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Racial and Economic Factors in Attitudes to Immigration*

Christian Dustmann and Ian P. Preston

Abstract

In this paper we distinguish between three channels that determine attitudes to further immigration: labour market concerns, welfare concerns, and racial or cultural concerns. Our analysis is based on the British Social Attitudes Survey. A unique feature of the survey is that it includes questions on attitudes towards immigration from different origin countries, with populations differing in ethnic similarity to the resident population. It also contains sets of questions relating directly to the labour market, benefit expenditure and welfare concerns, and racial and cultural prejudice. Based on this unique data source, we specify and estimate a multiple factor model that allows comparison of the relative magnitude of association of attitudes to further immigration with the three channels, as well as comparison in responses across potential immigrant groups of different origin. Our results suggest that, overall, welfare concerns play a more important role in determination of attitudes to further immigration than labour market concerns, with their relative magnitude differing across potential emigration regions and characteristics of the respondent. In addition, we find strong evidence that racial or cultural prejudice is an important component to attitudes towards immigration; however, this is restricted to immigration from countries with ethnically different populations.

KEYWORDS: international migration, attitudes

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1 Introduction

The debate on immigration features highly on the political agenda both in Europe and in the US. The economic consequences of immigration for the native population, the perceived effects on cultural identity and social cohesion, and the strong feelings involved make immigration a topic which figures prominently in political campaigning. Regulations concerning immigration are frequently adjusted according to changes in the economic situation. Often however it is not the economic considerations alone, but shifts in general attitudes of the public towards immigration that lead to re-design of immigration policies. To understand what drives individual preferences over immigration policies is thus an important research area, both for descriptive political economy and for policy design, and recently a literature has developed that analyses this.

A prime concern often thought to influence the way preferences over further immigration are formed is the way in which individuals perceive the effects of immigration on the labour market. In an important paper on attitudes towards further immigration, Scheve and Slaughter (2001) suggest that the way individuals assess these effects may relate to basic intuitions about labour market equilibria.[1] Simple models with a single output good and multiple labour types (see for example, Altonji and Card, 1991) do point to a possibility for immigration to harm those workers who compete with immigrants.[2] Scheve and Slaughter (2001) report a strong relationship between education and more favourable attitudes to further immigration, which is consistent with the hypothesis that the low skilled are opposed to immigration because of a fear of labour market competition. Mayda (2005), arguing within a similar theoretical setting and using cross-country data, finds evidence for a positive correlation between individual skill level and pro-immigration attitudes in countries where the relative skill ratio of natives to immigrants is high. Using cross-state varia-

[1] Other papers that analyse the determinants of individual preferences over immigration policies in several countries include Gang, Rivera-Batiz and Yun (2002), Mayda (2005), Fertig and Schmidt (2002), Bauer, Lofstrom and Zimmermann (2001), O'Rourke and Sinnott (2003), Hanson, Scheve and Slaughter (2004, 2005) and Facchini and Mayda (2006). Aslund and Rooth (2005) study shifts in attitudes in response to the terrorist attacks of 9/11.

[2] Empirical evidence establishing the existence of adverse effects is scarce (see Borjas 1999b, and Friedberg and Hunt 1995 for overviews), although there is an ongoing debate on the issue (see e.g. Card 2005 and Borjas 2003 for diverging views). Lewis (2003, 2005) tests the hypothesis of two alternative adjustment mechanisms to immigration, adjustment through output mix (see the discussions in Leamer and Levinsohn 1995, and Gaston and Nelson 2000), and within-industry technology adjustment, and finds strong evidence for the latter.

tion for the US, Hanson, Scheve and Slaughter (2005) establish similar evidence and conclude that labour market pressures of immigration are an important determinant of public opinion on immigration restrictions.

Labour market competition may, however, not be the only economic concern which forms preferences over immigration. According to Borjas (1999a, p.105), the second economic issue in the historical debate over immigration policy in the United States is whether immigrants pay their way in the welfare system. He argues that in the US, immigrants receive a disproportionately large share of the welfare benefits distributed. Borjas (1999a) draws attention to the possible impact of immigration on dependency ratios and the consequent effects on the cost of the benefit and social security systems. Since, under progressive taxation, any implied tax burden will bear more heavily on richer households, this provides a possible reason for greater concern among those with higher incomes.

There is evidence that public opinion is guided by the view that more immigrants are an additional burden on the welfare system. Simon (1989) provides a history of anecdotal evidence on public opinion towards further immigration, where both welfare considerations and labour market fears are the two major concerns. Dustmann and Preston (2005), investigating the determinants of the economic impact of immigration, find that welfare considerations are the largest single factor of concern, and more important than labour market concerns.[3] Using cross-state variation in the US, Hanson, Scheve and Slaughter present evidence that exposure to immigrant fiscal pressure reduces support for immigration in particular among the more skilled. Facchini and Mayda (2006) study welfare-state determinants of individual attitudes towards immigrants. Based on cross-country data, they report attitudinal responses which they argue make sense in the context of a redistributive fiscal system.

In addition to these two economic determinants, there are also non-economic channels through which preferences over further immigration may be shaped. Opposition to immigration may be motivated by reasons which relate to the cultural and ethnic difference of the immigrant population. Opposition may be fueled by a fear of loss of national characteristics and identity, or a taste for cultural homogeneity. Cultural and ethnic distance may severely hinder the social integration process, and this may be considered to induce social tensions and costs. There is ample evidence that deeply rooted hostility exists towards immigration groups with largely different cultural and ethnic back-

[3] Dustmann and Preston's analysis focusses on responses to a question about the economic consequences of immigration, not on whether immigration regulations should be tightened, as do most of the other papers cited.

grounds. This hostility manifests itself in remarks of politicians and opinion leaders. For instance, the then opposition leader and future British Prime Minister Margaret Thatcher referred in a famous 1978 television interview to a British fear of being "rather swamped by people with a different culture" (Layton-Henry, 1992, p.184). Some of the aforementioned papers present evidence that attitudinal questions regarding concern about identity or crime (Mayda, 2005) or ideology (Scheve and Slaughter 2001) are indeed associated with preferences for tighter immigration regulation.

In this paper, we contribute to the literature on attitude formation by analysing the importance of welfare concerns as well as racial and cultural prejudice, alongside labour market concerns, as three key aspects that determine preferences about immigration. Our methodological approach is to explicitly model these three channels through which immigration attitudes may be affected. We do this by formulating and estimating a multiple factor model. The basic idea of our methodology is to use sets of multiple questions addressing each of the three dimensions of concern (the labour market, welfare, and cultural or racial prejudice) and the correlations among responses to identify common underlying components. We then infer the importance of these in explaining variation in attitudes to immigration.

The problem with basing conclusions on interpretation of the association between *individual characteristics* and immigration attitudes within a labour market model or/and a welfare model is that the most important characteristics are associated with attitudes to immigration through different channels, so that the separation of their roles is difficult. For example, the fact that the highly educated are more liberal in their attitudes may reflect that their labour market position is less vulnerable to immigration of the typically expected skill composition. However, it could also reflect the strong association of education with attitudes to welfare or to culture. In this paper we explicitly model the channels through which these may impact on attitudes about immigration regulation. An important research question which we address is then the relative contributions of these alternative explanations in explaining shifts in general attitudes of the public towards immigration, and how individual characteristics work through these channels. A further contribution of our analysis is to separate the role of the three channels in driving attitudes regarding clearly distinguishable immigrant groups. The data on which our analysis is based (various waves of the British Social Attitudes Survey, BSA) allows us to do so, as it is unusual in distinguishing explicitly between attitudes to immigration from different regions of origin. Our data also contains extremely specific geographical information on respondents, which allows us to merge in objective environmental information at a very precise spatial level

on local unemployment and ethnic composition.

We allow responses of the native population to differ along various dimensions. We distinguish between different occupation groups (separating manual and non-manual workers), and different education groups (separating low, medium and high education groups). This allows us to directly investigate the association of cultural and racial prejudice, labour market concerns, and welfare concerns with preferences towards more immigration across different skill levels. We therefore use a more direct approach than Scheve and Slaughter (2001) in assessing whether the differences in relative preferences towards further immigration across skill groups are compatible with predictions of equilibrium trade and labour market models. Furthermore, the distinction made in our data between immigrants of different ethnic and cultural backgrounds, allows us to assess the relative association of each of these factors with preferences towards further immigration for different skill groups, and across immigrant populations of different ethnic and cultural dissimilarity.

Our findings are interesting and novel in several respects. First, our descriptive evidence shows that opposition towards further immigration is strongly related to the proposed origin of immigrants, with much larger resistance the more ethnically distinct the immigrant population is. Second, we establish that welfare concerns are generally a more important driver of attitudes than labour market concerns, in particular towards groups with a high welfare dependence. These views are strongest among respondents who are likely to be the biggest contributors if immigration, as sometimes suggested by those most hostile, induces a tax-financed increase in welfare dependency. Our analysis also shows that racial/cultural prejudice is an important underlying channel through which overall attitudes are driven, in particular for the low skilled.

The structure of the paper is as follows. Section 2 outlines our econometric model, and explains estimation and identification of the parameters. Section 3 provides a brief overview of migration to the UK, documents skills and occupational achievements of immigrants, and discusses the data we use. Section 4 provides some descriptive evidence. Section 5 presents and discusses results, and section 6 concludes.

2 Separating Factors in Attitudes to Immigration

2.1 Econometric Specification

The idea of our empirical approach is as follows. The variable we wish to explain is the respondent's attitude to further immigration. In our data, this question is asked four times, distinguishing between four different origin regions (India/Pakistan, the West Indies, Europe, and Australia/New Zealand). We relate these responses to three (unobserved) channels (or factors) through which attitudes may be formed: labour market concerns, welfare concerns, and cultural or racial prejudice. We identify three sets of questions in the BSA regarding issues which are each strongly related to one or other of these channels. Questions regarding labour market security include questions on the fear of job loss, the ease of finding a job and expected future wage paths. Questions indicating welfare concerns include a question on adequacy of benefit levels, perception of recipients' needs, and willingness to pay for increased public social spending. Questions indicating racial or cultural attitudes include attitudes towards inter-ethnic marriage, having a minority boss, and self admitted prejudice against minorities. We report the wording of the questions in Appendix D.

We use responses to these sets of questions to isolate a common element for each of the three factors. One way of doing this would be to take some average of each of the three sets of responses for each respondent, and to regress, in a second step, the overall response to the immigration question on the new variables obtained in this way. This is conceptually similar to our approach, which can be thought of as weighting and normalising the single questions when combining them into a single factor. The approach we follow makes more efficient use of the data. Further, we adopt a normalisation that allows comparison of magnitudes of coefficients across the different responses.

We now explain our procedure in more detail. Our model consists of three equations:

$$y_i^* = f_i \Lambda + X_i A + u_i \,, \tag{1}$$

$$f_i = X_i B + v_i \,, \tag{2}$$

$$z_i^* = f_i M + X_i C + w_i \,. \tag{3}$$

Equation (1) relates the responses to the four questions regarding further immigration in the 1×4 vector y_i^* to the three "latent factors" f_i which we have described above (labour market, welfare, and cultural/racial concerns), conditional on individual and contextual information X_i. Consequently, f_i is a 1×3 vector, with coefficients in the 3×4 matrix Λ. As we only observe discrete responses to questions regarding further immigration, y_i^* is a vector of latent responses. A is a $k \times 4$ matrix of conditional responses of attitudes to k other observed characteristics X_i (such as age, education etc.). The term u_i is an error term, and we assume that $u_i \sim N(0, \Sigma_u)$. The parameters in the matrix Λ are the main parameters of interest; they measure the magnitude of association between each of the three concerns we consider, and attitudes to further immigration.

Equation (2) relates the latent factors to the regressors X_i, where B is a $k \times 3$ matrix of coefficients, and $v_i \sim N(0, \Sigma_v)$. Finally, equation (3) relates the set of responses that relate to each of the three factors, z_i^*, to the latent factors f_i and observed characteristics X_i. In our case, we observe 10 responses that "reveal" the f_i: four for labour market concerns, three for welfare concerns, and three for racial and cultural concerns. Accordingly, z_i^* is a 1×10 vector, M is a 3×10 matrix of coefficients, and C is a $k \times 10$ matrix of conditional responses to X_i. Again, as only discrete responses are observed, z_i^* is a vector of latent responses. We assume that $w_i \sim N(0, \Sigma_w)$.

We further assume that u_i and w_i are uncorrelated with X_i and f_i, which implies that they are also uncorrelated with v_i. Therefore, $E[u_i v_i'] = \Sigma_{uv} = 0$ and $E[w_i v_i'] = \Sigma_{wv} = 0$.

Consider now the reduced form equations, which are obtained by substituting (2) in (1) and (3):

$$y_i^* = X_i(B\Lambda + A) + u_i + v_i \Lambda = X_i \Gamma_1 + \epsilon_{1i}\,, \tag{4}$$

and

$$z_i^* = X_i(BM + C) + w_i + v_i M = X_i \Gamma_2 + \epsilon_{2i}\,, \tag{5}$$

where $\epsilon_i = [\epsilon_{1i} | \epsilon_{2i}]' \sim N(0, \Sigma_\epsilon)$. The matrix

$$\Sigma_\epsilon = \begin{pmatrix} \Sigma_u + \Lambda\,\Sigma_v\,\Lambda' & \Sigma_{uw} + M\,\Sigma_v\,\Lambda' \\ \Sigma_{uw}' + \Lambda\,\Sigma_v\,M' & \Sigma_w + M\,\Sigma_v\,M' \end{pmatrix} \equiv \begin{pmatrix} \Sigma_{11} & \Sigma_{12} \\ \Sigma_{12}' & \Sigma_{22} \end{pmatrix} \tag{6}$$

is the $(4+10) \times (4+10)$ variance-covariance matrix of the reduced form residuals and Σ_{uw} denotes $E(u_i w_i')$.

Our estimation strategy now proceeds in three stages. In the first stage, we estimate the reduced form coefficient matrix $\Gamma = [\Gamma_1|\Gamma_2]'$. We do that by estimating the coefficients of each equation in (4) and (5) (corresponding to the rows of Γ) separately by independent (ordered) probits. Due to the discrete nature of the dependent variables, we can only estimate their ratios to the standard deviations of the associated error components.

In the second stage we obtain the parameters in Σ_ϵ. Again, a normalisation assumption is required. We adopt the identifying normalisation that the diagonal elements in Σ_u and in Σ_w are such as to make the diagonal elements of Σ_ϵ equal to unity. To estimate Σ_ϵ, we take each pairing of questions successively, and estimate the corresponding off-diagonal component of Σ_ϵ by bivariate maximum likelihood. We fix the coefficients of the two equations concerned at the values in Γ estimated in the previous stage.[4]

Finally, in the third step we estimate the parameters in M, Λ and Σ_v using minimum distance estimation and the restrictions $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$ and $\Sigma_{12} = \Sigma_{uw} + M\,\Sigma_v\,\Lambda'$. To do so, we make the following assumptions. First, we assume that each of our indicator questions in z^* is indicative of one and only one factor. For instance, the three questions on the labour market are assumed to be affected only through the labour market channel, the three questions on welfare concerns only through the welfare channel, and so on. This means that we assume that MM' is a block diagonal matrix, with only one non-zero element in each row of M. Second, we assume that all correlation between responses to these questions (conditional on the regressors X_i) is accounted for by the factor structure, which implies diagonality of the Σ_w matrix. Notice that we allow for correlation between the factors, since Σ_v is not required to be diagonal. Finally, we set the diagonal elements of Σ_v to unity, which is simply a normalising assumption.

Given these assumptions, there is sufficient information in Σ_{22} from the conditional correlations between responses *within* blocks to identify all elements of M.[5]

Having identified M, the off-diagonal elements of Σ_v are identified without

[4] Consider for instance the responses to the first two immigration questions, with the latent two equation model being $y^*_{1i} = X_i\gamma_1 + \epsilon_{1i}$ and $y^*_{2i} = X_i\gamma_2 + \epsilon_{2i}$. We estimate the covariance $Cov(\epsilon_{1i}, \epsilon_{2i})$ using a bivariate probit likelihood, where we fix γ_1 and γ_2 at the estimates obtained in the first stage, $\hat{\gamma}_1$ and $\hat{\gamma}_2$.

[5] Remembering the particular structure of $M\Sigma M'$, suppose that the ith diagonal block has q_i elements. Then there are $q_i\,(q_i-1)/2$ off-diagonal elements in the corresponding block of Σ_{22} from which to identify them. This is sufficient if $q_i \geq 3$, which is so for each block in our case. This is not to say that the condition is necessary since there is also identifying information in the elements of off-diagonal blocks.

further restriction from the remaining elements of Σ_{22}, that is to say from the correlations between elements in different blocks. Since all conditional correlation between responses in different blocks is assumed to be driven solely by the correlation between factors, considerable overidentifying restrictions are involved at this point. We report tests of these restrictions.

Identification of Λ comes from the elements of Σ_{12}. We assume that the correlation between responses to the immigration questions y^* and the indicator questions z^* is accounted for by the factors f, conditional on observables X. This implies that $\Sigma_{uw} = 0$ and therefore $\Sigma_{12} = M\,\Sigma_v\,\Lambda'$. With M and Σ_v identified before, this is sufficient to identify Λ if $p \leq q$, which is to say that there are fewer factors than indicator questions. With $p = 3$ and $q = 10$, this is clearly the case in our application. To estimate the parameters in M, Λ and Σ_v, we impose in the third stage the restrictions on Σ_{12} and Σ_{22} by minimum distance.

Computation of the variance-covariance matrix of the parameters is described in full in Appendix A. The estimation procedure outlined above does not guarantee positive semi-definiteness of the estimated asymptotic variance-covariance matrix for the parameter estimates, and we describe in the Appendix how we deal with that.[6]

Our main focus is the coefficients in Λ, and how they relate to each other in magnitude. Note that $\Lambda = \mathrm{d}y_i^*/\mathrm{d}f_i$ and neither y_i^* nor f_i, both being latent, have a unique natural scale of variation. However, the commonality of normalisation imposed here justifies comparability of coefficients within Λ,[7] which is important for the interpretation of our results below. Given also the common form of the questions regarding immigration policy, it makes sense to compare the elements in Λ in terms of effects on probabilities, which is how we report them below.[8]

The most critical assumption sustaining a causal interpretation of Λ is that $\Sigma_{uw} = 0$, which implies that $E(y_i^*|z_i^*, X_i) = E(y_i^*|E(f_i|z_i^*, X_i), X_i)$. In other words, conditional on observables X_i, all association between y_i^* and z_i^* should come through the three factors. This assumption would be violated if, for example, unobserved individual heterogeneity that affects labour market concerns is at the same time correlated with opposition to further immigration, conditional on X_i. Although we believe that much of the individual hetero-

[6] All programs are written by the authors in GAUSS and are available on request.

[7] That is to say, the residual variances along the diagonals of Σ_ϵ and Σ_v are each set to unity.

[8] In other words, we report $\phi(X_i\Gamma)\Lambda$, where we evaluate X at sample averages so that the values can be interpreted as the effect of a one standard deviation change in the relevant component of f_i on the probability of hostility to immigration.

geneity that is not already captured by the factors is likely to be captured by our observables X_i, we can not exclude this possibility and therefore prefer to refer to the estimated parameters as "associations" rather than "effects". The fact that none of the questions on which the identification of our factors is based refer specifically to further immigration can be regarded as reducing the potential for spurious correlation.

3 Background and Data

3.1 Immigrants in the UK

According to the 2001 UK Census, the percentage of foreign-born individuals in the British population is 8.3 percent (or 4.9 million), almost twice as high as in 1951, when the corresponding number was 4.2 percent. Britain has always been a destination for intra-European immigrants, most notably for the Irish (Chance, 1996). However, in the post-war period, Britain saw large numbers of immigrants arriving who were ethnically different from the predominantly white resident population.

Immigration of Commonwealth citizens was most pronounced in the two decades after the war. While the early 1950s were characterised by migration from the Caribbean, in the late 1950s a growing number of immigrants arrived from the Indian subcontinent. Later immigrants arrived from Pakistan and Bangladesh. Labour market shortages in the period after the war led also to recruitment of European workers to fill certain labour market shortages. These workers were predominantly from Southern Europe, but also from Poland. After the 1971 act, an increasing fraction of immigration was due to family unification, which remained for a time largely unrestricted. Favourable economic conditions in Europe prevented large migrations after 1971. Governmental response to the Ugandan Asian crisis of 1972 nevertheless led, despite the restrictive legislation adopted by then, to a renewed boost in the settlement of those of Asian origin. For further details on immigration to the UK, see Wheatley-Price and Hatton (2005) and Spencer (1997).

The questions regarding immigrant origin asked in the BSA and which we consider in our analysis below, relate to individuals from three immigration areas: the West Indies, India and Pakistan,[9] the area of the (then) European common market, and Australia/New Zealand. Over the period which we consider (1983-1990), immigrants from these four groups form about 63 percent of

[9] Throughout the paper, we refer to this source of immigration as "Asian", in line with wording typically used in the BSA.

Table 1: Selected Characteristics of Natives and Foreign-Born

Variable	**Natives**	**Foreign Born**	**West Indies**	**Asia**	**European**	**Aust./ N.Z.**
% of Tot. Imm. Pop.			5.9	20.89	33.55	2.48
Years FT Education	11.24	11.91	11.19	10.89	11.34	13.48
High Education	13.12	19.67	13.81	14.43	15.60	33.87
Inter. Education	47.55	52.64	34.94	33.00	39.75	54.04
Low Education	39.32	39.12	51.26	52.58	44.64	12.09
Age	36.46	40.31	44.79	38.15	44.72	31.96
% Claiming UB	7.70	8.61	14.12	12.22	7.57	4.46

[a]: Data: British Labour Force Survey (LFS), 1983-1990. Regions definition: Asia: India, Pakistan, Bangladesh, Asian Ugandans; Europe: EU (old definition, before 1991); Australasia: New Zealand and Australia.
Education: High education: university degree, higher education; Intermediate education: A- levels and O-levels and equivalent or other qualification; Low education: no qualification.

the overall immigrant population in Britain. In table 1 we display some of the key characteristics of these groups, where numbers are drawn from the British Labour Force Survey (LFS). Most noteworthy is the educational composition of the immigrant population. Unlike the US and many European countries, immigration to the UK is, and has always been, relatively high skilled, with immigrants having on average higher levels of schooling than native born whites.[10] In the table, we report two measures of education: the years of full-time schooling, and three levels of education. On average, immigrants have slightly more years of education than the native born, but there is variation across the three groups. The distribution of educational achievement is likewise similar between the groups, with immigrants being 6 percentage points more likely to hold a degree or have higher education, while about equally likely to have no qualification at all. Immigrants from Australia/New Zealand have the highest level of education, with on average more than 2 years more full-time education than white natives, and with 34% obtaining university or post-secondary higher education, compared with only 13% among natives. Asians and immigrants from the West Indies are similar to natives at the high end of the skill distribution, but have a substantially higher fraction of individuals with low educational backgrounds. Overall, Australians/New Zealanders appear to be

[10] Although the table considers only subgroups of immigrants, the same is true for Britain's overall immigrant population, see Dustmann and Fabbri (2006) for details.

the highest educated of the four groups, followed by the Europeans. Based on these numbers, we should expect that labour market competition should be a concern for the highly skilled when assessing immigration from New Zealand and Australia, and for the low skilled for immigration from the West Indies and Asia.

In the last row, we display the percentage in each of the groups that claims unemployment benefit. Here immigrants are overall more likely to be claimants than natives, but there is considerable variation across groups, with the West Indian and Asian immigrants having probabilities to claim unemployment benefits that are twice as high as those of white natives, while immigrants from Europe are similar, and immigrants from Australia and New Zealand substantially less likely. If potential new immigrants are similar in this respect to those already present, then those with the highest expectation of bearing the burden from increased welfare costs may be particularly concerned about immigration from Asia and the West Indies. The incidence of the fiscal consequences of higher welfare dependency will depend on whether the greater cost is met by raising taxes or by cutting public expenditure and on how exactly this is done. In principle, the cost could fall on the rich or poor, but if the increase is in the most progressive aspects of the tax system, then it will be those on high incomes who suffer most (Fetzer 2000, Dustmann and Preston 2005, Facchini and Mayda 2006).

3.2 The British Social Attitude Survey

Our attitudinal data is drawn from seven years of the British Social Attitudes Survey (BSA)(1983, 1984, 1985, 1986, 1987, 1989, 1990). This gives us an eight year period over which key questions were repeatedly asked in a form which remained unchanged. Later years of the BSA ask questions on immigration less regularly, and in a form which is not consistent from year to year. We use the data for England and concentrate on white respondents only.[11] There are three sets of variables which we use for our analysis. First, questions on attitudes to further immigration. Second, questions that are related to the three underlying channels by which immigration preferences may be affected. And third, questions that reflect heterogeneity across individuals in preferences due to individual and context characteristics. We describe these variables briefly below.

[11] Racial identity is self-assessed. Attitudes of ethnic minority individuals towards their own communities, or towards other ethnic minorities, are likely to be driven by different mechanisms. While it might be interesting to investigate their attitudes, the sample sizes within the BSA become very small when considering attitudes of minorities only.

The key variables in our analysis are based on questions concerning opinions about immigration from different origin countries. As discussed above, distinctions are drawn between immigration from the West Indies, from India and Pakistan, from other countries in the European common market, and from New Zealand and Australia. We create binary variables for all these responses. In Appendix D, we report the full wording of the original questions and some summary statistics.

We decompose these attitudes into the three factors we have discussed above, using the methodology we describe in section 2. For that purpose, we use an array of questions which are specific to each of the suggested underlying channels that affect attitudes to immigration. As we discuss earlier, questions related to labour market concerns include fear of job loss, perception of job security, perceived ease of finding a new job, and expectations of wage growth. Questions related to welfare concerns cover opinions on generosity of benefits, needs of welfare recipients, and willingness to pay higher taxes to expand welfare provision. Finally, questions related to race consist of opinions on inter-ethnic marriage, acceptability of an ethnic minority superior at work, and self rated prejudice against minorities. Again, the exact wording of the questions and summary statistics are given in Appendix D.

Not all of these questions were asked in every year. The number of responses to each question in each year that can be used is summarised in Appendix B in table B1, where usability is determined by availability of data on both regressors and dependent variables. In our estimation procedures, we make maximum use of the available data. All observations covered in table B1 are used.

The survey does not allow us to distinguish between foreign born and native born respondents. We do however observe ethnicity. We exclude ethnic minority individuals from our analysis. Respondents therefore still include the white foreign born. For the UK, and over the period we consider, this population forms only a small part of the overall population (3.8 percent). We demonstrate below that this would, even for an extreme scenario of radically different attitudes of this group, hardly affect our empirical results.

The survey has extensive socioeconomic information on respondents, including education, income, age, religion, and labour market status. The set of variables in the matrix X above describe the individual's own characteristics, like their income situation, labour market characteristics, education, age, sex, and religious beliefs, and variables that describe the individual's environment, like the local unemployment rate, and minority concentrations. In table 2 we report summary statistics on these variables.

The two variables describing the characteristics of the local area of residence

Table 2: Sample Statistics

Variables	**Mean**	**StdD**
Unemployment rate, County level	0.0437	0.0203
Ethnic minority concentration, County	0.0262	0.0285
Rank in Income Distribution	0.5008	0.2877
Manual worker	0.4555	0.4980
Ever Unemployed	0.1687	0.3745
Ever Long Term Unemployed	0.0609	0.2392
Female	0.5368	0.4986
High Education Level	0.1017	0.3022
Low Education Level	0.4991	0.5000
Age	45.936	17.706
Catholic	0.1005	0.3007
No religion	0.3462	0.4757

are the unemployment rate and the concentration of ethnic minorities. The former is based on yearly district level unemployment statistics. The latter is interpolated from ward level census data for 1981 and 1991. We aggregate both of these variables to the county level to minimise endogeneity issues arising from location choice (see Dustmann and Preston, 2001, for a discussion of endogenous location).[12]

The household income variable is reported in banded form in the data. Rather than calculating a continuous measure in units of income, we have computed the average percentile point of households in that band in the income distribution, for the specific year in which the individual is interviewed. When thinking about the effect of income on attitudes, we have in mind the effect of the relative position of the individual in the income distribution, rather than some absolute income measure. Our definition of household income seems therefore quite natural in this context.

The individual characteristics we include in X consist of variables that are likely to reflect differences in attitude to further immigration. Age is likely to affect attitudes for several reasons. First, it is a direct measure of life experience. Second, it marks the position of the individual in their economic cycle. Finally, the age variable captures cohort effects. We have added two variables on religious beliefs, reflecting whether the individual is Catholic or not religious. Attitudes may be influenced both by the high weight placed by

[12] County is an administrative unit, covering on average 1.27 million people, and corresponding plausibly to a local labour market.

Table 3: Migration Attitudes, Different Segments

	All	Manual	Non Manual	High Ed.	Medium Ed.	Low Ed.
West Indian	66.46	69.48	65.56	50.45	55.05	70.36
Asian	70.58	75.08	68.46	50.36	68.90	75.61
European	46.21	51.19	43.19	30.80	44.91	50.09
Australians, New Zealand	33.19	34.63	32.96	27.17	35.38	33.62

Response variable: 1 if prefers less settlement of respective population group.
Respondents: white.

many religions on the virtue of tolerance, but also by any tendencies to particularism that may be associated with specific creeds. It is also possible that religious affiliation may reflect historic experiences of persecution or current feelings of marginality (Fetzer, 2000) of particular groups of the population. We also include dummy variables indicating whether the individual has ever been unemployed, either in the short or long term, and is female. Finally, as context variables, we include the local unemployment rate and the local concentration of ethnic minorities.

We classify people according to whether they are manual or non-manual workers. Furthermore, we distinguish between three education categories. We allocate individuals to the high education category if they remained in education beyond age 18, and to the low education category if they did not remain in school beyond either age 15 or the compulsory school leaving age (whichever is earlier).

4 Descriptive Results

4.1 Attitudes by Country of Origin

We now turn to the variables on responses to the questions regarding further immigration. The ability to distinguish between responses from immigrant populations that differ in ethnicity from the majority population is a particular strength of our data. In table 3, we report mean responses, where we distinguish between different education groups, and manual and non-manual workers.

The numbers in the table show quite dramatic differences in responses according to the origin of potential immigrants. About two in three respondents

oppose further settlement of ethnically different populations (the first two rows in the table), while about one in two opposes settlement of European immigrants, and one in three settlement of Australians and New Zealanders. These numbers suggest that opposition to further immigration increases with ethnic and cultural distance.

The next columns distinguish attitudes by breaking down respondents according to whether they are manual or non-manual workers, and their education status. Manual workers have a slightly more negative attitude towards all immigrant groups than non-manual workers. Across education groups, there is a clear tendency towards support for a more restrictionist immigration policy, the lower the educational background of the respondent. For all potential immigrant populations, the same pattern is evident, with preferences towards further immigration becoming more supportive, the less ethnically different the immigrant population. For Australians and New Zealanders, there is no majority of respondents in any group favouring less settlement.

If respondents were only to consider economic reasons in formation of their attitudes, we should on average expect that any differences in responses across groups reflect the perceived differences in the impact different groups have on the UK economy and labour market. Considering tables 1 and 3, there seems to be conflicting evidence in the data for this hypothesis. On the one side, the higher opposition of the low educated to immigration from Asia and the West Indies than from Australia/New Zealand seems in line with individuals from the first two groups having higher fractions of low educated, and thus possibly posing the strongest threat in the labour market. On the other hand, Australians/New Zealanders have the highest percentage of highly educated individuals, and should be perceived as a particular threat to highly educated natives, while individuals from the Indian subcontinent should pose the least threat. Nevertheless, the percentage of highly educated that opposes immigration from Australia/Asia is 23 percentage points lower than that opposing further immigration from the Indian subcontinent. The numbers in table 1 show also that different immigrant groups also have differing propensities to claim benefits, with, for example, higher proportions of those of West Indian and Asian origin claiming unemployment benefit. If the effect on costliness of the benefit system leads to higher tax rates (rather than cuts in benefit levels) then under a re-distributive tax and benefit system, it would be the more highly educated who would bear the major burden of this (see Dustmann and Preston, 2006 for a fuller discussion), providing perhaps one explanation for the difference in attitudes.

Table 4: Disapproval of Further Immigration

Variable Variable	Less West Indian		Less Asian		Less European		Less Aust., N.Z.	
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio
Compulsory Ed.	**0.035**	1.63	**0.055**	2.57	**0.040**	1.81	**0.005**	0.25
High Ed.	**-0.149**	-4.85	**-0.160**	-5.62	**-0.131**	-3.81	**-0.109**	-3.27
Level Income	**0.090**	2.48	**0.068**	1.99	**0.015**	0.38	**0.047**	1.29
Rank								
Manual Worker	**0.014**	0.67	**0.036**	1.80	**0.047**	2.17	**0.011**	0.53
Ever Unemployed	**-0.012**	-0.43	**0.000**	0.00	**-0.005**	-0.19	**0.011**	0.44
Ever L.T. Unemployed	**0.018**	0.39	**-0.019**	-0.43	**0.008**	0.18	**-0.053**	-1.25
Female	**-0.003**	-0.14	**-0.004**	-0.23	**0.019**	0.95	**0.005**	0.29
Age	**0.576**	2.26	**0.294**	1.21	**1.234**	4.66	**1.653**	6.39
Age^2	**-0.256**	-0.96	**-0.096**	-0.39	**-1.074**	-3.97	**-1.873**	-7.05
Unemployed Rate	**-0.225**	-0.47	**-0.515**	-1.12	**0.397**	0.77	**-0.265**	-0.55
Ethnic Min. Conc.	**-0.002**	-0.01	**0.137**	0.50	**0.203**	0.64	**0.294**	1.01
Catholic	**-0.063**	-2.26	**-0.073**	-2.58	**-0.024**	-0.76	**-0.028**	-0.91
No religion	**0.008**	0.43	**-0.009**	-0.47	**0.014**	0.71	**0.026**	1.38
Sample size	4624		4650		4638		4644	

Marginal effects from probit models, evaluated at sample means.
All estimations include time dummies.

4.2 Attitudes and Individual Characteristics

Before turning to a more structural analysis in the next section, we establish as a next step the relationship between the various immigration questions and respondents' individual characteristics, as well as regressors which characterise the respondent's environment. Means of the variables are given in table 2.

These regressions are similar to those presented in other papers, like Scheve and Slaughter (2001). In table 4, we report marginal effects, evaluated at the sample mean. The reported coefficients on binary variables are the differences in probabilities between the groups for which the binary variable takes the value unity and the base group.

Of particular interest are the education variables. Intermediate education is the excluded group. Overall, our estimates indicate that the more edu-

cated are more favourable towards further immigration than those with an intermediate level of education, while the low educated are slightly more unfavourable. These findings are in line with those of others (for example Scheve and Slaughter, 2001, Bauer, Lofstrom and Zimmermann, 2001, Hanson, Scheve and Slaughter, 2005, Mayda, 2005 and Citrin, Green, Muste and Wong, 1997). But our results also indicate that the origin of the potential immigrant population may relate to the way views on further immigration are formed, and that these differ across education groups. While the highly educated are on average 16 percentage points less likely to be in favour of restrictive immigration policies towards immigrants from Asia (as compared to individuals with intermediate education), this reduces to 15 points for immigrants from the West Indies, to 13 for immigration from Europe, and to 11 for immigration from Australia and New Zealand. Similarly, when comparing individuals in the lowest education category with individuals with intermediate education, the sharpest differences are for immigration from Asia, while there are no differences in preferences regarding immigration from Australia and New Zealand. Taking the point estimates at face value, this suggests that the association of education with attitudes towards further immigration changes with the degree of cultural and ethnic distance of the prospective immigrant population, with differences being largest across education groups for the most ethnically different groups. This could be partly explained by labour market concerns. Given the educational distribution of the four immigrant groups presented above, a labour market model would suggest that the highly educated should be more opposed to further immigration from Australia/New Zealand than to Asia or the West Indies, compared to the lower educated. However, the magnitude of differences between Europeans on the one side and Asians/West Indians on the other, seems to be far larger than what the differences in skills (see table 1) would suggest.

Interesting also are the coefficients of the income measure, which is the rank of the individual in the income distribution in that particular year. Notice that the coefficients we report are conditional on education, thus isolating the pure association of the rank in the income distribution with attitudes. The estimates suggest that individuals in higher quantiles of the income distribution are more opposed to further immigration, particularly so from the West Indies and Asia.[13] The higher welfare dependence of West Indians and Asians as compared to Europeans and Australians/New Zealanders, as illustrated in table 1, is compatible with the relative magnitude of this variable across immi-

[13] Alternatively, we used an absolute measure of income rather than percentile ranges, and results are very similar.

grant origin groups. This estimated income effect is in accord with what would be expected if those bearing a higher burden of any imagined tax consequences were more opposed to immigration, suggesting that such considerations may play an important role when forming attitudes towards further immigration. Thus, conclusions one could base on these empirical findings are similar in nature to those of Facchini and Mayda (2006).

Corresponding probit models for the ten questions used to identify the three channels (the variables that underlie the vector z^* in our notation above) are reported in tables B3-B5 of Appendix B. In Appendix D we provide the exact wording of the questions and the frequency of responses (tables D1-D9). In table B6 we report the estimated residual correlations. Entries in that table correspond to the estimated matrix Σ_ϵ. We see that attitudes towards immigration from different sources are indeed highly correlated and especially so between attitudes towards West Indian and Asian immigration. Answers to the ten indicator questions are clearly more strongly correlated within blocks than between, in accordance with the model to be fitted. Finally, attitudes to immigration are correlated with answers to the indicator questions, though most strongly so in the case of racial and cultural attitudes, and least so in the case of labour market concerns. In terms of the model to be applied these correlations reflect both the strength of association between the latent factors and attitudes to immigration, Λ, and the reliability of the auxiliary questions as indicators of the factors, M. In order to separate these and to focus on the parameters of interest in Λ, we therefore turn now to the results of fitting the model to these residual correlations.

5 Results

5.1 Attitudes and Economic, Welfare and Cultural Concerns

We now present results from estimating the association between the three channels of concern we have discussed above and immigration attitudes. We first show results we obtain for the full sample. We then split the sample according to skill and educational groups. These results are discussed further below. We report the estimates of the parameters in Λ in table 5.[14] The underlying probit estimates are reported in Appendix B.

[14] Equally weighted minimum distance estimates are reported in Appendix E and are very similar.

Table 5: Attitudes to Immigration and Channels of Concern: All Respondents

Variable	Labour Market		Welfare		Culture/Race		diag(Σ_u)
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio	Coeff
West Indian	**0.057**	2.23	**0.064**	2.90	**0.167**	11.02	0.680
Asian	**0.052**	2.09	**0.072**	3.27	**0.178**	11.36	0.577
European	**0.049**	1.60	**0.051**	2.07	**0.048**	3.19	0.953
Aust.,N.Z.	**0.042**	1.53	**0.033**	1.44	**0.001**	0.10	0.984
Test$_1$ $\chi^2_{32} = 39.713$ P-value $= 0.164$							
Test$_2$ $\chi^2_{60} = 63.592$ P-value $= 0.351$							

The reported parameters are MDE estimates of the matrix Λ as in (1), scaled to give effects on probabilities of expressing hostile attitudes. Estimates are conditional on variables reflecting county unemployment rate and minority ethnic concentration, income, manual status, unemployment history, sex, education, age and religion.
Restrictions imposed: $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$, $\Sigma_{12} = \Lambda\,\Sigma_v\,M'$

The coefficient estimates in the table can be interpreted as the association between each of the three channels of concern and attitudes to further immigration from any of the four origin regions. As we point out above, the estimates are reported as effects of a one standard deviation change in the latent factor on the probability of hostility from the given source. They are therefore comparable across rows and columns in magnitudes, allowing assessment of the relative strength of each of the factors in determining attitudes to further immigration. Note that, as we implicitly regress on all the individual and context characteristics we discussed above, the estimates are conditional estimates, netting out compositional differences across correspondents. Thus, we eliminate possible spurious correlation through omission of, for example, employment status or education.

As we point out in section 2, the parameters in M and Λ are identified from the reduced form matrices of estimated residuals, Σ_{12} and Σ_{22}, imposing the restrictions $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$ and $\Sigma_{12} = \Lambda\,\Sigma_v\,M'$. There are considerable overidentification restrictions involved, and we can test for those. In the tables, we report tests on three sets of restrictions. Test$_1$ is a test of $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$. This tests whether the correlations between indicator questions in different blocks can be accounted for fully through the factors and the cross-factor correlations in Σ_v. This test can be seen as a test of the structure we impose on the M-matrix, in that sets of indicator questions in z relate each to only one of the three factors with correlations in off-diagonal blocks captured through Σ_v.

Test_2 is a joint test of $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$ and $\Sigma_{12} = \Lambda\,\Sigma_v\,M'$. This tests additionally the restriction that the correlations between questions on immigration and the indicator questions can be fully accounted for through the hypothesised reduced dimensional factor structure. The test statistics are χ^2 distributed, with degrees of freedom determined by the number of restrictions imposed. In the tables we report the p-values of these tests.

Before we interpret the parameters of immediate interest, represented by the matrix Λ above, we would first like to draw attention to the intermediate coefficients of the matrix M, which we report in Appendix C. These suggest that the correlations between indicator questions z_i determine each channel of concern with a high degree of precision and plausible magnitudes. The test statistic Test_1 shows, furthermore, that the restrictions that correlations between indicator questions in different blocks can be accounted for fully through the factor structure and the cross-factor correlations in Σ_v, are comfortably accepted.

Turning to Λ, the numbers in table 5 show sizeable associations between attitudes to further immigration and both labour market concerns as well as welfare concerns. In fact, welfare concerns seem to be slightly larger in magnitude than labour market concerns in influencing overall attitudes to immigration, for each of the immigrant groups considered, emphasising the importance of this channel in attitudes to further immigration. Across different immigrant groups, the point estimates for labour market concerns seem to be slightly larger for West Indian and Asian immigrants than for New Zealanders/Australians and Europeans; however, differences in parameters are never significant. Welfare concerns are more relevant when forming attitudes towards further immigration from the West Indies and Asia, which is compatible with the numbers on welfare receipt we have displayed in tables 3.

Racial and cultural prejudice seems to play a strong role in attitudes to immigration from the West Indies and Asia, though less so for Europeans and not at all for New Zealanders/Australians. For West Indians and Asians, the two groups that are ethnically most distant from the respondent population, this seems to be the strongest channel through which preferences for further immigration are formed. This suggests that the sizeable differences in attitudes to further immigration that we have illustrated in the simple descriptives in table 3 are largely driven by this particular channel.

The figures in the last column, headed $\text{diag}(\Sigma_u)$, can be interpreted as the proportion of the residual variance regarding attitudes to immigration from the source in question which is not associated with any of the factors, conditional on observables in X. Thus, $1 - \text{diag}(\Sigma_u)$ has an interpretation not dissimilar to the partial R^2 in a regression context. For immigration from the more

ethnically distinct sources, from one half to two thirds of the residual variance remains unaccounted for in terms of the factor model. For immigration from Australia and New Zealand, almost all remains unaccounted for.

Finally, we note that estimation of Λ implies additional overidentifying restrictions over and above those required to estimate M, and that these are very easily accepted at usual significance levels. This offers important corroborating evidence for the approach taken since the restrictions are substantial (see Test_2).

Equation (2) relates individual characteristics to the different channels we consider. The parameters in B would be interesting, as they measure the importance of individual characteristics in explaining variation of the three channels. If we were willing to assume $C = 0$ then we would have $\Gamma_2 = BM$ and an estimate of B could be readily calculated. Such a restriction is, however, heavily rejected.

5.2 Skill and Education Groups

Our discussion above suggests that individuals in different sectors of the labour market, or of different skill levels, may have reasons to view immigration differently. It has often been argued that manual workers, as well as less skilled workers, are more vulnerable to low skilled immigration (Borjas, 1999b). If immigration is perceived as being mainly low skilled, then one might expect that this would show up in a difference in the factors driving attitudes of workers in distinct labour market segments.

Our simple summary statistics on the attitudinal responses, split across different labour market groups (see table 3), indicate that attitudes towards further immigration tend to be less favourable among manual than non-manual workers; furthermore, preference for more immigration increases with educational background. Although our analysis above takes account of variables describing these segments by incorporating them as regressors, we now estimate separate systems for the different groups. The restrictions imposed differ in allowing all coefficients of the Λ matrix to vary between population subgroups.[15]

[15] The restrictions imposed are $\Sigma_{22i} = \Sigma_w + M\,\Sigma_v\,M'$ and $\Sigma_{12i} = M\,\Sigma_v\,\Lambda_i'$, where i corresponds to the subgroups (for example, manual and non-manual).

Table 6: Attitudes to Immigration and Channels of Concern, by Manual/Non-Manual, Labour Force Only

Variable	Labour Market		Welfare		Culture/Race		diag(Σ_u)
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio	Coeff
			Non-Manual				
West Indian	**0.058**	1.51	**0.079**	1.97	**0.160**	5.56	0.700
Asian	**0.064**	1.90	**0.099**	2.37	**0.182**	5.63	0.567
European	**0.060**	1.45	**0.040**	1.05	**0.046**	1.65	0.950
Aust.,N.Z.	**0.066**	1.68	**-0.001**	-0.03	**0.036**	1.13	0.958
			Manual				
West Indian	**0.025**	0.55	**0.005**	0.11	**0.186**	4.77	0.739
Asian	**0.021**	0.41	**0.000**	0.00	**0.229**	5.41	0.590
European	**0.004**	0.09	**0.019**	0.43	**0.058**	1.83	0.970
Aust.,N.Z.	**-0.023**	-0.54	**0.027**	0.59	**-0.008**	-0.27	0.989
Test$_1$ χ^2_{77} = 77.334 P-value = 0.468							
Test$_2$ χ^2_{133} =125.915 P-value = 0.656							

The reported parameters are MDE estimates of the matrix Λ estimated separately for manual and non-manual workers.

The restrictions imposed are: $\Sigma_{22i} = \Sigma_w + M\,\Sigma_v\,M'$, $\Sigma_{12i} = \Lambda_i\,\Sigma_v\,M'$

Manual and non-manual workers

We report results of the coefficients in Λ_i for manual and non-manual workers in Table 6.[16] The upper panel reports results for non-manual workers, and the lower panel for manual workers. The sample is restricted to those in the labour force for this table.

The results show that labour market concerns and welfare concerns appear to be important for non-manual workers, with welfare concerns being slightly stronger than labour market concerns in forming preferences to further immigration from the West Indies and Asia. Again, if non-manual workers carry the larger part of the welfare burden of a re-distributive tax system, then this is compatible with higher welfare receipt of these groups of immigrants as seen in table 1, to which these workers may react particularly sensitively. Labour market concerns seem to be roughly of equal importance across the different groups of potential immigrants.

The association of preferences for further immigration with racial or cul-

[16] The test statistic Test$_2$ indicates that the restrictions imposed are clearly accepted. These now include not only the restrictions imposed in earlier sections applied to each group but also the restriction of common M and Σ_v matrices in the different groups.

tural prejudice is strong for Asians and West Indians, and for these groups, of higher magnitude to welfare concerns. For Europeans on the other hand, the association of overall attitude to immigration with racial or cultural prejudice is similar in magnitude to labour market and welfare concerns. For Australians and New Zealanders, only labour market concerns seem to play a role.

The lower panel shows results for manual workers. Here, labour market and welfare concerns seem to be unimportant channels for the formation of attitudes to further immigration, while racial or cultural prejudice remains strong, in particular for attitudes towards further immigration from Asia and the West Indies; it is less important for Europe, and vanishes for Australia/New Zealand.

The contrast between the two groups is notable: while welfare and labour market concerns seem to have a negligible impact on the opinions of manual workers towards any of the immigrant populations, they are a strong factor for non-manual workers. It may be that economic competition from potential immigrants is perceived most strongly by the higher skilled. This is in line with the skill structure of immigrants to the UK, as illustrated in table 1, with a higher percentage of degree holders among the foreign born minority groups. This is also compatible with empirical findings by Dustmann, Fabbri and Preston (2005) on the impact of immigration, where workers with intermediate skills are the only group for which there is clear evidence of an employment response to immigration. Alternatively, the strong presence of racial and cultural concerns for manual workers may be an indication that the opinion formation process is based on simpler prejudicial perceptions rather than more elaborate opinions about the impact or consequences of immigration. To further investigate these issues, we now split up the sample into three education groups.

Low, medium, and high education

In table 7 we report results where we distinguish between three education groups (low education, medium education, and high education) according to the age at which the respondent left full time education.[17] The top panel reports results for the highly educated, the middle panel for individuals with intermediate education, and the lower panel for individuals with low education.

The differences across these groups, in terms of the importance of the three channels in relating to preferences over further immigration, is quite striking. For the highly educated, the quantitatively most important channel and the

[17] The high P-value on the test statistic Test_2 indicates again that the restrictions of common M and Σ_v matrices in the different groups are comfortably accepted.

Table 7: Attitudes to Immigration and Channels of Concern, by Education Group

Variable	Labour Market		Welfare		Culture/Race		diag(Σ_u)
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio	Coeff
			High Education				
West Indian	**0.185**	2.06	**0.232**	2.66	**0.135**	2.15	0.142
Asian	**0.176**	2.21	**0.222**	2.69	**0.129**	2.35	0.019
European	**0.181**	1.59	**0.190**	1.95	**0.004**	0.05	0.696
Aust., N.Z.	**0.124**	1.26	**0.140**	1.60	**–0.007**	-0.12	0.822
			Medium Education				
West Indian	**0.058**	1.11	**0.099**	2.13	**0.144**	4.42	0.663
Asian	**0.045**	0.96	**0.109**	2.65	**0.139**	5.04	0.574
European	**0.070**	1.04	**0.089**	1.69	**0.041**	1.31	0.921
Aust., N.Z.	**0.068**	1.10	**-0.017**	0.36	**0.026**	0.90	0.962
			Low Education				
West Indian	**0.029**	0.76	**0.019**	0.56	**0.174**	8.18	0.712
Asian	**0.023**	0.57	**0.022**	0.66	**0.182**	7.85	0.604
European	**0.024**	0.48	**0.018**	0.53	**0.057**	2.91	0.972
Aust., N.Z.	**0.018**	0.42	**0.027**	0.80	**0.008**	-0.41	0.995
Test$_1$ $\chi^2_{122} = 81.372$ P-value $= 0.998$							
Test$_2$ $\chi^2_{206} = 158.596$ P-value $= 0.994$							

The reported parameters are MDE estimates of the matrix Λ estimated separately by education group.

Restrictions imposed: $\Sigma_{22i} = \Sigma_w + M\,\Sigma_v\,M'$, $\Sigma_{12i} = \Lambda_i\,\Sigma_v\,M'$

statistically best-determined seems to be welfare concerns. These indeed play a particularly strong role for immigrants from the West Indies and Asia, which, since these groups have the highest welfare dependence, is in line with what might be expected under a redistributive system of welfare and taxation, where consequences of further immigration are financed through tax changes. There is strong evidence also of labour market concerns being important, with slight differences in point estimates across groups.

Racial and cultural concerns also matter, but only for the West Indians and Asians, and less so than the other two issues. However, the contribution of this last channel may explain the pattern for the highly educated that we discussed in table 3.

In sharp contrast is the relative importance of these three channels for the low educated. As it appears from the numbers in the table, the labour market channel and the welfare channel seem to be much less important in the formation of preferences to further immigration. However, racial and cultural

concerns are important, both in terms of size as well as significance level. While largest for immigration from the West Indies and Asia, this channel is also relevant to European immigration, but vanishes for Australians/New Zealanders.

The low importance individuals in the lowest education group attach to the welfare channels is again compatible with a re-distributive system where most of the welfare burden is borne by the highest educated. Similarly, the lower weight these individuals attach to the labour market channel may be in line with the educational distribution of immigrants in the UK, which does not clearly indicate that the competitive pressure for one group or another should increase.

Individuals in the medium education category have an intermediate position on these aspects. Labour market concerns are much weaker and statistically insignificant, but welfare concerns retain a strongly determined role, albeit one now weaker than racial and cultural concerns. Interesting again is the pattern in welfare concerns where point estimates are larger for the two groups that are indeed highest in their welfare dependence when considering unemployment benefits. As for the highly educated and the low educated, cultural and race concerns are strong for those immigrant groups that are ethnically most distant from the majority population.

The clearest finding among these results from an economic point of view is the importance of considering welfare concerns as a possible channel in determining preferences for further immigration. Overall, our findings are compatible throughout with the perception of a redistributive welfare system, where the better off expect to bear the burden of immigration with high welfare dependence. The common expectation that low preference towards immigration amongst the least skilled and least educated is driven by economic concerns does not seem to be supported by our findings. In fact, our results indicate that it is the views of the most educated that are most influenced by economic factors. However, these results are not at odds with the particular skill structure of immigrants to the UK - where immigrants are relatively well educated compared to the majority population - which is in sharp contrast to the US or some continental European countries (see table 1). Finally, from a broader perspective, our estimates show that racial and cultural concerns are of major importance for attitudes to further immigration, and that these concerns are the largest driver of preferences to further immigration for low education groups.

6 Discussion and Conclusion

It is commonly argued that immigration may lead to job displacement of native workers and that immigrants may be a burden on welfare and public services. If these views are shared by large numbers of the public then (independently of whether they are justified) such concerns may be an important component of aversion towards further immigration. If these considerations contribute towards opinions on migration issues, then policies related to labour market security and welfare spending may have important secondary effects on public opinion about and resistance towards further immigration. By way of contrast, if preferences over further immigration are also rooted in racial or cultural concerns, then they may be less responsive to more economic interventions.

This paper attempts to assess the importance of welfare and labour market concerns, as well as racially or culturally inclined considerations, for the formation of opinions towards further immigration. Our analysis by way of distinguishing responses between different immigrant groups that are heterogeneous in terms of welfare dependence, skill distribution, as well as ethnic distance from the respondent group, gives us an additional variation which helps identify whether respondents consider the suggested channels as relevant. Furthermore, our approach estimates the importance of these three possible channels of attitude formation directly, thus allowing us direct assessment of relative magnitude and importance for each of the different immigrant groups as well as respondent groups. Our results are interesting in several respects. First, we do find strong evidence that welfare concerns are associated with opinion towards further immigration, where associations work largely in a way that would be expected from a model where immigration of individuals with higher welfare dependence is thought to be felt more by the better-off. Thus, our analysis supports our findings elsewhere (Dustmann and Preston, 2005) that suggest welfare concerns are most relevant when individuals assess the overall impact immigration has on the economy. Our results are also compatible with recent work by Hanson, Scheve and Slaughter (2006) and Facchini and Mayda (2006), who likewise establish welfare concern as an important channel in determining preferences over further immigration. Both papers, though using a different approach (by utilising spatial variation in immigrant skill ratios or immigrant dependency ratios), come to similar conclusions as our study, suggesting perceived welfare effects where the better-off carry the burden of increases in dependency ratios arising from immigration.

Our analysis also isolates cultural and racial concerns as an important channel that is associated with opinion towards further immigration. For all skill and education groups, this channel is similar in magnitude, and more

important for immigrant groups that are ethnically more distant from the majority population. Work by Scheve and Slaughter (2001) and Mayda (2005) has established the importance of non-economic factors in attitude formation. The analysis in this paper emphasises these suggestions, and shows a clear association with proposed immigrant origin groups.

A final interesting finding is perhaps that there is no strong evidence that the greater labour market concerns sometimes believed to exist among unskilled and manual workers are reflected in opposition towards further immigration. However, labour market concerns are an important channel for preference towards immigration among the better educated. This may be related to the specific skill composition of immigrants in the UK, where the immigrant population is, if at all much different, better educated than the native white population.

Appendix A Estimation

We estimate the reduced form in a two stage procedure to obtain estimates of Γ and Σ_ϵ. We estimate Γ by a series of independent (ordered) probits. We then estimate the components of Σ_ϵ by pairwise bivariate Maximum Likelihood, conditional upon the estimated probit coefficients. Not all of the questions used are asked in every year of our sample, but there is sufficient overlap to identify all reduced form parameters.

This estimation procedure is similar to that suggested by Muthén (1984) or by Browne and Arminger (1995). Our derivation of the variance-covariance matrix for the estimates draws on the arguments of Muthén and Satorra (1995).

Let $\boldsymbol{\theta}_1$ denote the vector of parameters estimated by independent ordered probits in the first stage (which is to say the vector of the elements of Γ) and let $\boldsymbol{\theta}_2$ denote the vector of parameters estimated by pairwise bivariate likelihood maximisation at the second stage (which is to say the vector of all generically distinct off-diagonal elements of Σ_ϵ). Let $\boldsymbol{\theta} \equiv (\boldsymbol{\theta}_1', , \boldsymbol{\theta}_2')'$ denote the vector of all reduced form parameters.

Let $\mathbf{l}^i(\boldsymbol{\theta})$ denote a vector of the same dimensions as $\boldsymbol{\theta}$, the elements of which are the log likelihood contributions of the ith respondent to estimation of the corresponding elements of $\boldsymbol{\theta}$. Note that different likelihoods are used to estimate parameters at different stages and in different equations. Furthermore let

$$\mathbf{l}^i(\boldsymbol{\theta}) \equiv (l_1^i(\boldsymbol{\theta}_1), \mathbf{l}_2^i(\boldsymbol{\theta}_1, \boldsymbol{\theta}_2)')'$$

define a partition of $\mathbf{l}^i(\boldsymbol{\theta})$ into elements corresponding to first and second stage estimations.

The estimates $\hat{\boldsymbol{\theta}} \equiv (\hat{\boldsymbol{\theta}}_1', \hat{\boldsymbol{\theta}}_2')'$ solve the score equations

$$\begin{aligned} \sum_i \mathbf{q}_1^i(\hat{\boldsymbol{\theta}}_1) &\equiv \sum_i \frac{\partial}{\partial \boldsymbol{\theta}_1} \mathbf{l}_1^i(\hat{\boldsymbol{\theta}}_1) = \mathbf{0} \\ \sum_i \mathbf{q}_2^i(\hat{\boldsymbol{\theta}}_1, \hat{\boldsymbol{\theta}}_2) &\equiv \sum_i \frac{\partial}{\partial \boldsymbol{\theta}_2} \mathbf{l}_2^i(\hat{\boldsymbol{\theta}}_1, \hat{\boldsymbol{\theta}}_2) = \mathbf{0}. \end{aligned}$$

Denote by $\mathbf{q}^i(\hat{\boldsymbol{\theta}}) \equiv (\mathbf{q}_1^i(\hat{\boldsymbol{\theta}}_1)', \mathbf{q}_2^i(\hat{\boldsymbol{\theta}}_1, \hat{\boldsymbol{\theta}}_2)')'$ the vector of stacked score contributions for the ith respondent and by $\mathbf{q}(\hat{\boldsymbol{\theta}}) \equiv \sum_i \mathbf{q}^i(\hat{\boldsymbol{\theta}}) = \mathbf{0}$ the score vector.

By the Mean Value Theorem

$$\mathbf{0} = \mathbf{q}(\hat{\boldsymbol{\theta}}) = \mathbf{q}(\boldsymbol{\theta}) + \mathbf{Q}(\tilde{\boldsymbol{\theta}})(\hat{\boldsymbol{\theta}} - \boldsymbol{\theta})$$

for some $\tilde{\boldsymbol{\theta}}$ between $\hat{\boldsymbol{\theta}}$ and $\boldsymbol{\theta}$, where $\mathbf{Q}(\boldsymbol{\theta}) \equiv \partial \mathbf{q}(\boldsymbol{\theta}) / \partial \boldsymbol{\theta}$. Therefore

$$\sqrt{n}(\hat{\boldsymbol{\theta}} - \boldsymbol{\theta}) = (-\frac{1}{n}\mathbf{Q}(\tilde{\boldsymbol{\theta}}))^{-1} \frac{1}{\sqrt{n}} \mathbf{q}(\boldsymbol{\theta}).$$

Since

$$\frac{1}{\sqrt{n}} \mathbf{q}(\boldsymbol{\theta}) \rightarrow N(\mathbf{0}, \mathbf{V}),$$

where $\mathbf{V} \equiv plim \frac{1}{n} \sum_i \mathbf{q}^i(\boldsymbol{\theta}) \mathbf{q}^i(\boldsymbol{\theta})'$, and $\hat{\boldsymbol{\theta}} \rightarrow \boldsymbol{\theta}$, we have

$$\sqrt{n}(\hat{\boldsymbol{\theta}} - \boldsymbol{\theta}) \rightarrow N(\mathbf{0}, \mathbf{A}^{-1}\mathbf{V}\mathbf{A}'^{-1}),$$

where $\mathbf{A} \equiv \frac{1}{n}\mathbf{Q}(\boldsymbol{\theta})$.

Note that under standard regularity conditions

$$\begin{aligned} \hat{\mathbf{V}} &\equiv \frac{1}{n} \sum_i \mathbf{q}^i(\hat{\boldsymbol{\theta}}) \mathbf{q}^i(\hat{\boldsymbol{\theta}})' \rightarrow \mathbf{V} \\ \hat{\mathbf{A}} &\equiv \frac{1}{n} \sum_i \frac{\partial}{\partial \boldsymbol{\theta}} \mathbf{l}^i(\hat{\boldsymbol{\theta}}) \frac{\partial}{\partial \boldsymbol{\theta}} \mathbf{l}^i(\hat{\boldsymbol{\theta}})' \rightarrow \mathbf{A} \end{aligned}$$

so that we can consistently estimate $\mathbf{V}$ and the block lower triangular matrix $\mathbf{A}$ by taking the outer products of gradients indicated. We can thereby consistently estimate the asymptotic variance-covariance matrix of the estimates by $\hat{\boldsymbol{\Omega}} \equiv \hat{\mathbf{A}}^{-1}\hat{\mathbf{V}}\hat{\mathbf{A}}'^{-1}$.

The estimation procedure outlined above does not, however, guarantee positive semidefiniteness of the estimated asymptotic variance-covariance matrix for the parameter estimates $\hat{\mathbf{\Omega}}$ (see Appendix A for derivation). In practice, we find $\hat{\mathbf{\Omega}}$ to have a few small negative eigenvalues. It can therefore not be used as the weighting matrix. We chose as an alternative weighting matrix the diagonal matrix $\mathrm{dg}(\hat{\mathbf{\Omega}})$ containing the diagonal elements of $\hat{\mathbf{\Omega}}$.[18] Since this is not the optimal weighting matrix the minimised value of the criterion does not give the standard χ^2 test of the restrictions so we use the formula in Newey (1985).[19]

Appendix B First Step Probit Results

Table B1: Sample Sizes by Year

Variables	**83**	**84**	**85**	**86**	**87**	**89**	**90**	**Total**
Less West Indian	1140	1051		757		883	804	4635
Less Asian	1156	1060		756		885	804	4661
Less European	1151	1056		756		883	803	4649
Less Aust, N.Z.	1155	1058		754		882	806	4655
Marriage	1186	1113		833		1015		4147
Boss	1199	1117		850		1022		4188
Prejudice	1218	1118	1185	1615	1945	2085	897	10063
Job Loss	1221	1132	1193	1631		2094	1793	9064
Find Job						652		652
Wage Exp	596	578	600	846	976	1058	918	5572
Job Security						590		590
Benefits	1149	1052	1121	1545	1849	1943	1641	10300
Need					923	1820		2743
More spending					924	1825		2749

[18] Another idea would be to use the positive semi-definite matrix obtained from $\hat{\mathbf{\Omega}}$ by replacing the negative eigenvalues by zeros in the spectral decomposition. We found this to give very unstable results.

[19] Bearing in mind the small-sample concerns raised by Altonji and Segal (1996), we also calculate, for comparison, equally weighted minimum distance estimates using the identity matrix as weighting matrix. These are very similar (see Appendix E).

Table B2: Immigration Probits

Variable	Less West Indian		Less Asian		Less European		Less Aust., N.Z.	
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio
Unemployment Rate	-0.638	-0.47	-1.567	-1.12	0.997	0.77	-0.727	-0.55
Ethnic Minor. Conc.	-0.005	-0.01	0.417	0.50	0.509	0.64	0.805	1.01
Income Rank	0.254	2.48	0.206	1.99	0.038	0.38	0.128	1.29
Manual Worker	0.040	0.67	0.110	1.80	0.119	2.17	0.030	0.53
Ever Unemployed	-0.033	-0.43	0.000	0.00	-0.013	-0.19	0.031	0.44
Ever Long Term Unemp.	0.050	0.39	-0.058	-0.43	0.021	0.18	-0.145	-1.25
Female	-0.008	-0.14	-0.012	-0.23	0.047	0.95	0.015	0.29
Compulsory Education	0.098	1.63	0.167	2.57	0.102	1.81	0.014	0.25
High Education Level	-0.422	-4.85	-0.488	-5.62	-0.328	-3.81	-0.299	-3.27
Age	1.630	2.26	0.893	1.21	3.100	4.66	4.532	6.39
Age^2	-0.724	-0.96	-0.291	-0.39	-2.698	-3.97	-5.135	-7.05
Catholic	-0.179	-2.26	-0.223	-2.58	-0.060	-0.76	-0.076	-0.91
No Religion	0.024	0.43	-0.027	-0.47	0.036	0.71	0.072	1.38
Sample size	4624		4650		4638		4644	

Table B3: Racial Attitude Probits

Variable	Marriage		Boss		Prejudice	
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio
Unemployment Rate	1.885	1.41	-0.153	-0.11	-0.962	-1.16
Ethnic Minor. Conc.	2.835	3.35	-0.081	-0.08	2.236	4.21
Income Rank	0.305	2.75	-0.015	-0.13	0.394	5.48
Manual Worker	0.078	1.44	-0.035	-0.50	-0.090	-2.28
Ever Unemployed	-0.006	-0.08	0.016	0.20	0.083	1.51
Ever Long Term Unemp.	-0.006	-0.05	0.125	0.85	-0.082	-0.94
Female	0.063	1.24	-0.127	-2.15	-0.200	-5.96
Compulsory Education	0.111	1.82	0.151	2.15	0.050	1.19
High Education Level	-0.315	-3.30	-0.155	-1.31	-0.321	-5.10
Age/100	4.073	5.80	-1.790	-2.33	0.550	1.18
$Age^2/10000$	-2.847	-3.99	2.231	2.85	-0.568	-1.20
Catholic	-0.089	-1.11	-0.237	-2.21	-0.323	-5.35
No Religion	-0.083	-1.42	0.051	0.80	0.002	0.06
Sample size	4143		4184		10049	

Table B4: Job Attitudes Probits

Variable	Job Loss		Find Job		Wage		Job Security	
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio
Unemployment Rate	0.096	0.08	14.849	3.91	3.132	3.31	-3.134	-0.77
Ethnic Minor. Conc.	-0.058	-0.08	-2.171	-1.19	-1.788	-3.04	1.152	0.59
Income Rank	-1.601	-15.05	-0.652	-2.95	-0.803	-8.24	-0.654	-2.47
Manual Worker	0.004	0.07	0.165	1.43	0.257	4.79	0.240	1.79
Ever Unemployed	0.021	0.29	0.167	1.02	0.001	0.01	1.055	6.22
Ever Long Term Unemp.	0.042	0.29	0.222	0.83	0.104	1.09	0.570	2.65
Female	0.341	6.39	-0.150	-1.44	0.333	6.57	-0.076	-0.64
Compulsory Education	-0.044	-0.81	-0.080	-0.68	0.086	1.64	0.035	0.26
High Education Level	0.113	1.66	0.059	0.33	0.056	0.87	0.079	0.41
Age/100	-8.733	-8.89	3.618	1.86	1.983	2.60	1.888	0.65
$Age^2/10000$	12.308	10.74	-1.065	-0.50	-1.415	-1.53	-0.585	-0.17
Catholic	-0.044	-0.51	-0.064	-0.37	0.034	0.52	-0.072	-0.38
No Religion	-0.072	-1.36	0.083	0.78	0.038	0.85	0.026	0.20
Sample size	9045		651		5566		589	

Table B5: Welfare Attitude Probits

Variable	Benefits		Need		More Spending	
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio
Unemployment Rate	-7.179	-7.31	-8.330	-6.11	-3.109	-2.19
Ethnic Minor. Conc.	0.866	1.49	1.878	2.22	-1.135	-1.39
Income Rank	0.458	4.98	0.175	1.46	0.618	5.56
Manual Worker	-0.147	-3.26	0.072	1.09	-0.133	-2.25
Ever Unemployed	-0.211	-3.18	-0.057	-0.63	-0.016	-0.17
Ever Long Term Unemp.	-0.188	-1.44	-0.135	-1.11	-0.086	-0.66
Female	0.054	1.11	0.071	1.27	0.085	1.50
Compulsory Education	0.038	0.77	0.247	3.38	0.127	1.75
High Education Level	-0.418	-6.01	-0.389	-3.73	-0.130	-1.42
Age/100	-0.921	-1.80	0.515	0.61	-1.667	-2.03
$Age^2/10000$	2.034	3.95	0.633	0.73	1.170	1.39
Catholic	-0.238	-3.54	-0.087	-1.07	-0.305	-3.51
No Religion	-0.149	-3.33	-0.049	-0.77	-0.119	-1.95
Sample size	10282		2740		2746	

Table B6: Residual Correlation Matrix

Variable	Less West Indian	Less Asian	Less European	Less Aust./N.Z.	Marriage	Boss	Prejudice
Less Asian	0.98	.	.	.	.	.	.
Less European	0.83*	0.80*	.	.	.	.	.
Less Aust./N.Z.	0.82*	0.78*	0.89*	.	.	.	.
Marriage	0.39*	0.45*	0.11*	0.01	.	.	.
Boss	0.41*	0.47*	0.10*	0.00	0.68*	.	.
Prejudice	0.46*	0.53*	0.17*	0.06	0.59*	0.64*	.
Job Loss	0.01	-0.02	0.01	0.03	-0.01	-0.03	-0.01
Find Job	0.06	0.09	0.10	0.04	-0.01	0.07	0.01
Wage Exp	0.01	0.00	0.00	-0.01	-0.01	-0.04	-0.01
Job Security	0.14	0.15*	0.10	0.11	0.01	0.04	0.02
Benefits	0.18*	0.22*	0.08*	0.04	0.13*	0.15*	0.15*
Need	0.23*	0.27*	0.12*	0.04	0.17*	0.22*	0.22*
More Spending	0.14*	0.19*	0.06	0.01	0.15*	0.13*	0.20*

Variable	Job Loss	Find Job	Wage Exp	Job Security	Benefits	Need
Less Asian	.	.	.	.	.	.
Less European	.	.	.	.	.	.
Less Aust./N.Z.	.	.	.	.	.	.
Marriage	.	.	.	.	.	.
Boss	.	.	.	.	.	.
Prejudice	.	.	.	.	.	.
Job Loss	.	.	.	.	.	.
Find Job	0.16*	.	.	.	.	.
Wage Exp	0.06	0.05	.	.	.	.
Job Security	0.43*	0.25*	0.13	.	.	.
Benefits	-0.06	-0.22*	-0.01	-0.20*	.	.
Need	-0.12*	-0.14*	-0.03	-0.12	0.52*	.
More Spending	-0.01	-0.06	-0.09	-0.05	0.37*	0.34*

*: Significant at the 5% level. Entries are elements of the estimated Σ_ϵ matrix. Due to normalisation, these can be interpreted as conditional correlation coefficients after removing the effects of observable characteristics of individuals.

Appendix C Minimum Distance Estimates of M and Σ

Table C1: MD Estimates of M and Σ_v, All Respondents

M

Variable	Jobs		Welfare		Race		diag(Σ_w)
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio	Coeff
Job Loss	0.475	5.57	–	–	–	–	0.774
Find Job	0.383	4.74	–	–	–	–	0.853
Wage	0.138	1.91	–	–	–	–	0.981
Job security	0.771	6.26	–	–	–	–	0.405
Benefits	–	–	0.674	14.27	–	–	0.546
Need	–	–	0.727	15.31	–	–	0.472
More Spending	–	–	0.495	12.36	–	–	0.755
Marriage	–	–	–	–	0.762	17.39	0.420
Boss	–	–	–	–	0.843	15.13	0.290
Prejudice	–	–	–	–	0.783	17.91	0.387

Σ_v

Variable	Jobs		Welfare		Race	
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio
Jobs	1.000	-	-0.284	-3.85	-0.003	-0.04
Welfare	-0.284	-3.85	1.000	-	0.321	6.74
Race	-0.003	-0.04	0.321	6.74	1.000	-

Restrictions imposed: $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$
$\chi^2_{32} = 39.713$ P-value $= 0.164$

The figures in the last column of the uppermost table, headed diag(Σ_w), indicate the proportion of the residual variance for the response in the question which is not attributable to the relevant factor.

Appendix D Wording of the Questions

Table D1: Immigration Questions

Response	West Indians	Indians and Pakistanis	Common Market Countries (Europe)	Australians and New Zealanders
more settlement,				
about the same	34.79	31.06	55.29	68.01
less settlement	65.21	68.94	44.71	31.99
	100.00	100.00	100.00	100.00

Wording of Question: Britain controls the number of people from abroad that are allowed to settle in this country. Please say for each of the groups below whether you think Britain should allow more settlement, less settlement, or about the same as now.

Table D2: Racial Acceptability Questions		
Response	Opposition to Marriage	Opposition to Boss
Not mind	48.09	81.11
Mind	51.91	18.89
	100.00	100.00

Wording of Question: Opposition to Marriage: Do you think most people in Britain would mind (or not mind) if one of their close relatives were to marry a person of Asian / West Indian origin? ... and you personally? Would you mind or not mind?
Opposition to Boss: Do you think most people in Britain would mind (or not mind) if a suitably qualified person of Asian / West Indian origin were appointed as their boss? ... and you personally? Would you mind or not mind?

Table D3: Racial Prejudice	
Response	
Not prejudiced at all	63.73
Very or a little prejudiced	36.27
	100.00

Wording of Question: How would you describe yourself? As very prejudiced against people of other races, a little prejudiced, or not prejudiced at all?

Table D4: Fear of Job Loss	
unlikely	94.29
likely	5.71
	100.00

Wording of Question: If employed: Thinking now about your own job, how likely (or unlikely) is it that you will leave this employer over the next year for any reason? ... Why do you think you will leave?
People recorded as likely are those who answered *very likely* or *quite likely* to the first question and gave as reason *firm will close down*, *I will be declared redundant*, or *my contract of employment will expire*.

Table D5: Ease of Finding Job	
very easy	6.90
fairly easy	29.04
neither	16.07
fairly difficult	27.60
very difficult	20.39
	100.00

Wording of Question: If in paid job for 10 or more hours a week: If you lost your job for any reason, and were looking actively for another one, how easy, or difficult, do you think it would be for you to find an acceptable job? If in paid job for less than 10 hours a week or no paid job: If you were looking actively, how easy, or difficult, do you think it would be for you to find an acceptable job?

Table D6: Wage Expectations	
rise by more than cost of living	16.86
rise by same as cost of living	48.15
rise by less than cost of living	26.60
not rise at all	8.39
	100.00

Wording of Question: If employee: If you stay in this job, would you expect your wages or salary over the coming year to ...

Table D7: Job Security	
strongly agree	18.37
agree	42.18
neither	18.66
disagree	16.13
strongly disagree	4.66
	100.00

Wording of Question: If in paid work for 10 or more hours a week, please tick one box to show how much you agree or disagree that [this statement] applies to your job: My job is secure.

Table D8: Level of Benefits	
too low or neither	65.97
too high	34.03
	100.00

Wording of Question: Opinions differ about the level of benefits for the unemployed. Which of these ... statements comes closest to your own: *Benefits for the unemployed are too low and cause hardship* or *Benefits for the unemployed are too high and discourage people from finding jobs.*
In later years, people are allowed to agree to both - in all years we categorise according to whether people accept only the second statement.

Table D9: Attitudes to Welfare		
Responses	Need	More spending
strongly agree	9.93	16.76
agree	35.52	42.93
neither	25.95	23.00
disagree	22.67	15.58
strongly disagree	5.93	1.73
	100.00	100.00

Wording of Question: Please tick one box for each statement below to show how much you agree or disagree with it.
Need: *Many people who get social security do not really deserve any help.*
More Spending: *The government should spend more money on welfare benefits for the poor, even if it leads to higher taxes.*
We reverse the answers to the first statement.

Appendix E Equally Weighted MDE

Table 8: MDE Estimates of Λ, All Respondents

Variable	Race		Jobs		Welfare		diag$(\Sigma_u)^*$
	Coeff	t-ratio	Coeff	t-ratio	Coeff	t-ratio	Coeff
West Indian	0.459	10.55	0.181	2.25	0.191	2.76	0.680
Asian	0.523	10.51	0.201	2.42	0.239	3.12	0.571
European	0.106	2.71	0.153	1.90	0.147	2.17	0.946
Aust.,N.Z	-0.003	-0.08	0.133	1.66	0.092	1.36	0.981
Test$_1$ $\chi^2_{32} = 40.109$ P-value $= 0.154$							
Test$_2$ $\chi^2_{60} = 62.348$ P-value $= 0.393$							

Restrictions imposed: $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$, $\Sigma_{12} = \Lambda\,\Sigma_v\,M\prime$

Test$_1$ is a test of $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$

Test$_2$ is a joint test of $\Sigma_{22} = \Sigma_w + M\,\Sigma_v\,M'$ and $\Sigma_{12} = \Lambda\,\Sigma_v\,M'$

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