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# The determinants of individual attitudes towards immigration

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## Abstract

The paper formulates hypotheses and reports on individual attitudes towards immigration based on data for 24 countries on socioeconomic position, sociodemographic characteristics and political attitudes. The results are consistent with the predictions of factor proportions trade theory, but also suggest that a range of other economic and cultural factors influence attitudes towards immigration.

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## 1. Introduction

Economic theory suggests substantial welfare gains from free migration: according to one general equilibrium estimate, freeing up world migration could double world income (Hamilton and Whalley, 1984), a gain that substantially outweighs the much-heralded estimated benefits of liberalization of world trade.<sup>1</sup> Despite the welfare arguments in favour of

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<sup>1</sup> The logic is straightforward: transfer a worker from a low-wage (i.e. low marginal productivity) economy to a high-wage (high marginal productivity) economy, and the world gains the difference between the wages in the two regions. Host countries gain as well as the world as a whole, although the estimated net welfare benefits derived from partial equilibrium models are typically quite small (Borjas, 1995), and the result is theoretically ambiguous (see for example Trefler, 1997 or Davis and Weinstein, 2002). A recent back-of-the-envelope calculation shows annual gains of \$300 billion to developing countries from freeing the movement of 'natural persons': see McCulloch et al. (2001, p. 242).

migration, however, governments tend to restrict immigration in practice. In 2001, 21 out of 48 developed country governments had policies designed to reduce immigration, while only 2 had policies designed to increase immigration (UN, 2002, Table 3, p. 18). In democracies, policies presumably to a large extent reflect the individual preferences of voters. Reasons why voters might not want immigration can be classified into non-economic and economic. The non-economic reasons include racism, xenophobia and milder forms of nationalist sentiment such as social norms or cultural preferences. The economic reasons reflect voters' economic interests. This paper empirically explores both determinants of preferences with regard to immigration.

In a paper examining the growing restrictiveness of late 19th century immigration policy, Timmer and Williamson (1998) argued that economic factors were sufficient to explain the anti-immigration backlash that occurred in the major host countries of the New World at that time. This backlash was manifested in such legislation as head taxes, Chinese exclusion acts, the definition of various categories of persons as 'excludable' and so on. Timmer and Williamson constructed an index of immigration barriers in the US, Canada, Argentina, Australia and Brazil from 1850 to 1930, based on a careful reading of each country's immigration legislation. They then regressed this policy measure on a number of explanatory variables and found that, once economic variables had been controlled for, in particular inequality, there was no independent role for xenophobia of the sort frequently stressed by qualitative histories of the period.

Does this conclusion still hold? In this paper, we do not look at the determinants of government policies, as do Timmer and Williamson. In order to think systematically about what determines policies, we could appeal to a political economy model.<sup>2</sup> An alternative is to look at the determinants of individual voters' attitudes towards immigration, which we do using cross-country survey data. We consider differences in attitudes between skilled and unskilled voters.<sup>3</sup> In a sense, we are testing one of the key assumptions underlying many political economy models, namely that individuals' attitudes towards globalization vary systematically with their endowments. In so doing, we follow Scheve and Slaughter (2001), who used survey data to consider the question of who is in favour of immigration and why. However, Scheve and Slaughter looked at survey data for just one country, the US. As will be emphasized later, cross-country data are required to properly test hypotheses regarding the determinants of attitudes towards immigration.

Our paper is closest in spirit to previous work that we, and also Mayda and Rodrik, have done on the determinants of individual attitudes towards trade (Mayda and Rodrik, 2005; O'Rourke and Sinnott, 2001). The independent work of Mayda (2005) raises many (but not all) of the issues addressed in this paper, and indeed uses the same data set. Since Mayda's study differs from ours in various respects, her results serve as a robustness check on several of our key conclusions and we consider her conclusions in more detail later on.

The plan of the paper is as follows. Section 2 first reviews what standard trade theory has to say about the determinants of attitudes towards immigration, before introducing a range of other

<sup>2</sup> For political economy models of trade policy, see Hillman (1982), Findlay and Wellisz (1982), Mayer (1984), and Grossman and Helpman (1994).

<sup>3</sup> A rationale for focussing on human capital differences between individuals, rather than differences in their capital endowments, is provided by Feeney and Hillman (2004): while asset markets can help individuals diversify their patterns of factor ownership, making them more similar in their endowments and thus in their attitudes towards trade, immigration and other such issues, such markets do not permit individuals to buy and sell shares in their (or others') human capital income.

relevant influences that go beyond the admittedly narrow confines of such models. Section 3 introduces the survey data set that we use, and indicates how the data are applied to test the hypotheses. Section 4 reports the results of ordered probit regressions, asking what are the determinants of individual attitudes towards immigration. We also report a number of bivariate probit regressions, which allow us to simultaneously explore the determinants of attitudes towards trade, immigration and refugees. We find that allowing for the fact that these attitudes are all inter-related can be important for the results obtained. Section 5 compares our results with those of [Mayda \(2005\)](#). Section 6 concludes.

## 2. Theory

### 2.1. Trade theory

Empirically, it is the case that labour demand curves slope downwards and that immigration lowers wages ([Borjas, 2003](#); [Hatton and Williamson, in press](#)): this is the basic fact that leads people to oppose immigration on economic grounds. Whose wages are lowered, however, depends on the composition of immigration: we expect low- and high-skilled immigration to be opposed by the equivalent skill class.

What determines whether it is the high-skilled or the low-skilled who are more opposed to immigration? In order to answer this question, we need to begin with a theoretical framework where immigration affects factor prices, as in the Heckscher-Ohlin family of factor proportions models of trade.<sup>4</sup> For example, consider a model in which three factors (capital, skilled labour and unskilled labour) produce two commodities and in which all three factors are mobile across sectors. Assume that capital and skilled labour are the 'extreme' factors, and that unskilled labour is the 'middle factor' ([Ruffin, 1981](#); [Thompson and Clark, 1983](#); [Davies and Wooton, 1992](#)).<sup>5</sup> Take two countries that are initially identical, and increase the endowment of skilled labour in one country. This will raise unskilled wages and lower skilled wages in that country. Lower the endowment of unskilled labour in the same country, and the result will again be to raise unskilled wages and lower skilled wages. Thus, if we consider two countries identical in all respects but one, namely the proportion of the total workforce that is skilled, then in the country with the more skilled workforce, skilled wages will be lower and unskilled wages will be higher. Skilled workers will migrate from skill-abundant (which we denote as rich) to unskilled-labour-abundant (which we denote as poor) countries, and unskilled workers will migrate from poor to rich countries. Immigration will hurt skilled workers in poor countries, but benefit the unskilled there; in rich countries, immigration will hurt the unskilled, but benefit skilled workers. Thus, the prediction is that

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<sup>4</sup> In factor proportions models, factor movements can leave factor prices unchanged (the Rybcynski theorem). In particular, in constant returns models in which the number of traded goods is equal to or greater than the number of factors of production, and the country is too small to affect world traded goods prices, factor prices will be completely determined by world prices and technological conditions: what [Leamer \(1995\)](#) refers to as the factor price insensitivity theorem applies and immigration will leave domestic factor prices unchanged, so long as the immigration is not so large as to induce the country to start producing a different set of goods. If, on the other hand, immigration is sufficiently large, the goods produced by the economy will change and so will domestic factor prices, even in this case. For a classic account of the implications of dimensionality in traditional trade theory, see [Ethier \(1984\)](#).

<sup>5</sup> Nothing changes if we assume that skilled labour is the middle factor; on the other hand, if capital is the middle factor, then any immigration hurts both kinds of labour.



the impact of skills on anti-immigrant sentiment should be related to a country's GDP per capita.<sup>6</sup> In the richest countries, being high-skilled should have a negative impact on anti-immigrant sentiment. In the poorest countries, being high-skilled should have a positive impact on anti-immigrant sentiment. An interaction term between skills and GDP per capita should therefore enter with a negative sign in a regression explaining anti-immigrant sentiment.

In a factor proportions trade model, it is also possible to predict through the Stolper-Samuelson Theorem who will favour free trade, and who will favour protection.<sup>7</sup> When countries are distinguished solely by their relative factor endowments, agents are consistent in their attitudes towards globalization. That is, in rich countries skilled workers favour both liberal trade and liberal immigration, while unskilled workers are protectionist and anti-immigration. In poor countries, it is the unskilled who are liberal in their attitudes towards both trade and immigration, while the skilled favour both protection and immigration restrictions. We thus predict that *ceteris paribus* being protectionist should increase the likelihood that an individual is anti-immigrant, while *ceteris paribus* being anti-immigrant should increase the likelihood that an individual is protectionist.<sup>8</sup>

Matters are more complicated if technology or capital endowments differ across countries: it is then possible that rich countries, with superior technology and/or capital/labour ratios, will see inflows of skilled as well as unskilled labour, despite being relatively skill-abundant. Indeed, this is what we observe. In such circumstances, can we still say anything about whether a country will experience inflows of predominantly skilled or unskilled labour? Presumably, the composition of inflows will depend largely on the ratio of skilled to unskilled wages; the higher this ratio, the higher the proportion of skilled immigrants, other things being equal.<sup>9</sup> If skill differentials and inequality more generally are positively correlated, it follows that the impact of skills on anti-immigrant sentiment should be related to a country's level of

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<sup>6</sup> The implicit assumption here is that GDP per capita is positively correlated with countries' human capital endowments. Alternatively, we could have used the Barro and Lee (2000) data set on schooling; however, for the sample of countries used here (see Section 3), this would be inappropriate. The Barro-Lee figures for schooling in several transition countries are very high: for example, average schooling according to these data is higher in Slovakia, Bulgaria, Latvia and Poland than in the Netherlands, Ireland and Austria. We doubt whether these figures provide a genuine reflection of the economically relevant human capital endowments of these economies and prefer to use GDP per capita as a proxy for skill abundance.

<sup>7</sup> This is easy to do in a  $2 \times 2$  model; in the 3 factor 2 good models considered here, commodity price changes can have counter-intuitive effects on factor prices (Thompson, 1985, 1986) and whether the 'normal' Stolper-Samuelson results go through becomes an empirical issue.

<sup>8</sup> The prediction is *not* that one variable causes the other, since both are endogenous, but that controlling for other factors, the two variables are positively correlated with each other. The bivariate probit regression framework used below can explicitly test this hypothesis. Note that this symmetry in attitudes towards globalization arises because in the Heckscher-Ohlin model trade and factor flows have symmetrical effects on factor returns. This in turn implies that trade and factor flows are substitutes: for example, trade liberalisation will lessen the incentives for international migration. However, as Venables (1999) shows, trade and factor flows can be complements rather than substitutes once one moves away from the narrow confines of the Heckscher-Ohlin model. Moreover, as we will see in Section 2.2, the movement of people is fundamentally different in nature from the movement of commodities or capital, and the political economy of immigration policy thus involves more than just calculations about factor returns.

<sup>9</sup> In part, this skill differential will depend on factor proportions; *ceteris paribus*, it remains true that in more skill-abundant countries, skill differentials should be lower, and the proportion of skilled immigrants lower as well. *Ceteris paribus*, we therefore expect that our first prediction will continue to hold when confronted with real world data.

inequality.<sup>10</sup> In the most income-unequal countries, being high-skilled should have a positive impact on anti-immigrant sentiment. In the most income-equal countries, being high-skilled should have a negative impact on anti-immigrant sentiment. An interaction term between skills and inequality should therefore enter with a positive sign in a regression explaining anti-immigrant sentiment.<sup>11</sup>

## 2.2. *Beyond trade theory: further economic considerations*

The sorts of trade models considered above are extremely restrictive in their assumptions. All people in the models are workers; there are no children, pensioners or other people outside the labour force, and neither is there unemployment by assumption. The models are static, so there are no life-cycle issues; nor do the models allow for externalities, public goods, cultural preferences, taxes, welfare benefits or other complications that almost certainly influence peoples' attitudes about immigration (Hillman and Weiss, 1999). We now consider some of these complications and indicate how they relate to the empirical analysis that follows.

An important economic issue facing western societies is the difficulty of funding public pensions systems in the context of aging populations. A frequently suggested solution to the problem of rising dependency burdens is immigration: for example, Storesletten (2000) shows that the fiscal problems associated with the aging of the baby boomer generation in the United States could be solved through the immigration of working age high- and medium-skill foreigners. Immigrants into western societies however often tend to be young but unskilled and can end up as the recipients of welfare payments, thus potentially exacerbating rather than remedying their hosts' fiscal problems. In the US, immigrants aged between 20 and 30, and with less than high school education, have been associated with a net fiscal burden of \$100,000 in present value, while an immigrant family with three children arriving in Germany in 1997 and staying for 10 years received a net benefit of €120,000 (Razin and Sadka, 2004, pp. 3–4). Nannestad (2004) notes the fiscal burden of immigrants in the Danish case. The political economy implications of the interaction between immigration and the modern welfare state are important for our study. The possibilities depend on whether the pension scheme is one of defined benefits or defined contributions, and whether the scheme follows Beveridgean or Bismarkian principles (Scholten and Thum, 1996; Haupt and Peters, 1998; Krieger, 2003). Anti-immigrant sentiment can therefore in principle be positively or negatively correlated with

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<sup>10</sup> Another complementary way to motivate this hypothesis is provided by Borjas (1987), who adapts Roy's (1951) model of occupational self-selection to the issue of migration. The conclusion of the analysis is that there will be positive self-selection of migrants if (a) the correlation between the earnings which they receive in the home and destination countries is sufficiently high; and (b) if income is more dispersed in the destination country than in the home country. On the other hand, there will be negative self-selection if (a) the correlation between the earnings which they receive in the home and destination countries is sufficiently high; and (b) if income is less dispersed in the destination country than in the home country. The theory thus predicts that immigrants into more unequal countries should be higher-skilled than immigrants into more equal countries: it follows that the high-skilled should be less favorably disposed towards immigrants in more unequal countries than in more equal countries, *ceteris paribus*.

<sup>11</sup> We do not view this prediction as constituting an alternative to the Heckscher-Ohlin predictions outlined above: it is complementary, in the sense that all these hypotheses assume that the composition of immigration flows will depend on factor returns. If only skill endowments differed between countries, and if skill endowments were sufficiently strongly correlated with GDP per capita, then we would expect that our first prediction would hold strongly in the data, leaving very little variation to explain. Because countries differ along many dimensions other than their skill endowments, we expect to find support for both predictions.

age.<sup>12</sup> In principle, we could discriminate between the alternative possibilities by regressing our measure of anti-immigrant sentiment on age, and indeed this is what we do later in the paper. However, such an exercise has to take account of the fact that these two alternative possibilities are purely *ceteris paribus* predictions. Hillman (2002) for example provides a model in which intergenerational transfer issues are just one influence on voters' preferences regarding immigration, and natives' utility can be affected by a sense of diminished identity or a sense that the population's social norms are being replaced by other norms. If older people place a higher value on traditional social norms than the young, this might lead them to be more anti-immigrant than the young, even if (as in Hillman's model) they stand to gain financially from immigration. We attempt to deal with this by introducing separate explanatory variables measuring nationalist attitudes (see below), but, unless these completely control for all cultural factors influencing attitudes, the coefficient on age in our regression will be a reduced form coefficient picking up both inter-generational conflicts regarding pension and welfare systems and age-specific differences in cultural attitudes, and has to be interpreted with this in mind.

A key economic variable missing from the analysis up to now is unemployment, and we include in our empirical analysis a variable indicating whether the respondent is unemployed or not. One might think that the unemployed would be more anti-immigrant than the employed, for example because they view labour market competition from immigrants as the reason for their being unemployed or because immigrants provide an additional drain on the welfare system that may eventually leave them less well off.<sup>13</sup> Yet fear of unemployment might lead those with jobs to be just as hostile to immigration as those already out of work, in which case one would not see the unemployed being more anti-immigrant.

The Heckscher-Ohlin model assumes that all factors of production are perfectly mobile across sectors. This assumption clearly does not correspond with reality, especially insofar as workers are concerned. We therefore include a 'national mobility' variable in our analysis, since, arguably, those willing to relocate within the country should be more sanguine about the dislocation implied by immigration than those who are immobile. This will be particularly true if immigrants tend to concentrate in particular regions or cities. The prediction is that those who self-identify as being willing to move elsewhere within the country should be less anti-immigrant than those who view themselves as being tied to a particular industry or location.

### 2.3. *Beyond economics: cultural considerations*

Hillman and Weiss (1999) point out that immigration policies may reflect cultural preferences, 'and perhaps likes and dislikes that are contained in the collective memories of different peoples' (p. 76). There are different ways in which such 'non-economic' factors can matter. First, natives may harbour an irrational hatred for foreigners. Second, natives may derive

<sup>12</sup> Haupt and Peters (1998) confirm that the association between age and anti-immigrant preferences does indeed depend critically on whether the system keeps the replacement rate constant or contributions constant. The situation becomes even more complicated when account is taken of the fact that immigrants have children, who will themselves become workers, taxpayers, welfare recipients and pensioners. Razin and Sadka (1999) show that, in such a case, all natives may benefit from immigration (assuming that wages are pinned down by free capital mobility), even when immigrants are net recipients of welfare benefits, but this result breaks down when wages are allowed to fluctuate, or when immigrants' children differ in their characteristics from native children (Krieger, 2004), which does indeed appear to be the case in at least some countries (Nannestad, 2004).

<sup>13</sup> See Hillman (2002, p. 221).

utility from living in a society with a well-defined sense of national identity and well-understood and accepted social norms; in this case, natives may oppose 'excessive' immigration on the grounds that it undermines these norms, without disliking foreigners per se. Alternatively, others may approve of immigration on the grounds that it provides diversity through for example ethnic restaurants. As mentioned earlier, it is possible to introduce such preferences into formal economic analyses of immigration policy.<sup>14</sup>

In this paper, we take seriously the potential roles of such non-economic factors in determining attitudes towards immigration. In particular, we explore the possibility that anti-immigrant preferences may in part be a function of strong feelings of national identity and an associated set of patriotic and nationalist attitudes that include pride in country, sense of national superiority and, at the extreme, antagonistic attitudes towards those who are not part of the nation. Of course, nationalist ideology may have its origins in a conjuncture between identity and group interests, and particularly in a conjuncture between identity and perceptions of inequality (Gellner, 1983); the point here, however, is that, whatever their origins, nationalist attitudes are likely to have a certain autonomy and may exercise an independent influence on the way in which individuals react to immigration and to other globalization issues. Our prediction is that nationalism will be positively correlated with anti-immigrant sentiment, other things being equal.

Similarly, we predict that those who have lived abroad in the past (including those who were born abroad), and thus have had greater exposure to other cultures, would be less hostile towards immigration, and that those who had a foreign parent or parents would similarly be less anti-immigrant than those with two native parents. In terms of the previous discussion, it is more likely that such individuals view diversity as a good, rather than as a 'bad'. We include a variable indicating whether the respondent is Roman Catholic or not, on the grounds that previous research has found that religious beliefs can play an important role in determining individuals' attitudes towards globalization (von der Ruhr and Daniels, 2003). In previous work, we found that Catholicism was positively correlated with protectionist sentiment regarding trade policy (O'Rourke and Sinnott, 2001); here, we explore if this anti-market sentiment applies to international factor markets as well as to international commodity markets.

Finally, we ask whether women differ systematically in their attitudes to men. Previous research has found that women tend to be less pro-market in their attitudes than are men and this might lead them to oppose immigration (ibid.).

### 3. Data<sup>15</sup>

To accomplish our objectives, we need a data set that provides information on individuals' attitudes towards immigration, socioeconomic position, sociodemographic characteristics and political attitudes. Since trade theory predicts that skill levels will have different implications for immigration policy preferences in different countries, the data should be cross-national in scope.

What we have are data provided by the 1995 International Social Survey Programme (ISSP) module on national identity. The ISSP national identity survey was conducted in 24 countries in

<sup>14</sup> See for example Hillman (2002) or Schiff (2002).

<sup>15</sup> This section largely draws on O'Rourke and Sinnott (2001).



Table 1  
Average sentiment regarding immigrants and refugees

Country	Anti-immigrant		Anti-refugee		
	Mean	S.D.	Mean	Rank	S.D.
Hungary	4.402	0.817	2.838	8	1.077
E. Germany	4.338	0.871	1.961	24	0.879
W. Germany	4.226	0.910	2.049	23	1.022
Bulgaria	4.219	0.990	2.661	13	1.379
Latvia	4.182	0.884	3.757	1	1.312
Czech Rep.	4.158	0.880	2.463	15	1.143
Italy	4.151	0.900	2.846	7	1.269
Britain	4.052	0.962	2.820	9	1.100
Slovakia	4.004	0.911	3.021	4	1.258
Sweden	3.961	1.017	2.275	20	1.074
Slovenia	3.939	0.868	3.565	3	1.103
Poland	3.888	1.060	2.535	14	1.144
USA	3.873	1.044	2.748	11	1.098
Norway	3.847	0.982	2.340	19	0.990
Netherlands	3.826	0.924	2.366	18	1.044
Austria	3.804	0.933	2.095	22	1.111
Philippines	3.796	1.102	3.708	2	1.000
Australia	3.768	1.042	2.954	6	1.202
New Zealand	3.742	1.053	2.807	10	1.075
Russia	3.717	0.971	2.698	12	1.242
Spain	3.401	0.813	2.460	16	1.036
Japan	3.391	1.008	3.014	5	1.296
Canada	3.317	1.135	2.404	17	1.129
Ireland	3.071	0.829	2.163	21	0.911

Source: Data from ISSP National Identity Survey 1995.

1995–1996. The countries were: Australia, West Germany, East Germany, Great Britain, the USA, Austria, Hungary, Italy, Ireland, the Netherlands, Norway, Sweden, the Czech Republic, Slovenia, Poland, Bulgaria, Russia, New Zealand, Canada, the Philippines, Japan, Spain, Latvia and Slovakia.<sup>16</sup>

The ISSP survey asked respondents two questions that bear on their attitude towards immigration. The first asked if the number of immigrants to their economy should be increased a lot (1), a little (2), remain the same (3), be reduced a little (4) or reduced a lot (5). The second asked if refugees should be allowed to stay in the country; responses ran from agree strongly (1) to disagree strongly (5). Table 1 reports the mean response to these questions in each country, where countries are ordered according to the mean value of their response to the question on immigration. A separate column reports the ranking of countries according to their mean response to the question on refugees. Scores greater than 3 indicate that on average respondents were leaning towards greater restriction. As can be seen, individuals tended to be more strongly opposed to immigration in general than to refugees, suggesting that the interviewees were making a distinction between forced migration due to political repression and migration more generally. Sample respondents in every country on average favoured lowering the number of immigrants; by contrast, the mean response to the refugee question only exceeded 3 in five countries (Slovenia, the Philippines, Japan, Latvia and Slovakia). What is interesting here is that,

<sup>16</sup> Full details on the ISSP consortium, including details on participating institutions, procedures, availability of data sets and technical reports, can be obtained at <http://www.issp.org/>.

in most countries, asylum seekers (i.e. persons who are seeking but who have not been granted refugee status, but who are typically confused with 'refugees' in everyday discourse) are prohibited from working, and are thus a drain on the welfare system; and yet respondents are more favourably disposed towards 'refugees' than towards immigrants in general. This is a first indication, in our view, that non-economic factors might be important in determining attitudes towards immigration.

The data set also provides individual-level measures of a range of demographic, socioeconomic and political variables. Among the socioeconomic variables, the most valuable from the point of view of testing the implications of the trade theories we surveyed earlier is the respondent's skill level. This is arrived at by coding the answers to questions on respondents' occupation using the International Labour Organisation's ISCO88 (International Standard Classification of Occupations) coding scheme. ISCO88 is a radical revision of the ILO's previous occupational coding scheme (ISCO68). The main thrust of the revision makes ISCO88 particularly relevant for our purposes. As Ganzeboom and Treiman put it, '...the logic of the classification is mostly derived from skill requirements at the expense of industry distinctions' and the overall effort may 'be seen as an attempt to introduce more clear-cut skill distinctions into ISCO88' (Ganzeboom and Treiman, 1996, p. 206). While a complex coding scheme of this sort allows for very fine distinctions between different occupations, we are interested in the four main skill categories provided by ISCO88. In brief, these are: (1) 'elementary occupations' (i.e. 'manual labour and simple and routine tasks, involving...with few exceptions, only limited personal initiative' (ILO, 1990, p.7)); (2) 'plant and machine operators and assemblers; craft and related trades workers; skilled agricultural and fishery workers; service workers and shop and market sales workers; clerks'; (3) 'technicians and associate professionals'; and (4) 'professionals'. A fifth group, 'legislators, senior officials and managers', do not have a skill coding under this four-step skill classification and were included as a separate, fifth, skill category. Finally, we excluded members of the armed forces, since it was unclear what their skill levels were.

Unfortunately, application of the ISCO coding schemes in the 1995 ISSP was somewhat uneven: the survey coded occupation in three different ways, depending on the country in question. The ISCO88 coding scheme was used in 12 cases, the earlier ISCO68 scheme was used in 6 cases and a further 6 countries used a variety of national coding schemes. However, we were able to construct an approximation to the ISCO88 skill classification either by recoding the ISCO68 data or in three cases (Britain, the Netherlands and the Philippines) by recoding the country-specific occupational codes. This provided us with skill data for 21 of our 24 countries.<sup>17</sup>

In order to test the predictions regarding inter-generational transfers outlined in Section 2.2 we include age and age squared in all regressions. We know whether the respondent is unemployed or not and include this in the analysis. We also make use of a subjective economic variable, namely the stated willingness of people to move from one location to another in order to improve their standard of living or their work environment. Respondents were asked: "If you could improve your work or living conditions, how willing or unwilling would you be to move to another neighbourhood or village; another town or city within this county or region; another county or region; outside [named country]; outside [named continent]?" Based on the responses to these questions, we derived two binary variables, indicating whether or not individuals were nationally mobile, and internationally mobile.<sup>18</sup> As mentioned earlier, we expect that

<sup>17</sup> The three countries omitted when estimating models involving skill are Italy, Japan and Sweden.

<sup>18</sup> Details available on request.

Table 2  
Principal component analysis of nationalist items in ISSP National Identity Survey 1995

	Factor 1	Factor 2
[COUNTRY] better country than most other countries	0.86	0.02
World better place if people from other countries more like the [NATIONALITY]	0.78	0.2
Rather be citizen of [COUNTRY] than of any other country in world	0.61	0.29
Impossible for people who do not share [NATNL.] traditions to be fully [NATNL.]	−0.01	0.71
People should support their country even if country is wrong	0.20	0.63
Importance of having been born in [COUNTRY] to be fully [NATIONALITY]	0.16	0.63
[COUNTRY] should follow own interests, even if conflicts with other nations	0.23	0.55
Percent variance	26.34	24.50

Extraction method: principal component analysis. Rotation method: Varimax with Kaiser normalization.

Source: O'Rourke and Sinnott (2001). Data from ISSP National Identity Survey 1995.

respondents viewing themselves as nationally mobile will be less hostile to immigration than those who are mobile.

The ISSP national identity data set includes a wide range of indicators of nationalist attitudes. Rather than focussing on just one or two of these as indicators of what is, after all, a complex phenomenon, the approach taken here is to seek to identify an underlying dimension (or dimensions) of nationalism that would be measured by a subset (or subsets) of the items. We focus on the following seven questions (versions implemented in Ireland, other country/nationality labels substituted as appropriate):

- “Generally speaking, Ireland is a better country than most other countries”
- “The world would be a better place if people from other countries were more like the Irish”
- “I would rather be a citizen of Ireland than of any other country in the world”
- “It is impossible for people who do not share Irish customs and traditions to become fully Irish”
- “People should support their country even if the country is in the wrong”
- “Ireland should follow its own interests, even if this leads to conflicts with other nations”
- “How important do you think each of the following is for being truly Irish?... .. “to have been born in Ireland”.

In each case, respondents were asked to rank their responses along a scale, in the case of the first six items, from 1 (strongly disagree) to 5 (strongly agree) and, in the case of the seventh item, from 1 (very important) to 4 (not at all important). The seventh item was reordered to make it consistent with the other six. Principal components analysis of these responses yielded two underlying dimensions of nationalist attitudes. As can be seen from the rotated factor loadings in Table 2, the first dimension is a straightforward preference for and sense of the superiority of one's own country (here labelled patriotism). The second dimension identifies a narrow or exclusive sense of nationality combined with a degree of chauvinism of the “my country right or wrong” variety (here labelled chauvinism). On this basis, patriotism and chauvinism scores have been calculated by averaging responses across the relevant subsets of items identified in the analysis.<sup>19</sup>

<sup>19</sup> The Cronbach's  $\alpha$  reliability coefficient for the three-item patriotism scale is 0.68 and the item-total correlations vary from 0.41 to 0.57. The four-item ethnic chauvinism scale is somewhat less satisfactory in this regard: an  $\alpha$  of 0.53 and inter-item correlations ranging from 0.31 to 0.36.

In addition, we include the international mobility variable described above, since being willing to live overseas may signal an openness to other cultures, and hence a greater tolerance for immigrants. By the same token, we also make use of a question, which asks whether the respondent had ever lived abroad, on the basis that previous experience of living abroad may provide a signal regarding familiarity with foreigners. We also have information on whether respondents or their parents are native born or not (if so, we expect them to be more anti-immigrant); on whether they are Roman Catholic or not; and on their gender.

#### 4. Results

Table 3 presents the results of a series of regressions explaining 'anti-immigrant', which is an ordered variable running from 1 (least anti-immigrant) to 5 (most anti-immigrant).<sup>20</sup> Because of the strong likelihood that there are country-specific factors that influence respondents' attitudes towards immigration, country dummies are included in all the regressions reported in this paper (although the coefficients are not reported in the tables because of lack of space).

The first equation tests the trade theoretic predictions outlined in Section 2.1, and the Heckscher-Ohlin factor proportions approach passes the test with flying colours. The coefficient on high skills is large, negative and statistically significant, indicating that the high-skilled are less anti-immigrant than the low-skilled, *ceteris paribus*. This result, which is consistent with that of Scheve and Slaughter (2001) for the US, holds good for all remaining specifications. However, as stressed earlier, the test of factor proportions theory lies in the signs of the interaction terms between Skill345, on the one hand, and GDP per capita and the Gini coefficient on the other. As predicted, the former interaction term is negative and statistically significant, while the coefficient on the latter is positive and statistically significant.<sup>21</sup>

How strong are these effects? Taking the specification in Eq. (3), and setting all the explanatory variables equal to their median values, yields an expected probability of the most anti-immigrant response of 48.5%. Assuming that the Gini coefficient is held at its median value, 31.6, being high-skilled reduces the expected probability of the most anti-immigrant response by 3.6% at a per capita income of \$5000, but by 6.1% at per capita incomes of \$15,000 and by 8.6% at per capita incomes of \$25,000. Assuming that per capita income is held constant, at its median value for this sample of countries of \$19,270, being high-skilled reduces the expected probability of the most anti-immigrant response by 9.0% when the Gini coefficient is 25, by 6.2% when the Gini coefficient is 35 and by only 3.5% when the Gini coefficient is 45. The net impact of being high-skilled is positive for Gini coefficients of 58 and over. The results are thus economically as well as statistically significant.<sup>22</sup> Moreover, these findings are robust, in that they survive the addition of extra variables to the specification in Eqs. (2)–(4). From these results, it appears that agents' preferences are consistent with what standard trade theory would have us believe.

<sup>20</sup> Cases where the respondent answered 'can't choose' to the question regarding their attitudes towards immigrants were excluded from the analysis.

<sup>21</sup> We use the World Bank's data for 1995 PPP-adjusted GDP per capita, in 1995 international dollars. The poorest country in the sample (the Philippines) had a GDP per capita of \$3290; the richest (the United States) had a GDP per capita of \$27,330. The mean GDP per capita was \$15,069 and the median was \$18,380. The data on Gini coefficients were again obtained from the World Bank and refer to the closest possible year to 1995. The most equal country in the sample, Slovakia, had a Gini coefficient of 19.49; the most unequal, Russia, had a Gini coefficient of 48.7. The mean Gini coefficient was 31.6 and the median was 31.25.

<sup>22</sup> These results were calculated using the CLARIFY programme described in Tomz et al. (1999) and King et al. (2000).



Table 3  
Determinants of anti-immigrant preferences (ordered probit) (dependent variable: anti-immigrant)

	(1)	(2)	(3)	(4)
<i>Panel A: trade theory</i>				
Skill345	–0.3189* [0.0881]	–0.3179* [0.0895]	–0.2772* [0.0939]	–0.3025* [0.0941]
Skill345 * GDP per capita	–0.0105* [0.0023]	–0.0109* [0.0024]	–0.0065* [0.0025]	–0.0058** [0.0025]
Skill345 * inequality	0.0070* [0.0026]	0.0076* [0.0026]	0.0070** [0.0028]	0.0080* [0.0028]
<i>Panel B: other economic considerations</i>				
Age		0.0087* [0.0024]	0.0073* [0.0025]	0.0062** [0.0025]
Age <sup>2</sup>		–0.0000***	–0.0001** [0.0000]	–0.0000*** [0.0000]
Unemployed		0.0371 [0.0336]	0.0382 [0.0346]	0.0299 [0.0346]
National mobility		–0.0639* [0.0159]	–0.0127 [0.0171]	–0.0113 [0.0171]
<i>Panel C: cultural variables</i>				
Patriotism			0.0805* [0.0114]	0.0623* [0.0115]
Chauvinism			0.3192* [0.0112]	0.2822* [0.0114]
International mobility			–0.0803* [0.0214]	–0.0697* [0.0214]
Never lived abroad			0.1224* [0.0213]	0.1105* [0.0213]
Native			0.1802* [0.0484]	0.1823* [0.0484]
Native parents			0.1964* [0.0430]	0.1964* [0.0430]
Catholic			–0.0239 [0.0206]	–0.0282 [0.0206]
Female			0.0354** [0.0151]	0.0121 [0.0152]
Protectionism				0.1231* [0.0075]
No. of observations	23,714	22,697	21,347	21,317
Log likelihood	–30,208.22	–28,831.3	–26,055.4	–25,874.95
Pseudo- $R^2$	0.04	0.04	0.08	0.08

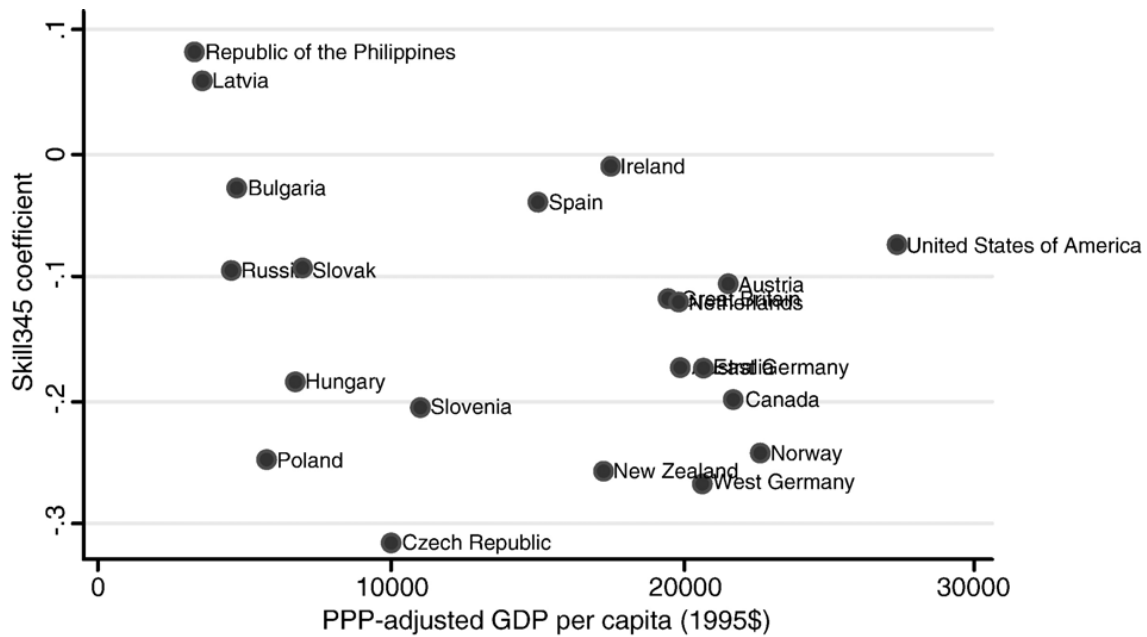
Robust standard errors in brackets. All regressions include country dummies; coefficients not reported.

\* Significant at 1%.

\*\* Significant at 5%.

\*\*\* Significant at 10%.

Another approach to testing the theories outlined earlier is to run a series of regressions explaining attitudes towards immigration in individual countries, and compare the coefficients on Skill345 across countries. Appendix A gives the results of doing this using the specification in Eq. (3) (without country dummies or the two interaction terms). Fig. 1 plots the resultant coefficients on Skill345 for each country, against that country's level of GDP per capita. As can



Source: see text.

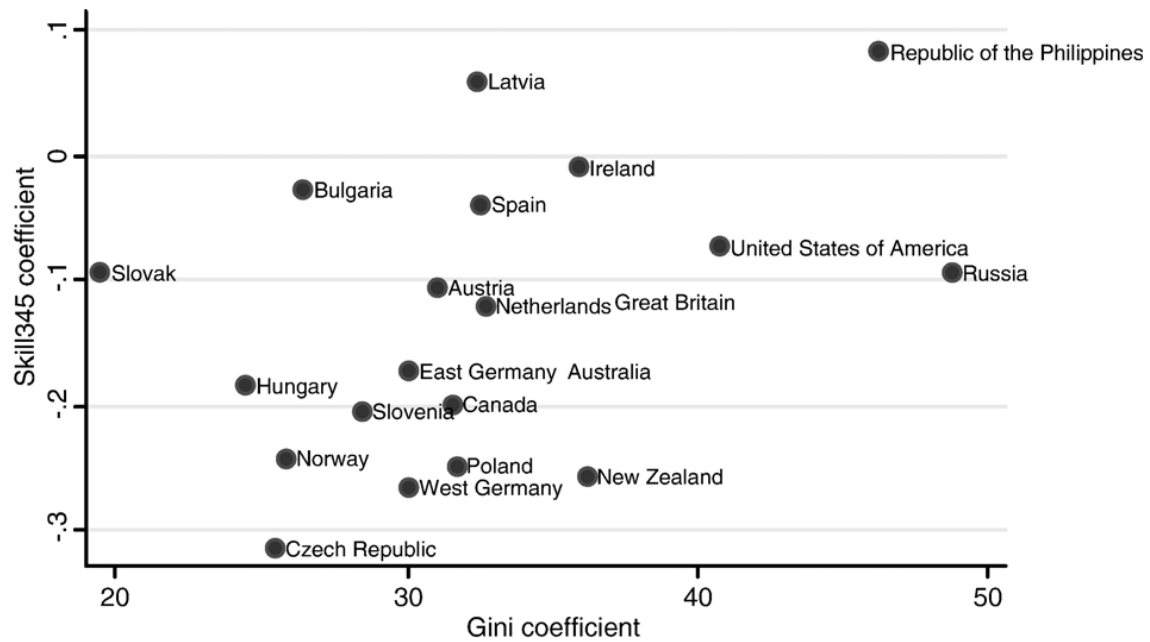
Fig. 1. Impact of skill and GDP.

be seen, there is a clear negative relationship between the coefficient on Skill345 and per capita GDP for the poorer countries in the sample (i.e. the Philippines and the transition economies of Central and Eastern Europe); and in two of the poorest countries, Latvia and the Philippines, the high-skilled are actually more anti-immigrant than the low-skilled (that is, the coefficient on Skill345 is positive). However, for the richer countries in the sample, the relationship is less clear. The overall correlation between the two variables is  $-0.317$ , so it is negative, which is what our theory predicts. Similarly, Fig. 2 shows a positive relationship between the Skill345 coefficient and the Gini coefficient (with a correlation of  $0.407$ ), again as the theory predicts.

Eq. (2) enters other variables into the specification in order to test predictions emerging from the literature on welfare and pensions. The coefficient on age is positive (and the negative quadratic term is not sufficiently large to overturn this over the course of a human lifetime). This is consistent with the Scholten and Thum (1996) prediction that the old oppose immigration on the grounds that immigration lowers wages, and hence their pension benefits, which are taken to be a fixed proportion of current wages; and it seems at odds with the intuition that the old should favour immigration on the grounds that immigrants can help finance pension commitments. Logically, the result could be due to the fact that a constant replacement ratio model is more appropriate for thinking about inter-generational transfer issues than a fixed contribution rate model (to use the Haupt and Peters terminology)<sup>23</sup>; or it could be that the financial viability of pension systems is indeed a concern for pensioners, but that they perceive immigrants as adding to the state's fiscal problems. We suspect that the true explanation for the result is that our cultural variables do not fully control for the non-economic motives underlying attitudes towards immigration, and that the old place a higher value on existing (or traditional) social norms than do the young, but we admit that we cannot discriminate between these various possibilities.

National mobility is unrelated to attitudes to immigration, contrary to our prediction; nor is there any relationship between being unemployed and attitudes towards immigration. While this

<sup>23</sup> Haupt and Peters (1998).



Source: see text.

Fig. 2. Impact of skill and inequality.

may seem surprising, it could be that unemployment is viewed as a threat, which potentially faces all workers, and thus makes them all anti-immigration, but as we will see below, this result is not robust to the estimation method used.

Eq. (3) introduces various variables relevant for testing the hypothesis that non-economic and cultural factors are important in determining attitudes towards immigration. The results show that nationalist sentiment is an extremely strong determinant of attitudes towards immigration, with patriotism and especially chauvinism, having a large positive effect on anti-immigrant sentiment. This result is robust across all specifications and is consistent with the results which O'Rourke and Sinnott (2001) obtained when analysing attitudes towards trade. The results also suggest that those more likely to view diversity as a benefit rather than a cost are less anti-immigrant—those reporting themselves as being willing to move abroad,<sup>24</sup> those who have already lived abroad, and those either born abroad or with foreign-born parents. Being a Roman Catholic does not affect preferences; the coefficient is negative but statistically insignificant, which is in contrast to the strong protectionist effect we found in our earlier work concerning attitudes towards trade protection. Women appear to be more anti-immigrant than men in Eq. (3), which is consistent with what we found in our paper on protectionism, but this result is not robust, since it vanishes in Eq. (4).

Finally, Eq. (4) includes 'protect' as an additional explanatory variable; protect is an ordered variable describing respondents' attitudes towards trade protection, running from 1 (least protectionist) to 5 (most protectionist). Protectionism is positively and statistically significantly correlated with anti-immigrant sentiment, just as Heckscher-Ohlin theory would predict, and none of the other coefficients of particular interest to us change dramatically in size (with the aforementioned exception of the finding for women).

<sup>24</sup> Alternatively, internationally mobile respondents might be less affected by immigration, having access to overseas labour markets, in which case the coefficient on international mobility would reflect economic rather than cultural considerations.

Of necessity, these exercises all rely on average correlations, and correlation is not necessarily causation. It would be nice to know, for example, if the results involving our skill variable do indeed reveal labour market forces at work, which is what our theoretical discussion assumed, or whether the correlations are purely spurious. One attempt to resolve this issue is presented in the first two columns of [Table 4](#), which replicate the specification in column 3 of [Table 3](#), but which split the sample into two groups: those in the labour force, and those outside it.<sup>25</sup> As can be seen from the table, the conclusions regarding skill levels, income per capita and inequality all carry over in the case where only labour force participants are considered (column 1), and indeed the three relevant coefficients are all bigger than the corresponding coefficients in the previous table. However, all three coefficients are much smaller, and statistically insignificant, when only persons outside the labour force are included in the regression (column 2). These results suggest that the findings of [Table 3](#) regarding Heckscher-Ohlin factor proportions theory indeed reflect the workings of labour markets. By contrast, the coefficients on patriotism and chauvinism are roughly the same size for non-labour force participants and for those in the labour force. Of particular interest is the fact that our findings relating to age apply only to persons not in the labour force, consistent with the notion that it is retirees who are driving this result; similarly, there is no gender effect when only labour force participants are considered.

Columns 3 and 4 of [Table 4](#) further split the sample, this time geographically. Column 3 considers western economies, while column 4 considers the former communist economies of Eastern Europe. As can be seen, there are several interesting differences in the results for these two groups of countries. Chauvinism is a much bigger factor shaping western attitudes, whereas being a native-born resident, and having native-born parents, is more important in the east. Age matters in the west but not in the east. Western Catholics are less anti-immigrant than other western respondents, but Catholicism has no effect on attitudes in the East. Most strikingly, the coefficient on skills is extremely large and negative in the west, but insignificant in the east, consistent with Heckscher-Ohlin theory.

[Table 5](#) revisits the issue of a possible link between attitudes towards trade and immigration, and tackles one possible objection to the results in Eq. (4) of [Table 3](#), which is that 'protectionism' is not an exogenous variable, but rather an endogenous variable determined by the same forces as 'anti-immigrant'. The first two columns of [Table 5](#) therefore present the results of seemingly unrelated bivariate probit regressions explaining attitudes towards both trade and immigration simultaneously. The procedure is to estimate two regressions with the same explanatory variables as before, but to allow the disturbance terms in both regressions to be correlated with each other.<sup>26</sup> The dependent variables in both cases are binary variables, indicating whether the respondent gave the most anti-globalization response possible: 'highly protectionist' is 1 if 'protectionism'=5, while 'highly anti-immigrant' is 1 if 'anti-immigrant'=5; otherwise, both variables are zero. The  $\rho$  coefficient reported at the bottom is the correlation between the disturbances in the two equations, or '(roughly) the correlation between the outcomes after the influence of the included factors is accounted for' ([Greene, 2000](#), p. 854). The results confirm Heckscher-Ohlin theory in that  $\rho$  is strongly positive, and in that the interaction terms between Skill345 and GDP per capita are negative in Eqs. (1) and (2), while the interaction term between Skill345 and the Gini coefficient in Eq. (2) is positive. Broadly speaking, the other results are

<sup>25</sup> [Scheve and Slaughter \(2001\)](#) and [Mayda \(2005\)](#) adopt the same strategy, and obtain similar results.

<sup>26</sup> See [Greene \(2000, pp. 849–856\)](#). The interaction term between Skill345 and the Gini coefficient is omitted from the equation explaining protectionism, so as to follow the specification in [Mayda and Rodrik \(2005\)](#) and [O'Rourke and Sinnott \(2001\)](#).



Table 4  
Sensitivity analysis (ordered probit) (dependent variable: anti-immigrant)

	(1)	(2)	(3)	(4)
	In labour force	Not in labour force	West	Eastern Europe
<i>Panel A: trade theory</i>				
Skill345	−0.3217* [0.1103]	−0.2181 [0.2139]	−0.7522* [0.2315]	−0.0022 [0.1376]
Skill345 * GDP per capita	−0.0087* [0.0030]	−0.0045 [0.0069]	−0.0006 [0.0077]	−0.0174** [0.0077]
Skill345 * inequality	0.0087* [0.0032]	0.0053 [0.0082]	0.0184* [0.0053]	−0.0004 [0.0036]
<i>Panel B: other economic considerations</i>				
Age	0.0041 [0.0051]	0.0122* [0.0036]	0.0103* [0.0032]	0.0026 [0.0044]
Age <sup>2</sup>	0 [0.0001]	−0.0001* [0.0000]	−0.0001* [0.0000]	0 [0.0000]
Unemployed	0.0263 [0.0361]		−0.0001 [0.0502]	0.0391 [0.0500]
National mobility	−0.0317 [0.0217]	0.0186 [0.0279]	−0.0364 [0.0222]	0.0235 [0.0295]
<i>Panel C: cultural variables</i>				
Patriotism	0.0791* [0.0147]	0.0829* [0.0184]	0.0877* [0.0153]	0.0790* [0.0186]
Chauvinism	0.3229* [0.0143]	0.3073* [0.0181]	0.4546* [0.0150]	0.1674* [0.0179]
International mobility	−0.0691* [0.0261]	−0.0998* [0.0377]	−0.1202* [0.0269]	0.0535 [0.0398]
Never lived abroad	0.1490* [0.0278]	0.0800** [0.0332]	0.1144* [0.0260]	0.0923** [0.0420]
Native	0.1807* [0.0651]	0.1855* [0.0720]	0.1068*** [0.0609]	0.3715* [0.0860]
Native parents	0.2004* [0.0575]	0.1854* [0.0649]	0.1619* [0.0553]	0.3097* [0.0732]
Catholic	−0.0054 [0.0263]	−0.0538 [0.0334]	−0.1048* [0.0272]	0.0476 [0.0341]
Female	0.0175 [0.0199]	0.0664* [0.0255]	0.0340*** [0.0196]	0.0645** [0.0259]
No. of observations	12,575	8772	12,606	7597
Log likelihood	−15,459.58	−10,564.34	−15,416.35	−8800.23
Pseudo-R <sup>2</sup>	0.08	0.07	0.09	0.05

Robust standard errors in brackets. All regressions include country dummies; coefficients not reported.

\* Significant at 1%.

\*\* Significant at 5%.

\*\*\* Significant at 10%.

similar to those obtained earlier, with two important differences. First, women are now less anti-immigrant than men (*ceteris paribus*), rather than more so, although the coefficient is statistically insignificant. The results thus suggest an important difference in the gender effect regarding attitudes towards trade and immigration. Second, and even more strikingly, being unemployed now has a significant positive effect on anti-immigrant sentiment, consistent with 'common sense' a priori expectations, but contrary to our previous findings. The results suggest that it is important, when examining attitudes towards globalization, to let the estimation strategy account

Table 5  
Determinants of anti-globalization preferences (seemingly unrelated bivariate probit)

	(1)	(2)	(3)	(4)	(5)	(6)
	Highly protectionist	Highly anti-immigrant	Highly protectionist	Highly anti-refugee	Highly anti-immigrant	Highly anti-refugee
<i>Panel A: trade theory</i>						
Skill345	0.0346 [0.0487]	−0.2177* [0.1092]	0.036 [0.0487]	0.0397 [0.1430]	−0.2001** [0.1095]	0.0367 [0.1422]
Skill345*GDP per capita	−0.0136*** [0.0030]	−0.0090*** [0.0029]	−0.0136*** [0.0030]	−0.0006 [0.0039]	−0.0090*** [0.0029]	−0.0006 [0.0039]
Skill345*inequality		0.0056** [0.0033]		−0.0049 [0.0044]	0.0051 [0.0034]	−0.0049 [0.0044]
<i>Panel B: other economic considerations</i>						
Age	0.0165*** [0.0032]	0.0189*** [0.0031]	0.0164*** [0.0032]	0.0079** [0.0042]	0.0187*** [0.0031]	0.0078** [0.0041]
Age <sup>2</sup>	−0.0001*** [0.0000]	−0.0002*** [0.0000]	−0.0001*** [0.0000]	−0.0001*** [0.0000]	−0.0002*** [0.0000]	−0.0001*** [0.0000]
Unemployed	0.0871* [0.0399]	0.1008* [0.0399]	0.0857* [0.0400]	−0.0087 [0.0521]	0.0997* [0.0399]	−0.0045 [0.0512]
National mobility	−0.032 [0.0215]	0.0066 [0.0206]	−0.0315 [0.0216]	−0.0549* [0.0277]	0.0059 [0.0206]	−0.0595* [0.0273]
<i>Panel C: cultural variables</i>						
Patriotism	0.1977*** [0.0147]	0.0817*** [0.0136]	0.1973*** [0.0148]	0.0593*** [0.0189]	0.0820*** [0.0136]	0.0618*** [0.0188]

Chauvinism	0.3668*** [0.0141]	0.3753*** [0.0131]	0.3632*** [0.0141]	0.2448*** [0.0180]	0.3765*** [0.0132]	0.2572*** [0.0179]
International mobility	0.004 [0.0282]	0.0265 [0.0258]	0.0041 [0.0281]	0.0509 [0.0344]	0.0242 [0.0258]	0.0483 [0.0340]
Never lived abroad	0.0313 [0.0277]	0.0517* [0.0262]	0.0293 [0.0276]	0.0432 [0.0362]	0.0489** [0.0262]	0.0353 [0.0357]
Native	0.0807 [0.0653]	0.2043*** [0.0683]	0.0811 [0.0654]	0.0789 [0.0852]	0.1974*** [0.0683]	0.0506 [0.0832]
Native parents	-0.0449 [0.0589]	0.2580*** [0.0599]	-0.0452 [0.0589]	0.0775 [0.0760]	0.2614*** [0.0601]	0.0862 [0.0746]
Catholic	0.0588* [0.0262]	-0.0102 [0.0244]	0.0571* [0.0262]	0.0214 [0.0321]	-0.0085 [0.0244]	0.0197 [0.0319]
Female	0.0976*** [0.0191]	-0.0267 [0.0181]	0.0981*** [0.0191]	-0.0828*** [0.0242]	-0.027 [0.0181]	-0.0801*** [0.0240]
Constant	-2.8405*** [0.1051]	-2.7433*** [0.1014]	-2.8307*** [0.1053]	-2.1556*** [0.1323]	-2.7376*** [0.1011]	-2.1531*** [0.1303]
Observations		24,322		24,322		24,322
$\rho$ [standard error]		0.2232 [0.0124]		0.1795 [0.0164]		0.4831 [0.0132]
Wald test of $\rho=0$		$\chi^2(1)=302.148$ $p$ -value=0.0000		$\chi^2(1)=115.262$ $p$ -value=0.0000		$\chi^2(1)=932.668$ $p$ -value=0.0000
Log likelihood		-24,401.73		-18,135.86		-18,988.06

Robust standard errors in brackets. All regressions include country dummies; coefficients not reported.

- \* Significant at 5%.
- \*\* Significant at 10%.
- \*\*\* Significant at 1%.

for the fact that there are different dimensions to globalization, and that attitudes towards these different aspects of integration may be correlated with each other.

Eqs. (3–6) in [Table 5](#) show further bivariate probit estimates, where an additional variable is now entered, namely attitudes towards refugees, rather than immigrants in general. The dependent variable is based on an ordered variable, anti-refugee, which runs from 1 (agree strongly with the statement that refugees should be allowed to stay in the country) to 5 (disagree strongly); 'highly anti-refugee' in [Table 5](#) is taken to be equal to one if 'anti-refugee' = 5 and zero otherwise. Two estimates are given: one of 'highly anti-refugee' taken jointly with 'highly protectionist' and one of 'highly anti-refugee' taken jointly with 'highly anti-immigrant'. What is striking from the table is that the results for attitudes towards refugees are so different from the results for immigration generally: in particular, none of the variables involving skill show up as significant in Eqs. (4) and (6). The interaction term between skills and GDP per capita is tiny and statistically insignificant; the interaction term between skills and inequality actually has the wrong sign (and is also statistically insignificant). Nor does the coefficient on skills alone show up as significant in either equation. Of course, if respondents believed that refugees were not allowed to work, then it would be logical for them not to expect refugees to have a labour market impact.<sup>27</sup> This interpretation of the results is consistent with the fact that while the unemployed are, as already mentioned, significantly more anti-immigrant than other respondents, they are not more anti-refugee (after all, if refugees are not perceived as working, then they can hardly be blamed for taking away jobs from locals). In this sense, these negative findings also bolster the labour market interpretation of our Heckscher-Ohlin findings in [Table 3](#) (and in columns 1–3 and 5 of [Table 5](#)).

On the other hand, you would expect attitudes towards refugees to reflect concerns about the welfare state, as well as cultural concerns of the sort identified by [Hillman and Weiss \(1999\)](#) and others. And indeed, our results show that age, patriotism and chauvinism are all strongly positively correlated with anti-refugee sentiment. There are two further features of the results, which deserve to be highlighted. First, being mobile nationally makes respondents less anti-refugee, although it has no impact on their attitudes towards immigrants in general. Second, women are significantly less anti-refugee than men, in strong contrast with their protectionist attitudes towards commodity trade.

## 5. Comparison with [Mayda \(2005\)](#)

[Mayda \(2005\)](#) has recently and independently tested the Heckscher-Ohlin factor proportions hypotheses, and arrived at similar conclusions to ours, using the same data set, as well as the World Values Survey. While she does not control for patriotism and chauvinism in the manner that we do, she does find that racism has a powerful effect on anti-immigrant attitudes, which is consistent with our findings; she also controls for a variety of security and cultural concerns. She uses both education and skills as measures of human capital and runs probit regressions explaining a dichotomous 'immigrant opinion' variable. Her results are even more favourable for Heckscher-Ohlin theory than ours: our findings regarding the relevance of factor proportions theory thus appear to be robust.

We would highlight three major differences between this paper and hers. The first concerns the questions being asked: we have been anxious to address not just the hypotheses arising from

<sup>27</sup> As mentioned earlier, once asylum seekers have been granted refugee status, they are typically allowed to work; however, the common linguistic confusion between the two groups, coupled with the fact that asylum seekers are typically not allowed to work, could lead survey respondents to regard 'refugees' as not participating in local labour markets.



factor proportions theory, but other economic determinants of anti-immigrant sentiment stemming from concerns about pensions and the viability of the welfare state. Second, we have not just estimated equations explaining anti-immigrant attitudes in isolation; rather, we have also explicitly taken account of the fact that immigration is just one dimension of globalization and that attitudes towards this dimension may be correlated with attitudes towards other dimensions, such as trade. As we have seen, taking account of this econometrically can have important effects on the results and, in our view, further research in this area should adopt a similar estimation strategy. Third, while Mayda allows anti-refugee sentiment to be an independent variable affecting attitudes towards immigrants more generally, we have preferred to treat anti-refugee sentiment as an additional variable to be explained, in conjunction with attitudes towards immigration more generally and trade. We have found that the determinants of attitudes towards refugees are quite different from the determinants of attitudes towards immigration in general and that these differences are useful in interpreting both sets of results.

## 6. Conclusions

There are four main conclusions of this paper. The first is that, for labour market participants, standard trade theory does well in predicting individual attitudes towards immigration. The high-skilled are less opposed to immigration than the low-skilled, and this effect is greater in richer countries than in poorer countries and in more equal countries than in more unequal ones. On the other hand, skill does not appear to matter for the attitudes of those not in the labour force.

The second conclusion is that attitudes towards immigration reflect nationalist sentiment among respondents. If true, this conclusion, which mirrors that of O'Rourke and Sinnott (2001) for attitudes towards commodity trade, is important: objections to globalization rooted in ideology may be less easy to deal with than objections rooted in interests, since the latter can in principle be dealt with through a variety of complementary policies, such as side-payments of various kinds, social safety nets, or educational and training policies. On the other hand, we recognize that this finding is less robust than the first one: while it is implausible to think that a respondent's skill level is a function of their attitudes towards immigrants, it is possible that patriotism or chauvinism might be influenced by anti-immigrant sentiment: there is thus a potential reverse causality problem here, which we are unable to adequately address with the data at our disposal.

The third conclusion is that the old are more anti-immigrant than the young. This is consistent with models where pension benefits are related to current wages, but not with models in which pension benefits depend on the current tax base, which in turn can be augmented by immigration. On the other hand, this finding might also be due to cultural considerations (i.e. if the old care more about traditional social norms than do the young).

The final conclusion is that attitudes towards refugees are different in nature than attitudes towards immigrants more generally. Respondents are on average less hostile towards refugees than towards immigrants in general and, while skill levels matter a lot for attitudes towards immigration, they are irrelevant in determining attitudes towards refugees.

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## Appendix A. Country-specific regressions: anti-immigration

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Australia	West Germany	East Germany	Britain	USA	Austria	Hungary	Italy	Ireland	Netherlands	Norway	Sweden
<i>Panel A: trade theory</i>												
Skill345	-0.1729*** [0.0524]	-0.2636*** [0.0909]	-0.1734 [0.1385]	-0.1183 [0.0858]	-0.0741 [0.0710]	-0.1073 [0.0999]	-0.1843** [0.0910]		-0.0095 [0.0864]	-0.1198** [0.0575]	-0.2411*** [0.0662]	
<i>Panel B: other economic considerations</i>												
Age	-0.0114 [0.0101]	0.0259** [0.0132]	-0.0015 [0.0209]	0.0282** [0.0130]	0.0184 [0.0114]	0.0142 [0.0120]	0.0023 [0.0126]	-0.0029 [0.0136]	-0.0195 [0.0136]	0.0176* [0.0090]	-0.0047 [0.0103]	0.0152 [0.0129]
Age <sup>2</sup>	0 [0.0001]	-0.0003** [0.0001]	0 [0.0002]	-0.0003** [0.0001]	-0.0002 [0.0001]	-0.0001 [0.0001]	0 [0.0001]	0.0001 [0.0002]	0.0002* [0.0001]	-0.0002 [0.0001]	0 [0.0001]	-0.0002 [0.0001]
Unemployed	0.0265 [0.1540]	0.4171 [0.3006]	0.1157 [0.1846]	-0.0345 [0.1654]	-0.2719 [0.1838]	-0.3086* [0.1865]	0.1294 [0.1479]	0.0585 [0.2231]	0.064 [0.1448]	-0.2235 [0.1375]	0.1733 [0.1774]	0.0076 [0.1308]
National mobility	0.0355 [0.0540]	0.0126 [0.0869]	0.0521 [0.1212]	-0.0575 [0.0888]	0.0073 [0.0833]	-0.2031** [0.0849]	0.0275 [0.0900]	-0.0747 [0.0799]	-0.2418*** [0.0879]	-0.0449 [0.0596]	-0.0265 [0.0694]	-0.0004 [0.0762]
<i>Panel C: cultural variables</i>												
Patriotism	0.1803*** [0.0413]	0.1332** [0.0550]	0.1535* [0.0847]	0.1031 [0.0627]	0.1485** [0.0577]	0.0613 [0.0538]	0.0777 [0.0568]	0.0850* [0.0476]	-0.0333 [0.0591]	0.0315 [0.0386]	0.1320** [0.0519]	0.0888* [0.0489]
Chauvinism	0.4437*** [0.0347]	0.5599*** [0.0553]	0.4859*** [0.0760]	0.5841*** [0.0598]	0.2086*** [0.0463]	0.4237*** [0.0530]	0.0904* [0.0513]	0.3776*** [0.0541]	0.2617*** [0.0598]	0.6995*** [0.0412]	0.6490*** [0.0455]	0.7058*** [0.0479]
International mobility	-0.004 [0.0660]	-0.2034** [0.0949]	0.1384 [0.1800]	-0.105 [0.1049]	-0.3189*** [0.0947]	-0.2135* [0.1249]	0.0209 [0.1413]	-0.0113 [0.0925]	-0.0592 [0.1114]	-0.1172* [0.0673]	-0.2024** [0.0872]	-0.1245 [0.0852]
Never lived abroad	0.2419*** [0.0625]	0.0043 [0.1065]	0.3269 [0.2118]	0.028 [0.0970]	0.1176 [0.0876]	0.0199 [0.1145]	0.1325 [0.1600]	0.0718 [0.1141]	0.1363 [0.0843]	0.0271 [0.0771]	-0.0922 [0.0788]	0.0092 [0.0907]
Native	-0.0139 [0.1389]	0.129 [0.3063]	-0.3525 [0.8563]	0.0311 [0.2645]	-0.2979 [0.2398]	-0.1439 [0.3056]	0.4538 [0.3766]	-0.1827 [0.5282]	-0.211 [0.3013]	0.0648 [0.2531]	0.3456 [0.2462]	-0.5123* [0.2714]
Native parents	-0.0022 [0.1279]	0.3966 [0.2768]	0.0537 [0.7173]	0.1606 [0.2517]	0.6874*** [0.2215]	0.2059 [0.2765]	-0.0422 [0.3374]	-0.6615** [0.3271]	0.009 [0.2450]	0.5477*** [0.2073]	0.2379 [0.2014]	0.5994** [0.2523]
Catholic	-0.2296*** [0.0601]	-0.0035 [0.0761]	0.11 [0.3120]	-0.1229 [0.1321]	-0.1231 [0.0787]	-0.1612* [0.0973]	-0.0208 [0.0824]	0.0733 [0.1607]	0.4036*** [0.1525]	0.1417** [0.0678]	0.1424 [0.4819]	0.492 [0.4273]
Female	0.2177*** [0.0509]	0.0755 [0.0761]	-0.0361 [0.1106]	-0.1277 [0.0799]	0.1083 [0.0681]	-0.0265 [0.0743]	0.1283 [0.0784]	0.074 [0.0705]	0.0164 [0.0756]	0.0082 [0.0536]	-0.0833 [0.0613]	0.0107 [0.0671]
No. of observations	1904	984	485	870	1074	927	937	1033	885	1744	1311	1117
Log likelihood	-2415.49	-999.64	-469.1	-960.01	-1381.64	-1061.45	-939.35	-1170.15	-1005.07	-1965.88	-1518.54	-1295.27
Pseudo-R <sup>2</sup>	0.08	0.13	0.09	0.1	0.05	0.07	0.01	0.05	0.03	0.12	0.12	0.11

Standard errors in brackets. \*Significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%.

(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Czech Republic	Slovenia	Poland	Bulgaria	Russia	New Zealand	Canada	Philippines	Japan	Spain	Latvia	Slovakia
-0.3143***	-0.2039** [0.0875]	-0.2479** [0.1005]	-0.0272 [0.1009]	-0.0945 [0.0886]	-0.2566*** [0.0863]	-0.1985*** [0.0740]	0.0838 [0.1524]		-0.04 [0.1092]	0.0586 [0.1135]	-0.0937 [0.0812]
-0.001 [0.0135]	-0.0085 [0.0133]	0.0097 [0.0134]	0.0158 [0.0156]	-0.0043 [0.0123]	-0.0032 [0.0134]	0.0114 [0.0127]	0.0117 [0.0112]	0.0075 [0.0099]	0.0114 [0.0104]	0.0134 [0.0168]	0.0183 [0.0119]
0 [0.0001]	0.0001 [0.0001]	0 [0.0001]	-0.0001 [0.0002]	0.0001 [0.0001]	0 [0.0001]	-0.0001 [0.0001]	-0.0001 [0.0001]	0 [0.0001]	-0.0001 [0.0001]	0 [0.0002]	-0.0001 [0.0001]
-0.1205 [0.2917]	-0.3169** [0.1469]	-0.0973 [0.1490]	0.4442*** [0.1567]	0.2522** [0.1283]	0.3468* [0.1867]	0.1393 [0.2209]	0.1989 [0.1803]	-0.1215 [0.3147]	0.0283 [0.1077]	-0.1394 [0.1383]	0.1532 [0.1457]
0.1256 [0.0815]	0.0999 [0.0840]	-0.01 [0.0904]	-0.3718*** [0.1002]	0.0722 [0.0856]	-0.0061 [0.0847]	0.029 [0.0795]	0.0542 [0.0709]	-0.1490* [0.0764]	-0.0369 [0.0807]	0.0376 [0.1020]	0.1242* [0.0732]
0.1301** [0.0543]	0.1359** [0.0569]	0.1531** [0.0663]	0.0903 [0.0567]	0.0545 [0.0442]	0.1558*** [0.0589]	-0.0559 [0.0457]	0.0892* [0.0519]	0.2450*** [0.0541]	0.0652 [0.0540]	-0.0358 [0.0571]	0.0288 [0.0477]
0.1904*** [0.0517]	0.3380*** [0.0554]	0.1345** [0.0685]	-0.0085 [0.0669]	0.1174*** [0.0449]	0.3500*** [0.0514]	0.4961*** [0.0471]	-0.1314** [0.0586]	0.1271*** [0.0417]	0.1397** [0.0596]	0.2736*** [0.0564]	0.1104** [0.0430]
-0.1815 [0.1289]	0.0836 [0.1222]	0.1159 [0.1118]	0.2543** [0.1188]	0.0351 [0.1105]	-0.2307** [0.0925]	0.0095 [0.0830]	-0.2240*** [0.0775]	-0.0059 [0.1307]	0.0295 [0.0955]	0.1466 [0.1329]	-0.0086 [0.0875]
-0.1294 [0.1212]	0.0828 [0.0977]	0.2178* [0.1320]	-0.0375 [0.1384]	-0.0595 [0.1685]	0.1399 [0.0874]	0.2443*** [0.0812]	0.2310* [0.1194]	0.5820*** [0.1537]	-0.1017 [0.1057]	0.1698 [0.1151]	0.1241 [0.1186]
0.0194 [0.3505]	0.2129 [0.2560]	-0.1013 [0.3859]	0.4401 [0.8125]	0.2121 [0.3979]	0.0665 [0.1883]	0.3821** [0.1665]	0.1845 [0.4102]		-0.0837 [0.1769]	0.5032*** [0.1687]	0.7359** [0.3620]
0.0517 [0.2339]	0.4734** [0.2288]	0.1274 [0.3116]	0.6773** [0.3263]	0.0851 [0.3395]	0.2642 [0.1703]	-0.22 [0.1481]	-0.2214 [0.2987]	0.2536 [0.6247]	0.368 [0.2980]	0.5521*** [0.1468]	-0.0529 [0.2036]
-0.0629 [0.0802]	0.1304 [0.0929]	0.0195 [0.1223]	-1.6857** [0.7317]	0.2848 [0.7424]	-0.3280*** [0.1043]	-0.2592*** [0.0706]	0.1287 [0.0886]	-0.9512** [0.4090]	0.2314* [0.1286]	0.0862 [0.1067]	0.1222* [0.0695]
0.0691 [0.0763]	-0.1778** [0.0747]	0.2086** [0.0842]	0.2750*** [0.0900]	0.1353** [0.0678]	-0.0268 [0.0745]	0.0869 [0.0682]	-0.077 [0.0643]	0.3325*** [0.0675]	-0.0365 [0.0688]	-0.0757 [0.0874]	0.0057 [0.0675]
888	933	718	674	1036	852	1010	1144	1026	1045	824	1102
-995.77 0.03	-1030.03 0.06	-931.31 0.04	-760.54 0.04	-1365.86 0.01	-1102.76 0.07	-1380.91 0.06	-1586.03 0.01	-1339.17 0.06	-1212.4 0.01	-768.08 0.12	-1318.65 0.02

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