Those white males who came to the UK in the last 25 years all are less likely to be employed than comparable white natives, unlike those arriving between 1955 and 1969. Those arriving between 1980-1985 and 1990-1994 perform least well in the English labour market.

These results indicate a rapid adjustment over the first 5 years in the English labour market, similar to the 3 to 5 year adjustment found in the United States by Chiswick (1982) and Chiswick and Hurst (1998). However, the 1980-1984 cohort appears to be an outlier. For these white immigrant men it may be the case that the harsh prevailing economic conditions may have had a permanent negative affect (or "scar") on this cohort (Chiswick et al., 1997). Alternatively, the survivors, present in our 1993-4 sample, may be negatively selected in unobserved ability, with the most able having return migrated to Ireland, Europe or the United States. Those white males arriving before 1955 are also significantly less likely to be employed. This group is much older and may therefore face declining employment prospects or they have adverse unobserved characteristics since many may have arrived as refugees after the Second World War.

Table 2

Logistic Regression Analysis Of Employment in England 1993-4:
White Males Aged 25-64

Variable	Native Born	Pooled Native & Foreign Born		Foreign Born	
	1	2	3	4	5
EDUYRS	.1049	.0994	.1025	.0744	.0836
	(2.56)	(18.40)	(18.84)	(4.74)	(4.83)
EXPER	.0939	.0943	.0926	.0923	.0693
	(21.64)	(22.56)	(22.05)	(5.83)	(4.04)
EXP2/100	−2603	−2603	−2576	−2396	−2018
	(−34.85)	(−39.09)	(−35.62)	(−8.45)	(−6.82)
MARLIV	1.1831	1.1762	1.1779	1.0813	1.1021
	(43.15)	(44.15)	(44.18)	(9.52)	(9.49)
KIDS1	−.0677	−.0610	−.0612	.0630	.0639
	(−1.80)	(−1.67)	(−1.68)	(0.39)	(0.40)
KIDS2	−2015	−1996	−1995	−1893	−1688
	(−5.18)	(−5.28)	(−5.28)	(−1.17)	(−1.03)
KIDS3	−9924	−9652	−9654	−5275	−4787
	(−21.64)	(−21.65)	(−21.64)	(−2.72)	(−2.40)
NORTH	−3017	−2903	−2898	.0944	.0802
	(−10.43)	(−10.21)	(−10.18)	(0.58)	(0.49)
SOUTH	.1799	.1878	.1891	3907	3325
	(3.11)	(6.52)	(6.56)	(2.74)	(2.27)
LONDON	−1268	−1276	−1194	.0145	.0965
	(−3.14)	(−3.33)	(−3.11)	(0.10)	(0.66)
IMMIGRANT	~	−2934	~	~	~
		(−6.11)			
Pre−1955	~	~	−3023	~	.0051
			(−3.25)		(0.02)
1955−1959	~	~	−.0268	~	3163
			(−0.23)		(1.33)
1960−1964	~	~	−.0308	~	2994
			(−0.25)		(1.29)
1965−1969	~	~	−1202	~	2183
			(−0.86)		(0.93)
1970−1974	~	~	−3356	~	−.0454
			(−2.14)		(−0.19)
1975−1979	~	~	−3585	~	−.0370
			(−1.73)		(−0.13)
1980−1984	~	~	−1.1104	~	−.7918
			(−5.91)		(−3.05)
1985−1989	~	~	−3164	~	#
			(−1.82)		
1990−1994	~	~	−1.0480	~	−.8523
			(−6.60)		(−3.54)

Notes: Asymptotic t-ratios are in parentheses. The base groups for the dummy variables are not married or living together, no children and the midlands. Three seasonal and one year dummy variables were also included in each model. A ~ indicates that the variable was not included in the model.

Table 2
(Continued)

Variable	Native Born	Pooled Native & Foreign Born		Foreign Born	
	1	2	3	4	5
IRELAND	~	~	~	~	#
USA	~	~	~	~	1.1732
					(3.41)
CAN/NZ/AUS	~	~	~	~	.7669
					(3.57)
SW EUR	~	~	~	~	.6481
					(2.81)
IT	~	~	~	~	.4210
					(2.02)
G	~	~	~	~	.2629
					(1.18)
NW EUR	~	~	~	~	.6349
					(2.66)
SE EUR	~	~	~	~	−.0454
					(−0.26)
E BLOC	~	~	~	~	−.2096
					(−0.97)
MIDE/ NAFR	~	~	~	~	−.1920
					(−0.86)
W C & E AFR	~	~	~	~	1.1776
					(2.66)
S AFR	~	~	~	~	.4594
					(1.62)
ALL CARIB	~	~	~	~	−.7712
					(−1.97)
BANG/SRIL/PAK	~	~	~	~	−.1279
					(0.28)
IND	~	~	~	~	.1248
					(0.48)
HK/MAL/SING	~	~	~	~	−.1607
					(−0.61)
REST	~	~	~	~	.2691
					(0.81)
Constant	−.6864	−.6337	−.6459	−.7596	−.7853
	(−6.73)	(−6.52)	(−6.63)	(−2.11)	(−1.94)
Restricted LL	−33812.9	−35589.9	−35589.9	−1762.8	−1762.8
Unrestricted LL	−29427.6	−30988.4	−30963.9	−1544.5	−1495.3
LR Index	0.1297	0.1293	0.1300	0.1238	0.1517
Model χ^2	8770.6	9203.0	9252.0	436.5	534.9
Degrees of Freedom	14	15	23	14	38
Sample Size	67679	70885		3206	

Model 5 shows that, controlling for country of birth and pre-migration potential labour market experience, immigrating between 1980-1984 and 1990-1994 significantly reduces a white male's employment chances, compared to an immigrant arriving between 1985 and 1989. However, all immigrant cohorts before 1980 have insignificant coefficients. Compared with immigrants born in the Republic of Ireland, white foreign born males from the West, Central and Eastern Africa are significantly more likely to be employed, holding other characteristics constant. They even outperform immigrants from the USA. It must be the case that these males received a better quality of schooling, greater parental investments in their schooling, or have highly transferable human capital. Many of these immigrants came to the UK as children, often attending boarding schools whilst their parents remained abroad. Whites born in the USA, Canada, New Zealand and Australia, South West Europe, North West Europe and Italy also outperform the Irish. All other white male immigrants are no more or less likely to be employed than the Irish except those from the Caribbean who have a negative and significant coefficient. Perhaps the quality of schooling is poorer in the Caribbean than in Ireland, or the labour market skills acquired there may be less transferable to the UK.[14]

5.2 Non-White Men

The results of the logistic regression analysis for all non-whites are presented in Table 3. The relative sizes and direction of the estimated coefficients, in Model 1, broadly follow the pattern we observed amongst white native born men. However, the effect of years of education on employment is significant at only the 10% level, and that of potential experience at the 5% level, for non-white natives and only in London are their employment prospects significantly worse than elsewhere. Model 2 finds no significant difference between the employment prospects of native born and foreign born non-white men, holding all other characteristics constant. However, the inadequacy of this summary measure is shown up by Model 3, where seven out of the nine coefficients on the immigrant cohort dummy variables are significantly different from zero.

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[14] However, they are a relatively small group with only 35 persons in this category.

There appears to be an improvement in the employment prospects of non-white immigrants with time spent in the UK. The initial disadvantage compared to native born non-whites, lasts only for ten years and after 15 years foreign born males generally outperform equivalent natives. This broadly confirms Chiswick's (1982) immigrant adjustment model. However, the true comparison, with all native born men, is given in Table A2. These alternative estimates, of Models 2 and 3, show that non-white immigrants have less chance of employment than all native born males, no matter when they arrived. Employment prospects are initially very bad, but then improve over the first 25 years in the UK, before worsening slightly. Therefore, non-white immigrants never attain employment equality with all native born men. This may be because they have poorer unobserved characteristics, a lack of language fluency, non-transferable human capital or suffer discrimination.

Model 4 suggests that education obtained by non-white immigrants is not rewarded at all in the English labour market. Either the quality is poor or it is not transferable to the UK labour market, perhaps due to lack of English language ability. Alternatively, employers may be unable to assess its true value and thus it is not rewarded appropriately in terms of employment opportunities. Potential experience, being married or living together, having several dependent children and living in the South have the same effects on non-white immigrant employment as we observed for non-white natives.

Controlling for years of potential pre-migration labour market experience and country of birth, recent (the 1990-1994 cohort) immigrants have significantly reduced probabilities of employment, compared with those who arrived in the second half of the eighties (Model 5). Employment prospects then increase with time spent in the UK, with those non-white immigrants who arrived between 1955 and 1979 having significantly positive coefficients on their cohort dummies. Non-white immigrants are therefore continuously adjusting to the English labour market.

Compared to non-white immigrants born in India, only those originating in Kenya are more likely to be employed. Most of these immigrants are of Asian ethnicity, and were employed by the British colonial government before Independence was granted. It is probable that they received a higher quality of education, than would have been obtained in India, and had labour market skills that

were more transferable to the UK. They may also have been positively selected, in unobserved ability, with the least able remaining in Kenya or returning to India.

Interestingly, the 33 non-white immigrants born in the major industrialised countries of North America, Europe and Australasia have no better employment prospects than Indian foreign born males. Similar employment outcomes are experienced by those born in Uganda, South Africa, Jamaica, the Rest of the Caribbean, Sri Lanka, Hong Kong, Singapore, Malaysia and the Rest of the World. The Ugandan-born immigrants, comprising mainly ethnic Indians, may perform less well than their Kenyan counterparts due to their forced emigration from Uganda under Idi Amin's rule[15].

The non-white immigrants with the least probability of employment were born in Bangladesh, followed by those from Central and Eastern Africa, West Africa, the Middle East and North Africa and Pakistan. Many of the Bangladeshis arrived as refugees after natural disasters and are, in any case, from one of the poorest countries in the world. The differential employment experience amongst ethnic Blacks (compare Jamaicans with West African, for example) suggests that measures of discrimination based on broad ethnic groups are misleading. Similarly, there is a large and significant difference in the performance of South Asians from different countries.

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[15] 61% of the 133 Ugandan-born immigrants in our sample arrived between 1970 and 1974.

Table 3

Logistic Regression Analysis Of Employment in England 1993-4:
Non-White Males Aged 25-64

Variable	Native Born 1	Pooled Native & Foreign Born 2	Pooled Native & Foreign Born 3	Foreign Born 4	Foreign Born 5
EDUYRS	.0846	.0122	.0100	.0074	.0027
	(1.74)	(1.20)	(0.96)	(0.71)	(0.23)
EXPER	.1130	.1246	.0785	.1359	.0758
	(2.19)	(10.09)	(5.90)	(10.36)	(5.11)
EXP2/100	−.3150	−.3035	−.2519	−.3220	−.2468
	(−2.82)	(−13.15)	(−10.39)	(−13.18)	(−9.32)
MARLIV	1.6726	.8273	.9343	.6707	.7765
	(6.09)	(7.97)	(8.75)	(5.76)	(6.30)
KIDS1	−.6577	−.2473	−.2645	−.192	−.1438
	(−2.02)	(−2.41)	(−2.35)	(−1.62)	(−1.17)
KIDS2	−.7149	.0325	−.0841	.0456	.0736
	(−1.90)	(0.28)	(−0.71)	(0.37)	(0.58)
KIDS3	−1.7379	−.7410	−.8244	−.6608	−.5401
	(−4.16)	(−6.44)	(−6.98)	(−5.48)	(−4.18)
NORTH	−.1808	.2595	−.1915	−.2472	−.0739
	(−0.56)	(2.26)	(−1.63)	(−1.99)	(0.57)
SOUTH	.1255	.3570	.3947	.4134	.4806
	(0.36)	(2.82)	(3.06)	(3.02)	(3.36)
LONDON	−.5126	−.2788	−.1967	−.2321	−.0690
	(−1.93)	(−2.88)	(−1.98)	(−2.21)	(−0.62)
IMMIGRANT	~	−.0849	~	~	~
		(−0.74)			
Pre-1955	~	~	.3794	~	.5836
			(1.14)		(1.69)
1955-1959	~	~	.5878	~	.8577
			(2.75)		(3.62)
1960-1964	~	~	.4019	~	.6669
			(2.48)		(3.55)
1965-1969	~	~	.4711	~	.6701
			(3.16)		(3.87)
1970-1974	~	~	.5415	~	.7176
			(3.54)		(4.10)
1975-1979	~	~	.3168	~	.5879
			(1.97)		(3.31)
1980-1984	~	~	−.0343	~	.2914
			(−0.20)		(1.53)
1985-1989	~	~	−.2978	~	#
			(−1.84)		
1990-1994	~	~	−1.3162	~	−.9674
			(−8.16)		(−5.35)

Notes: Asymptotic t-ratios are in parentheses. The base groups for the dummy variables are not married or living together, no children and the midlands. Three seasonal and one year dummy variables were also included in each model. A ~ indicates that the variable was not included in the model.

Table 3
(Continued)

Variable	Native Born	Pooled Native & Foreign Born		Foreign Born	
	1	2	3	4	5
USA/CAN/ NZ/AUS/EUR	~	~	~	~	.0185
					(0.04)
MID E/N AFR	~	~	~	~	−.5342
					(−2.79)
KEN	~	~	~	~	.4723
					(2.33)
UG	~	~	~	~	.0300
					(0.12)
C & E AFR	~	~	~	~	−.8154
					(−3.84)
W AFR	~	~	~	~	−.6621
					(−3.47)
S AFR	~	~	~	~	−.2134
					(−0.87)
JAM	~	~	~	~	−.0577
					(−0.35)
R CARIB	~	~	~	~	−.2217
					(−1.24)
BANG	~	~	~	~	−.8532
					(−4.53)
SRIL	~	~	~	~	.1511
					(0.50)
IND	~	~	~	~	#
PAK	~	~	~	~	−.4929
					(−3.66)
HK/MAL/SING	~	~	~	~	.2200
					(0.98)
REST	~	~	~	~	.0306
					(0.15)
Constant	−1.4298	−.5750	−.1260	−.6595	−.0862
	(−1.42)	(−2.41)	(−0.51)	(−2.38)	(−0.26)
Restricted LL	−368.1	−2628.4	−2628.4	−2259.9	−2259.9
Unrestricted LL	−329.5	−2393.2	−2317.3	−2046.3	−1937.9
Model χ^2	77.2	470.5	622.2	427.2	644.0
Degrees of Freedom	14	15	23	14	36
Sample Size	593	4153		3560	

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5.3   Predicted Percentage Employment Rates

Since the absolute and relative values of the coefficients and associated marginal effects of non-linear

discrete models are difficult to interpret, especially when dummy variables are used (Greene, 1993 p.

639), we have simulated the estimated probabilities of each category variable, whilst holding the other

category variables at their mean values.[16] We report the predicted employment rates, from models 1

and 5, in Table 4, for the white and non-white samples, as percentages. For the continuous variables,

the predicted employment rate is given for an average male with two less (or two more) years of

education and five less (or five more) years of potential labour market experience than the mean

number of years for each group[17]. For dummy variables we evaluate the predicted probability of an

otherwise average person when the characteristic holds (value = 1) and when it does not (value equals

zero).

A native born white male with average characteristics has a predicted employment rate of

83.34% . This compares with 80.22% for the average foreign born white male, 71.71% for a native

born non-white and 69.42% for an average non-white immigrant. Decreasing the number of years of

education by two, from its mean value, reduces the employment rate of white natives by an average of

3.1% , by 3.56% for non-white natives, 2.79% for an average white immigrant and by only 0.11% for

a non-white immigrant. This provides strong evidence to suggest that the education obtained by this

latter group is either of such poor quality that it counts for nothing in terms of employment in

England, or it is hardly transferable to the UK, perhaps due to language difficulties. This is despite the

fact that this group has, using our measure, the highest mean years of education of all males currently

residing in the UK (13.30).

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[16] The predicted probability of employment of a person with average group characteristics can be calculated from the logistic distribution $\Pr\left(\overline{X},\hat{b}\right) = \dfrac{1}{1+\exp^{-\left(\hat{b}\overline{X}\right)}}$, where $\overline{X}$ denotes the vector of characteristics at their mean values and $\hat{b}$ is the vector of estimated coefficients associated with the measured characteristics.

[17] However, the non-linear nature of the underlying distribution means that these values depend crucially on the starting point for comparision. The marginal effects of a further similar adjustment are unlikely to be the same.

Table 4

Predicted Percentage Rates of Employment in England 1993-4:

White and Non-White Males Aged 25-64 With Mean Characteristics

Variable	White		Non-White	
	Native Born	Foreign Born	Native Born	Foreign Born
Mean Person	83.34	80.22	71.71	69.42
EDUYRS –2	80.22	77.43	68.15	69.31
EDUYRS + 2	86.05	82.74	73.01	69.54
EXPER –5	85.39	82.14	66.37	72.79
EXPER + 5	78.95	76.38	73.48	63.01
MARLIV = 0	66.27	63.32	50.63	54.07
MARLIV = 1	86.51	83.86	84.52	71.90
KIDS0 = 1	84.73	81.03	77.75	71.74
KIDS1 = 1	83.83	81.99	64.41	68.73
KIDS2 = 1	81.93	78.30	63.09	73.20
KIDS3 = 1	67.28	72.58	38.06	59.66
MIDLANDS = 1	83.87	77.44	76.52	68.72
NORTH = 1	79.36	78.81	73.12	67.11
SOUTH = 1	86.16	82.72	78.70	78.03
LONDON = 1	82.08	79.08	66.12	67.22
Pre–1955 = 1	~	80.15	~	72.20
1955–1959 = 1	~	84.64	~	77.36
1960–1964 = 1	~	84.42	~	73.84
1965–1969 = 1	~	83.32	~	73.91
1970–1974 = 1	~	79.33	~	74.81
1975–1979 = 1	~	79.47	~	72.29
1980–1984 = 1	~	64.53	~	65.98
1985–1989 = 1	~	80.07	~	59.17
1990–1994 = 1	~	63.14	~	35.52
IRELAND = 1	~	75.97	~	~
USA = 1	~	91.09	~	~
CAN/NZ/AUS = 1	~	87.19	~	~
SW EUR = 1	~	85.81	~	~
IT = 1	~	82.81	~	~
G = 1	~	80.44	~	~
NW EUR = 1	~	85.64	~	~
SE EUR = 1	~	75.13	~	~
E BLOC = 1	~	71.94	~	~
USA/CAN/NZ/AUS/EUR = 1	~	~	~	73.51
MID E/N AFR = 1	~	72.30	~	61.49
KEN = 1	~	~	~	81.37
UG = 1	~	~	~	73.73
C & E AFR = 1	~	~	~	54.66
W AFR = 1	~	~	~	58.42
W C & E AFR = 1	~	91.12	~	~
S AFR = 1	~	83.35	~	68.76
JAM = 1	~	~	~	72.00
R CARIB = 1	~	~	~	68.58
ALL CARIB = 1	~	59.39	~	~
BANG/SRIL/PAK = 1	~	73.56	~	~
BANG = 1	~	~	~	53.72
SRIL = 1	~	~	~	76.01
IND = 1	~	78.18	~	73.15
PAK = 1	~	~	~	62.46
HK/MAL/SING = 1	~	72.92	~	77.25
REST =1	~	80.54	~	73.75

Due to the non-linear relationship between years of potential labour market experience and employment, an additional five years reduces the predicted employment rate, for the average male, and five less years increases it for all groups except the non-white native born.[18] For native born whites, five years less in the labour market increases the probability of employment by 2%, whilst non-white natives lose 5.34%. White immigrants, reflecting the reward to potential labour market experience gained abroad (and controlling for time spent in the UK) gain 1.92% whilst non-white immigrants increase their probability of employment by 3.37%. In other words, white immigrant men receive greater rewards, or lesser penalties, for potential work experience gained before they migrated than comparable non-white men. This may reflect the increased relevance of their acquired labour market skills to the UK environment or the fact that employers find such attributes easier to assess, since they were gained by most white immigrants in Western industrialised countries.

Being married or living together and having several dependent children make an enormous difference to the probability of being employed. For native born whites the former increases the predicted employment rate, over single men, by 20.24% and penalty for the latter amounts to 17.45%, over having no children. It is interesting to note that for the average non-white native born male, the employment differential between himself and the average white native born man is almost eliminated (only 2% compared to 11.6%) if he is married and nearly halved if he has no children, despite his younger age profile. Thus the employment disadvantage they experience may reflect the importance employers place on such characteristics as signals of unobserved responsibility and productivity and the personal choices these individuals have made. However, the same finding does not occur for non-white immigrants, or indeed white immigrants.

For immigrants, the extent of the initial employment disadvantage is evident from the predicted employment rates for those who immigrated between 1990 and 1994. Only 63.14% of white immigrants, with average characteristics and who arrived in that period, are likely to be employed, whilst the employment rate for non-white immigrants is predicted to be just 35.52%. Evidently, the

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[18] This latter group are, of course, much younger on average and so the starting point for comparison is very different.

white immigrants come with more pre-arranged jobs, are better informed about the opportunities available in the English labour market before they arrive, or are more effective in their initial job activity. Perhaps they have to invest less in location specific human capital, including English language ability, or employers are more willing to take them on as their qualifications and labour market skills are more recognisable or appropriate to the UK labour market.

For white immigrants, the employment rate rises to 80%, and, ignoring the anomaly of the 1980-1984 cohort, stays there after just a few years in the English labour market. This pattern of assimilation, for white immigrants in England, accords with Chiswick's (1982) and Chiswick and Hurst's (1998) findings for the United States. For the average non-white immigrant the assimilation in employment is rapid, but they never attain equivalent employment rates to those of natives. Over the first five years, employment rates jump by nearly 24%. The rapid assimilation pattern is again in line with the predictions of Chiswick's (1982) model.

The continuing adjustment of non-white immigrants, over the first 20-25 years in the UK (to an employment rate of nearly 75%), indicates that these men must have been less well prepared for the English labour market, than whites. They take much longer to adapt, suggesting that this process is hindered by their foreign qualifications, lack of English language fluency, adverse unobserved characteristics or discriminatory attitudes. Some of this disadvantage persists as there remains a gap in employment rates, between non-white immigrants and white natives, though they do overtake average non-white native employment rates after only 15 years in the English labour market.

The importance of country of birth, in determining the employment prospects of immigrants, is evident from the predicted probabilities associated with the country group dummy variables. For white immigrants, having been born in the United States or West, Central and East Africa raises the employment rate by over 10% above the average for that group. Those coming from Canada, New Zealand, Australia, South West and North West Europe also experience at least a 5% employment advantage. The white immigrants least likely to be employed are the small number born in the Caribbean, with a predicted probability of employment 21% lower than the average. Those from the

Eastern Bloc, the Middle East and North Africa, Hong Kong, Malaysia and Singapore are 7-8 percentage points worse off in terms of employment. Evidently, the quality of the human capital acquired in these countries is poor, or it is not very transferable to the English labour market, or these immigrants are negatively selected in unobserved characteristics.

Amongst non-white immigrants, those born in Kenya perform the best (12% better than the mean person), with Sri Lankans (6.6%) and those from Hong Kong, Malaysia and Singapore (7.8%) also performing well above average. However, immigrants from Pakistan, the Middle East and North Africa have a 7-8% employment rate disadvantage, with those born in West Africa (11%), Central and East Africa (15%) and Bangladesh (16%) performing least well in the UK labour market. Evidently, the quality of their schooling and labour market skills must be much poorer than that of other non-white immigrants, or the human capital acquired before migration must be very difficult to transfer. Alternatively, their unobserved characteristics must have detrimental affects on their employment prospects or they have little knowledge of the English language.

6.   Conclusions

We have examined the employment adjustment of white and non-white men, aged 25-64, to the English labour market, using data from the Quarterly Labour Force Survey of the United Kingdom. Hypotheses, proposed by Chiswick (1982), concerning the effect of time spent in the United Kingdom and country of birth were examined using logistic regression analysis. Our results show that there are large differences in the access to employment for 25-64 year old males in the English labour market, according to ethnicity and immigrant status. More years of education improve employment chances for all groups whilst more years of potential labour market experience are initially beneficial, but thereafter are detrimental, to the probability of employment. Single men, and those with several dependent children face particular employment difficulties.

For immigrant workers, Chiswick's (1982) employment adjustment model is broadly confirmed. For both white and non-white foreign born males, the initial employment disadvantage

diminishes rapidly over the first five years in the UK. This finding is in line with those of Chiswick (1982) and Chiswick and Hurst (1998) for the United States. Non-whites, however, never attain employment equality with native born men, though the adjustment process continues for a further 20 years. There also are wide variations in the employment experience of immigrants, according to country of birth, and possible cyclical or scar effects on the 1980–1984 cohort of white immigrants. Some of these differences may be attributable to the quality of schooling obtained abroad, some to the lack of transferability of human capital acquired before migration, some may be due to the self-selection in unobserved characteristics of immigrants or the absence of English language ability amongst these men. Only once these factors have been accounted for can the remaining differences be attributed to discrimination.

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Table A1
Variable Definitions

NAME	DESCRIPTION
EDUYRS	years of full-time education (from age 5)
EXPER	years of potential experience (age – EDUYRS – 5)
EXP2/100	EXPER squared divided by 100
MARLIV	married or living together
KIDS1	one child
KIDS2	two children
KIDS3	three or more children
LONDON	Greater London
SOUTH	Southern England (rest of)
NORTH	Northern England
Pre-1955	immigrated before 1955
1955-1959	immigrated between 1955 and 1959
1960-1964	immigrated between 1960 and 1964
1965-1969	immigrated between 1965 and 1969
1970-1974	immigrated between 1970 and 1974
1975-1979	immigrated between 1975 and 1979
1980-1984	immigrated between 1980 and 1984
1985-1989	immigrated between 1985 and 1989
1990-1994	immigrated between 1990 and 1994
IRELAND	Republic of Ireland
USA	United States of America
CAN/NZ/AUS	Canada, New Zealand, Australia
SW EUR	Gibraltar, Malta & Gozo, Portugal, Spain
IT	Italy
G	West Germany
NW EUR	Austria, Benelux, France, Scandinavia, Switzerland
SE EUR	Cyprus, Greece, Turkey
E BLOC	Formerly Communist European countries
USA/CAN/NZ/AUS/EUR	USA, CAN/NZ/AUS, all European categories
MID E/N AFR	Middle East, North Africa
KEN	Kenya
UG	Uganda
C & E AFR	mainly Ethiopia, Somalia, Tanzania, Zaire
W AFR	mainly Gambia, Ghana, Nigeria, Sierra Leone
W C & E AFR	Kenya, Uganda, C & E AFR and W AFR
S AFR	Malawi, Mauritius, South Africa, Zambia, Zimbabwe
JAM	Jamaica
R CARIB	Rest of the Caribbean
ALL CARIB	Jamaica & Rest of the Caribbean
BANG	Bangladesh
SRIL	Sri Lanka
IND	India
PAK	Pakistan
BANG/SRIL/PAK	BANG, SRIL and PAK
HK/MAL/SING	Hong Kong, Malaysia, Singapore
REST	Central and South America, Rest of Asia

Notes: The base groups for MARLIV, KIDS and the regional dummy variables are single, separated, widowed or divorced, no children and the midlands.

Table A2

Logistic Regression Analysis of Employment in England 1993-4: Alternative Pooled Sample Models
of Non-White Foreign Born Against All Native Born Males Aged 25-64

Variable	2*	3*
EDUYRS	.0762	.0823
	(15.64)	(16.66)
EXPER	.1025	.0962
	(25.46)	(23.59)
EXP2/100	−.2750	−.2653
	(−39.30)	(−37.59)
MARLIV	1.1562	1.1685
	(43.77)	(44.11)
KIDS1	−.1011	−.0976
	(−2.86)	(−2.75)
KIDS2	−.1824	−.1869
	(−4.95)	(−5.06)
KIDS3	−.9358	−.9544
	(−22.07)	(−22.43)
LONDON	−.3017	−.2943
	(−10.78)	(−10.51)
SOUTH	.1916	.1950
	(6.71)	(6.82)
NORTH	−.1891	−.1780
	(−5.20)	(−4.87)
IMMIGRANT	−.8515	~
	(−19.75)	
Pre-1955	~	−.7452
		(−2.51)
1955-1959	~	−.5081
		(−3.27)
1960-1964	~	−.6723
		(−7.48)
1965-1969	~	−.5029
		(−5.29)
1970-1974	~	−.4796
		(−4.57)
1975-1979	~	−.7400
		(−6.15)
1980-1984	~	−1.0269
		(−7.16)
1985-1989	~	−1.3861
		(−10.68)
1990-1994	~	−2.4899
		(−19.22)
Constant	−.4704	−.4587
	(−5.15)	(−4.98)
Restricted LL	−36617.1	−36617.1
Unrestricted LL	−31942.4	−31833.7
Model χ^2	9349.4	9566.8
Degrees of Freedom	15	23
Sample Size	71831	

Notes: Asymptotic t-ratios are in parentheses. The base groups for the dummy variables are not married or living together, no children and the midlands. Three seasonal and one year dummy variables were also included in each model. ~ indicates variable not entered.