

## **The Determinants of Individual Attitudes Towards Immigration**

Kevin H. O'Rourke

Department of Economics and IIS, Trinity College Dublin, and CEPR and NBER

and Richard Sinnott

Department of Politics and ISSC, University College Dublin

January 2004

We are grateful to Kevin Denny and Chris Minns for helpful suggestions. O'Rourke is an IRCHSS Government of Ireland Senior Fellow, and wishes to thank the Irish Research Council for the Humanities and Social Sciences for its generous financial support. The usual disclaimer applies.

## Abstract

The paper uses a cross-country dataset to investigate the determinants of individual attitudes towards immigration. There are three main conclusions. The first is that attitudes towards immigration are not a function of economic interests alone; rather, they also reflect nationalist sentiment among respondents. The second is that for labour market participants, standard economic theory does a good job of 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, consistent with Heckscher-Ohlin theory; and in more equal countries than in more unequal ones (consistent with the Borjas theory of immigrant self-selection). On the other hand, non-economic factors are much more important in determining the attitudes of those not in the labour force.

**Key words:** immigration, political economy, survey data, factor proportions theory, self-selection, nationalism.

**JEL codes:** F2

## 1. Introduction

Standard economic theory suggests that the gains to free migration could be enormous. 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. Since international wage gaps are huge, the benefits would be substantial: according to one general equilibrium estimate, freeing up world migration could double world income (Hamilton and Whalley 1984), a gain that leaves the much-trumpeted estimated benefits of world trade deals in the shade. 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). Despite the compelling economic arguments in favour of 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 raise it (UN 2002, Table 3, p. 18). What are the underlying causes of this apparent paradox?

In democracies, government policies will largely reflect the individual preferences of voters. There are at least two reasons why voters might not want immigration. The first is non-economic: racism, xenophobia, or milder forms of nationalist sentiment might lead voters to reject the presence of foreigners. The second is economic: voters' attitudes towards immigration might depend on their economic interests, with those who benefit as a result of immigration supporting it, and those who are economically hurt by immigration opposing it.

In a paper examining the growing restrictiveness of late 19<sup>th</sup> 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 the most consistently significant variable explaining the rise in immigration barriers was economic inequality: regardless of what else was included in the regression equation, rising equality encouraged more open immigration policies, while rising inequality encouraged more restrictive immigration policies.

Other economic variables also seem to have mattered for policy: high real wage levels were associated with liberal policy in some countries, high real wage growth in others. Low and falling immigrant 'quality', as measured by real wages in source countries, induced immigration restrictions. There is also evidence of policy spillovers during the period: for example, Argentinian policy tended to mimic policy in Australia, Canada and Brazil. However, Timmer and Williamson found no evidence that widening ethnicity gaps between immigrants and host country populations were responsible for tighter controls: policy was well explained by the economic effects of immigration, and by policy overseas. Once other variables have been controlled for, there was no independent role for xenophobia, of the sort frequently stressed by qualitative histories of the period.

Does this conclusion still hold? We want to take seriously the potential roles of both economic and 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 paper also differs from Timmer and Williamson (1998) in the research strategy pursued. Rather than examining the determinants of government policy per se, we look at the determinants of individual voters' attitudes towards immigration, using cross-country survey data. In so doing, we are following in the footsteps of Scheve and Slaughter (2001a), who used survey data to tackle the question of who is in favor of immigration, and why. As Scheve and Slaughter (citing Rodrik, 1995) point out in another paper, individual-level preferences regarding trade must lie at the heart of any rational choice account of policy-formation, but using aggregate data provides only indirect information on agents' preferences, since "policy preferences and institutions together determine policy actions, so the mapping from preferences to actions is not unambiguous" (Scheve and Slaughter 2001b, p. 4). 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 various economic hypotheses regarding the determinants of attitudes towards immigration.

The paper is closest in spirit to previous work that we, and Mayda and Rodrik, have done on the determinants of individual attitudes towards trade (Mayda and Rodrik 2001, O'Rourke and Sinnott 2001). Since beginning this current work, we have become aware of the independent work of Mayda (2003) which raises many (but not all) of the same issues as this paper, and which uses the same dataset. Since Mayda's study differs from ours in various respects, her results serve as a robustness check on several of our key conclusions.

The plan of the paper is as follows. Section 2 asks what standard economic theory has to say about the determinants of attitudes towards immigration. Section 3 introduces the survey data set which we use, and indicates how we test the possibility that nationalism matters for individual voter attitudes. Section 4 reports the results of ordered probit regressions asking what are the determinants of individual attitudes towards immigrants in general, as well as refugees in particular. It also reports a number of

bivariate probit regressions which allow us to simultaneously explore the determinants of trade and immigration. Section 5 concludes.

## **Section 2. Theory**

Labour demand curves slope downwards, and immigration lowers wages (Borjas 2003): this is the basic economic fact which leads people to oppose immigration. Whose wages should be lowered, however, depends on the composition of immigration: low-skilled immigration should be opposed by low-skilled workers, while high-skilled immigration should be opposed by high-skilled workers. What then determines whether it is the high-skilled or the low-skilled who are more opposed to immigration?

Standard Heckscher-Ohlin trade theory is quite clear in its predictions regarding who should benefit and who should lose from free trade in commodities. Imagine a two factor world in which countries are distinguished only by their relative endowments of skilled and unskilled workers. The relative wages of skilled workers will be lower, other things being equal, in skill-abundant countries (which we will denote by R, and refer to as rich countries) than in unskilled-labor-abundant countries (denoted by P, and referred to as poor countries): we have  $(w_S/w_{US})^R < (w_S/w_{US})^P$ , where  $w_S$  and  $w_{US}$  denote skilled and unskilled wages respectively. It is this inequality that drives comparative advantage: the rich countries will export skill intensive goods, while the poor countries will export unskilled labor intensive goods. The result is relative factor price convergence (or, in the limit, factor price equalization): when countries move towards freer trade, the relative price of skilled labor rises in rich countries, and falls in poor countries. Moreover, the abundant factor gains in real terms in all countries, while the scarce factor loses. Thus the skilled should favor free trade in rich countries, while they should favor protection in poor countries; the unskilled in rich countries should favor protection, while the unskilled in poor countries should support free trade.

In a pure Heckscher-Ohlin world in which technology is identical across countries, and in which

countries are only distinguished by their relative endowments of skilled and unskilled labor, it is again possible to make unambiguous predictions about who should favor immigration and who should not. This is the case, even though international migration is not driven by comparative advantage and relative factor prices, but by absolute advantage, and by absolute factor price differentials. In a pure HO world, the real wages of skilled workers will be higher in poor countries (where skilled workers are scarce) than in rich countries (where they are abundant), while unskilled wages will be higher in rich countries than in poor countries: we have (in real terms)  $w_S^P > w_S^R$ , but  $w_{US}^R > w_{US}^P$ . Thus, we should observe skilled workers migrating from rich to poor countries, and unskilled workers migrating from poor to rich countries. Immigration will hurt skilled workers in poor countries, but benefit the unskilled there; therefore in poor countries the unskilled should favor immigration, while skilled workers should oppose it. The situation is the reverse in rich countries: immigration will hurt the unskilled, but benefit skilled workers. Thus skilled workers should be pro-immigration, while the unskilled should oppose it.

We thus have:

**Prediction 1:** the impact of skills on anti-immigrant sentiment should be related to a country's GDP per capita.<sup>1</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. More generally, an interaction term between skills and GDP per capita should enter with a negative sign in a regression explaining anti-immigrant sentiment.

---

<sup>1</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.

Note that in such a pure 2-country, 2-factor Heckscher-Ohlin world, in which countries are distinguished solely by their relative factor endowments, agents are consistent in their attitudes towards globalization. That is, in rich countries skilled workers favor both trade and 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 favor both protection and immigration restrictions. This symmetry reflects the fact that in a pure 2-factor Heckscher-Ohlin world in which technology is identical across countries, trade and factor flows are substitutes: they have identical effects on factor prices (i.e. they both lead to relative and absolute factor price convergence), and thus the more you have of one dimension of globalization, the less incentive there will be for the other dimension to take place. In such a world, scarce factors lose as a result of either trade or immigration, while abundant factors gain from either. One immediate political consequence of the fact that trade and migration are substitutes for each other is that agents who are protectionist should also be anti-immigration: both trade and immigration have to be simultaneously restricted, since either phenomenon will hurt the scarce factor. Protection without immigration restrictions will not work, since protection without immigration restrictions will simply lead to more immigration; immigration barriers without protection will not work, since immigration barriers on their own will simply lead to more trade (Mundell 1957).

We thus have:

**Prediction 2:** *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.

Things get a lot more complicated if technology differs across countries, or if there are more than



two factors of production. Any test of Heckscher-Ohlin theory will in all likelihood do better by admitting such possibilities. If technology is better in the rich country, or if the rich country is better endowed with some third factor of production than the poor country, then it no longer follows from an inequality such as  $(w_S/w_{US})^R < (w_S/w_{US})^P$  that skilled workers will migrate from rich to poor countries: it is quite possible that  $(w_S/w_{US})^R < (w_S/w_{US})^P$ , but that (in real terms)  $w_S^R > w_S^P$ . In this case, skilled workers will move from poor (unskilled labor abundant) countries to rich (skill abundant) countries: unskilled workers will move in the same direction as skilled workers. This is, of course, what happens in the real world, reflecting the fact that richer countries do indeed enjoy superior technology to poor countries, and that endowments alone cannot explain differences in income, or for that matter trade patterns and factor flows. The issue of whether skilled or unskilled workers should be more anti-immigration in rich countries thus becomes unclear. Presumably it depends upon whether immigration predominantly involves skilled or unskilled workers; but which is true is not immediately obvious.<sup>2</sup>

In fact, there is a large theoretical literature which asks whether migrants are more likely to be skilled or unskilled, but this literature tends not to be located within standard HO trade models. For example, Katz and Stark (1984) argue that asymmetric information can lead to migration flows disproportionately involving unskilled workers, since employers in rich countries may not be able to correctly discern the skill levels of potential migrants; although the equilibrium outcome can change if various devices reinstating informational symmetry are employed (Katz and Stark 1987). While appealing, it is not clear to us how this theory could be empirically tested with the data at our disposal.

An alternative theory 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

---

<sup>2</sup> Furthermore, it is no longer the case that trade and factor flows are necessarily substitutes: they could instead be complements. For example, Markusen (1983) shows that technological differences between countries can lead to trade and factor mobility being complements; while in the context of a three-factor model such as the specific factors model, trade and factor mobility can be either substitutes or complements (O'Rourke and Williamson 1999, Chapter 13).

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. We have:

**Prediction 3:** the impact of skills on anti-immigrant sentiment should be related to a country's level of inequality. In the most unequal countries, being high-skilled should have a positive impact on anti-immigrant sentiment. In the most equal countries, being high-skilled should have a negative impact on anti-immigrant sentiment. More generally, an interaction term between skills and inequality should enter with a positive sign in a regression explaining anti-immigrant sentiment.<sup>3</sup>

### **Section 3. Data<sup>4</sup>**

What do we need to accomplish our objectives? We need a data set that provides information on individuals' attitudes towards immigration, socio-economic position, socio-demographic characteristics and political attitudes. Since the Borjas and HO models predict that skill levels will have different

---

<sup>3</sup> In principle, self-selection should depend not only on income distribution within host countries, but on the relationship between host country and source country income distribution. A complete test of the Borjas theory would thus involve calculating source country distributions for each host country. In this paper we make the simplifying assumption that source country distributions are sufficiently similar for all host countries that self-selection varies across host countries based on differences in host country distributions alone.

<sup>4</sup> This section largely draws on O'Rourke and Sinnott (2001).

implications for trade 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 twenty-four countries in 1995-96. The countries concerned 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 Phillipines, Japan, Spain, Latvia and Slovakia.<sup>5</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 Phillipines, Japan, Latvia and Slovakia).

The data set also provides individual-level measures of a range of demographic, socio-economic and political variables. Among the socio-economic variables, the most valuable from the point of view of

---

<sup>5</sup> Full details on the ISSP consortium, including details on participating institutions, procedures, availability of datasets and technical reports can be obtained at <http://www.issp.org/info.htm>

testing the implications of the 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 labor 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>6</sup>

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>7</sup> 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 rationale behind including the international mobility variable is that people who view themselves as potential emigrants may see migration as an opportunity rather than as a threat. Alternatively, 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 willingness to move again, as well as familiarity with foreigners. In addition, we have information on respondents’ age; their gender; their religion; on whether they and their parents are native born or not; on their marital status; and on a variety of other personal characteristics and attitudes.

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

---

<sup>6</sup> The three countries omitted when estimating models involving skill are Italy, Japan, and Sweden.

<sup>7</sup> Details available on request.

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 factors or underlying dimensions of nationalist attitudes. As can be seen from the rotated factor loadings in Table 2, the first factor is a straightforward preference for and sense of the superiority of one’s own country (here labelled patriotism). The second factor 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 the basis of this analysis, patriotism and chauvinism scores have been calculated by averaging responses across the

relevant subsets of items identified in the factor analysis.<sup>8</sup>

#### Section 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). The first equation shows 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 confirms the importance of ideology in determining attitudes towards globalization, a key result which O’Rourke and Sinnott (2001) obtained when analyzing attitudes towards trade. It is not the case, according to these results, that economics alone shapes voters’ preferences regarding international economic integration. To this extent, these results are inconsistent with those obtained by Timmer and Williamson for the late 19<sup>th</sup> century; although it should be stressed that the results are not strictly speaking comparable, since Timmer and Williamson analyze the determinants of policy outcomes rather than of preferences.

Equation (2) tests the unconditional version of *Prediction 1*, and the results are not favorable to Heckscher-Ohlin theory: the coefficient on the interaction term between Skill345 and GDP per capita is negative, as expected, but the effect is statistically insignificant. Similarly, equation (3) tests the unconditional version of *Prediction 3*, and again the results are disappointing for the Borjas self-selection theory. The coefficient on an interaction term between Skill345 and the Gini coefficient is positive, as expected, but again insignificant. In this equation, the coefficient on high skills becomes negative, 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 (2001a) for the US, holds good for all remaining

---

<sup>8</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.

specifications (although the coefficient is insignificant at conventional levels in equation (4)). However, as stressed earlier it is the interaction terms between Skill345 and GDP per capita and inequality that are crucial for testing the hypotheses developed earlier.

Equation (4) tests a conditional version of *Prediction 1*, and this time the results are favorable. Controlling for international differences in income distribution the interaction term between Skill345 and GDP per capita is negative and statistically significant, just as theory predicts. Moreover, controlling for international income differentials, the interaction term between Skill345 and the Gini coefficient becomes more positive, although it remains statistically insignificant in this specification, with a p-value of 0.135. The conditional version of *Prediction 3* is however confirmed when further individual-level control variables are added in equations (5) and (6), with the interaction effect between Skill345 and the Gini coefficient becoming positive and statistically significant (although the coefficient on the interaction term between Skill345 and GDP per capita becomes statistically insignificant at conventional levels in equation 6 (with a p-value of 0.121).

How strong are these effects? Taking the specification in equation (5), and setting all the explanatory variables equal to their median values, yields an expected probability of the most anti-immigrant response of 48.7%. 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 3.2% at a per capita income of \$5000, but by 5.8% at per capita incomes of \$15000, and by 8.4% at per capita incomes of \$25000. Assuming that per capita income is held constant, at its median value for this sample of countries of \$19270, being high-skilled reduces the expected probability of the most anti-immigrant response by 8.8% when the Gini coefficient is 25, by 5.9% when the Gini coefficient is 35, and by only 3.1% when the Gini coefficient is 45. The net impact of being high-skilled is positive for Gini coefficients of 56 and



over. The results are thus economically as well as statistically significant.<sup>9</sup>

National mobility is unrelated to attitudes to globalization, but a stated willingness to move internationally, or a history of such mobility, reduces the probability that a respondent will express anti-immigrant opinions. Both natives and the children of natives are more anti-immigrant, as are older people. Being a woman or a Roman Catholic does not have a statistically significant impact on preferences; neither does being unemployed, which seems surprising.

Finally, equation (6) tests *Prediction 2*, by including ‘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 (although, as noted above, the interaction term between Skill345 and GDP per capita becomes statistically insignificant).

Another approach to testing the Heckscher-Ohlin and self-selection theories is to run a series of regressions explaining attitudes towards immigration in individual countries, and compare the coefficients on Skill345 across countries. Appendix Table 1 gives the results of doing this using the specification in equation (5) (without country dummies or the two interaction terms). Figure 1 plots the resultant coefficients on Skill345 for each country, against that country’s level of GDP per capita. As can be seen, support for the HO predictions is in this case unclear. There is indeed a 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 impact of skills on anti-immigrant attitudes is actually positive. However, for the richer countries in the sample the relationship is unclear. The overall correlation

---

<sup>9</sup> These results were calculated using the CLARIFY programme described in Tomz, Wittenberg and King (1999) and King, Tomz and Wittenberg (2000).

between the two variables is -0.343. This methodology provides stronger evidence for the Borjas theory: Figure 1 shows a positive relationship between the Skill345 coefficient and the Gini coefficient (with a correlation of 0.401).

Of course, Figure 1 just plots the bivariate relationship between the Skill345 coefficient and GDP per capita; while the regressions in Table 3 control for a simultaneous relationship between the Skill345 coefficient and inequality. It appears that the evidence for the predictions of Heckscher-Ohlin theory is weak when the unconditional version of that theory is tested; however, conditional on other factors the predictions of the theory hold up well. The Borjas theory does better than factor proportions theory when tested unconditionally, but does even better yet when tested conditional on other factors.

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 discussion of the Heckscher-Ohlin and Borjas theories 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 5 of Table 3, but which split the sample into two groups: those in the labour force, and those outside it. 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). By contrast, the coefficients on patriotism and chauvinism are almost as big for non-labour force participants as for those in the labour force; while the age effect uncovered in Table 3 seems only to hold for non-labour force participants. These results are all consistent with the hypothesis that labour force participants' attitudes are shaped by economic as well as non-economic factors, and that the Heckscher-Ohlin and Borjas findings of Table 3 indeed reflect the

workings of labour markets; while the attitudes of non-labour force participants are more determined by non-economic factors.

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. Most strikingly, the coefficient on skills is extremely large in the west, but insignificant in the east, consistent with Heckscher-Ohlin theory. Within the two blocks, the Borjas theory shows up in the western sample but not the eastern one; while the Heckscher-Ohlin effect shows up in the eastern sample but not the western one (consistent with Figure 1).

Table 5 shows the results of a series of ordered probit regressions explaining attitudes towards refugees, rather than immigrants in general. The dependent variable, anti-refugee, is an ordered variable running from 1 (agree strongly with the statement that refugees should be allowed to stay in the country) to 5 (disagree strongly). Results are given for the entire sample, as well as for labour force participants and non-participants, and for the west and eastern Europe. As can be seen in column (2), the low-skilled are more anti-refugee than the high-skilled when only labour force participants are considered; however, this effect is constant across countries since both interaction terms involving skills are statistically insignificant. Thus, the Heckscher-Ohlin and Borjas results do not carry over when only refugees are being considered by respondents; indeed, column 3 shows that among non-labor force participants, these interaction effects actually have the wrong sign. These results are consistent with a belief among labour market participants that refugees are low-skilled (although in fact this may not necessarily be the case), in which case it is the low-skilled who should be most opposed to their presence in all countries. The only support for a Heckscher-Ohlin effect comes from a comparison between columns 4 and 5, which show

that the low-skilled are very much more anti-refugee in the west, but not in the poorer east.

Finally, Table 6 looks again at *Prediction 2*, and tackles one possible objection to the results in Table 3, which is that ‘protectionism’ is not an exogenous variable, but rather an endogenous variable determined by the same forces as ‘anti-immigrant’. Table 6 therefore presents the results of seemingly unrelated bivariate probit regressions explaining attitudes towards both trade and immigration. It estimates two regressions with the same explanatory variables as before, but allows the disturbance terms in both regressions to be correlated with each other.<sup>10</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 *Prediction 2* in that ‘rho’ is strongly positive. *Predictions 1 and 3* are also confirmed, in that the interaction terms between ‘Skill345’ and GDP per capita are negative, while the interaction term between ‘Skill345’ and the Gini coefficient in equation (2) is positive, albeit insignificant at conventional levels (with a p-value of 0.154). Broadly speaking the results are similar to those obtained earlier.<sup>11</sup>

---

<sup>10</sup> See Greene (2000), pp. 849-856. The interaction term between Skill345 and the Gini coefficient is omitted from the equation explaining protectionism, since this interaction term tests the Borjas self-selection theory of migration. As the discussion in Section 2 indicated, however, the Heckscher-Ohlin interaction term between skills and GDP per capita does belong in the protectionism equation.

<sup>11</sup> It is important to note that Mayda (2003) has recently and independently arrived at similar conclusions to these, using the same data set, as well as the World Values Survey, but employing many additional individual- and country-level variables to test the basic Heckscher-Ohlin predictions. 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 favorable for factor proportions theory than ours, even though she does not correct for differences in inequality across countries. The findings in this section regarding Heckscher-Ohlin theory thus appear to be robust.

## **Section 6. Conclusions**

There are three main conclusions of this paper. The first is that attitudes towards immigration are not a function of economic interests alone; rather, they also reflect nationalist sentiment among respondents. 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.

The second conclusion is that for labour market participants, standard economic theory does a good job of 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, consistent with Heckscher-Ohlin theory; and in more equal countries than in more unequal ones (consistent with the Borjas theory of immigrant self-selection). On the other hand, non-economic factors are much more important in determining the attitudes of those not in the labour force.

## References

- Barro, Robert J. and Jong-Wha Lee. 2000. "International data on educational attainment: updates and implications," *Harvard Center for International Development Working Paper* No. 42. (Cambridge MA: April). Data available at <http://www.cid.harvard.edu/ciddata/ciddata.html>
- Borjas, George J. 1987. "Self-Selection and the Earnings of Immigrants." *American Economic Review* 77: 531-553.
- Borjas, George J. 1995. "The Economic Benefits From Immigration," *Journal of Economic Perspectives* 9: 3-22.
- Borjas, George J. 2003. "The Labor Demand Curve is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market," *NBER Working Paper* No. 9755, Cambridge, Mass. (June).
- Ganzeboom, Harry B. G. and Donald J. Treiman. 1996. "Internationally comparable measures of occupational status for the 1988 International Standard Classification of Occupations," *Social Science Research* 25: 201-239.
- Gellner, E. 1983. *Nations and Nationalism*. Oxford: Blackwell.
- Greene, William H. 2000. *Econometric Analysis*. London: Prentice-Hall.
- Hamilton, Bob and John Whalley. 1984. "Efficiency and Distributional Implications of Global Restrictions on Labour Mobility: Calculations and Policy Implications," *Journal of Development Economics* 14: 61-75.
- I.L.O. 1990. *International Standard Classification of Occupations: ISCO-88*. Geneva: International Labour Organization.
- Katz, Eliakim and Oded Stark. 1984. "Migration and Asymmetric Information: Comment." *American Economic Review* 74: 533-534.
- Katz, Eliakim and Oded Stark. 1987. "International Migration Under Asymmetric Information." *Economic Journal* 97: 718-726.

- King, Gary, Michael Tomz and Jason Wittenberg. 2000. "Making the Most of Statistical Analyses: Improving Interpretation and Presentation." *American Journal of Political Science* 44: 341-355.
- Markusen, James R. 1983. "Factor Movements and Commodity Trade as Complements." *Journal of International Economics* 13: 341-56.
- Mayda, Anna Maria. 2003. "Who is Against Immigration? A Cross-Country Investigation of Individual Attitudes Towards Immigrants." Mimeo, Harvard University, January.
- Mayda, Anna Maria and Dani Rodrik. 2001. "Why are Some People (and Countries) More Protectionist than Others?" *NBER Working Paper* No. 8461. Cambridge, Mass., September.
- Mundell, Robert A. 1957. "International Trade and Factor Mobility." *American Economic Review* 47: 321-35.
- O'Rourke, Kevin H. and Richard Sinnott. 2001. "What determines attitudes towards protection? Some cross-country evidence." In Susan M. Collins and Dani Rodrik (eds.), *Brookings Trade Forum 2001*. Washington DC: Brookings Institute Press: 157-206.
- O'Rourke, Kevin H. and Jeffrey G. Williamson. 1999. *Globalization and History: The Evolution of a Nineteenth Century Atlantic Economy*. Cambridge, MA: MIT Press.
- Rodrik, Dani. 1995. "Political economy of trade policy," in G.M. Grossman and K. Rogoff, eds., *Handbook of International Economics Vol. 3* (Amsterdam: North Holland).
- Roy, A.D. 1951. "Some Thoughts on the Distribution of Earnings." *Oxford Economic Papers* 3: 135-46.
- Scheve, Kenneth F. and Matthew J. Slaughter. 2001a. "Labour Market Competition and Individual Preferences Over Immigration Policy." *Review of Economics and Statistics* 83: 133-145.
- Scheve, Kenneth F. and Matthew J. Slaughter. 2001b. "What Determines Individual Trade-Policy Preferences?" *Journal of International Economics* 54: 267-292.

Timmer, Ashley and Jeffrey G. Williamson. 1998. "Immigration Policy Prior to the Thirties: Labor Markets, Policy Interactions and Globalization Backlash," *Population and Development Review* 24: 739-71.

Tomz, Michael, Jason Wittenberg and Gary King. 1999. "CLARIFY: Software for interpreting and presenting statistical results. Version 1.1.1." Cambridge, Mass., Harvard University, June 1. Available at <http://gking.harvard.edu/>

United Nations. 2002. *International Migration Report 2002*, New York: United Nations.



**Table 1. Average sentiment regarding immigrants and refugees**

Country	Anti-immigrant		Anti-refugee		
	Mean	Std. Dev.	Mean	Rank	Std. Dev.
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
Phillippines	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

**Table 2. Factor 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	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	-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
<b>Percent variance</b>	<b>26.34</b>	<b>24.50</b>

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

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

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

	(1)	(2)	(3)	(4)	(5)	(6)
Patriotism	0.1090*** [0.0193]	0.1063*** [0.0195]	0.1052*** [0.0195]	0.1060*** [0.0194]	0.0874*** [0.0146]	0.0686*** [0.0142]
Chauvinism	0.3606*** [0.0461]	0.3503*** [0.0452]	0.3517*** [0.0452]	0.3505*** [0.0453]	0.3307*** [0.0484]	0.2939*** [0.0471]
Skill345		-0.0549 [0.0705]	-0.3340* [0.1723]	-0.2643 [0.1767]	-0.2746* [0.1619]	-0.3015* [0.1539]
Skill345*GDPCAP		-0.0060 [0.0047]		-0.0071* [0.0041]	-0.0066* [0.0038]	-0.0059 [0.0038]
Skill345*Inequality			0.0056 [0.0052]	0.0070 [0.0047]	0.0072* [0.0042]	0.0082** [0.0041]
National mobility					-0.0236 [0.0185]	-0.0221 [0.0185]
International mobility					-0.0751** [0.0297]	-0.0627** [0.0307]
Never lived abroad					0.1239*** [0.0274]	0.1108*** [0.0277]
Native					0.1563** [0.0650]	0.1578** [0.0665]
Native parents					0.1849** [0.0726]	0.1867*** [0.0688]
Age					0.0066*** [0.0022]	0.0060*** [0.0023]
Age squared					-0.0000** [0.0000]	-0.0000* [0.0000]
Female					0.0484* [0.0264]	0.0222 [0.0250]
Married					0.0068 [0.0205]	0.0052 [0.0204]
Catholic					-0.0235 [0.0409]	-0.0278 [0.0409]
Unemployed					0.0384 [0.0487]	0.0284 [0.0487]
Protectionism						0.1218*** [0.0115]
Cut1	-1.0700*** [0.1347]	-1.1354*** [0.1311]	-1.1659*** [0.1252]	-1.1557*** [0.1262]	-0.7094*** [0.1384]	-0.4971*** [0.1423]
Cut2	-0.3720*** [0.1356]	-0.4369*** [0.1318]	-0.4674*** [0.1248]	-0.4570*** [0.1268]	0.0006 [0.1302]	0.2165 [0.1377]
Cut3	0.8796*** [0.1293]	0.8176*** [0.1278]	0.7867*** [0.1206]	0.7976*** [0.1227]	1.2865*** [0.1398]	1.5122*** [0.1454]
Cut4	1.6979*** [0.1426]	1.6378*** [0.1411]	1.6069*** [0.1341]	1.6179*** [0.1365]	2.1144*** [0.1457]	2.3470*** [0.1518]
No. of observations	26484	26484	26484	26484	24382	24349
Log likelihood	-32707.20	-32660.46	-32661.54	-32657.10	-29775.11	-29574.14
Pseudo-R-squared	0.07	0.07	0.07	0.07	0.08	0.08

Robust standard errors in brackets assume clustering at country level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Country dummy variables included; coefficients not reported.

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

	(1)	(2)	(3)	(4)
Sample	In labour force	Not in labour force	West	Eastern Europe
Patriotism	0.0908*** [0.0189]	0.0823*** [0.0147]	0.0980*** [0.0229]	0.0781*** [0.0194]
Chauvinism	0.3372*** [0.0505]	0.3144*** [0.0477]	0.4422*** [0.0529]	0.1682*** [0.0358]
Skill345	-0.3176* [0.1704]	-0.2143 [0.2775]	-0.7205*** [0.2347]	-0.0019 [0.1147]
Skill345*GDPCAP	-0.0086* [0.0046]	-0.0045 [0.0047]	-0.0012 [0.0116]	-0.0182** [0.0082]
Skill345*Inequality	0.0089** [0.0045]	0.0052 [0.0081]	0.0179*** [0.0055]	-0.0001 [0.0023]
National mobility	-0.0439** [0.0213]	0.0084 [0.0334]	-0.0481*** [0.0165]	0.0245 [0.0481]
International mobility	-0.0716** [0.0348]	-0.0770* [0.0410]	-0.1024*** [0.0321]	0.0505 [0.0351]
Never lived abroad	0.1464*** [0.0366]	0.0878* [0.0480]	0.1189*** [0.0386]	0.0906** [0.0365]
Native	0.1498** [0.0712]	0.1697* [0.0925]	0.0798 [0.0734]	0.3779*** [0.0925]
Native parents	0.1762** [0.0776]	0.1940** [0.0832]	0.1584* [0.0920]	0.3022*** [0.1134]
Age	-0.0005 [0.0061]	0.0152*** [0.0029]	0.0081*** [0.0025]	0.0039 [0.0042]
Age squared	0.0000 [0.0001]	-0.0001*** [0.0000]	-0.0001*** [0.0000]	0 [0.0000]
Female	0.0346 [0.0296]	0.0686** [0.0292]	0.0553 [0.0347]	0.0628 [0.0440]
Married	0.0226 [0.0299]	-0.0141 [0.0207]	0.0237 [0.0267]	-0.018 [0.0233]
Catholic	-0.0013 [0.0463]	-0.0590 [0.0507]	-0.1005* [0.0523]	0.0478 [0.0343]
Unemployed	0.0234 [0.0491]		0.0068 [0.0421]	0.0382 [0.0895]
Cut1	-0.9099*** [0.1723]	-0.4646*** [0.1591]	0.6739*** [0.1997]	-0.6212*** [0.1981]
Cut2	-0.1641 [0.1483]	0.1915 [0.1503]	1.4628*** [0.1881]	-0.1051 [0.1817]
Cut3	1.1257*** [0.1404]	1.4771*** [0.1624]	2.7809*** [0.2008]	1.2381*** [0.2355]
Cut4	1.9547*** [0.1365]	2.3069*** [0.1734]	3.6574*** [0.2138]	2.0164*** [0.2136]
No. of observations	14369	10013	15669	7569
Log likelihood	-17696.13	-12043.60	-19164.81	-8765.48
Pseudo-R-squared	0.08	0.08	0.09	0.05

Robust standard errors in brackets assume clustering at country level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Country dummy variables included; coefficients not reported.

**Table 5. Determinants of attitudes towards refugees (ordered probit)**  
(dependent variable: anti-refugee)

	(1)	(2)	(3)	(4)	(5)
Sample	All	In labour force	Not in labour force	West	East
Patriotism	0.0411*** [0.0159]	0.0477** [0.0185]	0.0279 [0.0193]	0.0346 [0.0230]	0.0595*** [0.0209]
Chauvinism	0.2848*** [0.0428]	0.3014*** [0.0457]	0.2575*** [0.0425]	0.3966*** [0.0448]	0.1165*** [0.0296]
Skill345	-0.1226 [0.1105]	-0.1942* [0.1121]	0.0868 [0.2429]	-0.5428** [0.2127]	-0.0662 [0.0860]
Skill345*GDPCAP	-0.0005 [0.0026]	-0.0046 [0.0030]	0.0131*** [0.0041]	0.0028 [0.0099]	0.0050 [0.0043]
Skill345*Inequality	-0.0002 [0.0028]	0.0039 [0.0029]	-0.0145** [0.0073]	0.0107 [0.0068]	-0.0038** [0.0016]
National mobility	-0.0557*** [0.0188]	-0.0446* [0.0259]	-0.0739*** [0.0219]	-0.0773*** [0.0200]	-0.0249 [0.0389]
International mobility	-0.1017*** [0.0249]	-0.0763*** [0.0260]	-0.1471*** [0.0324]	-0.1086*** [0.0324]	-0.0719 [0.0572]
Never lived abroad	0.0994*** [0.0260]	0.1253*** [0.0270]	0.0557 [0.0438]	0.0907** [0.0363]	0.0788* [0.0425]
Native	0.1055 [0.0779]	0.1079* [0.0639]	0.1012 [0.1095]	0.0262 [0.0970]	0.2696*** [0.0752]
Native parents	0.0347 [0.0526]	0.0136 [0.0555]	0.0645 [0.0755]	0.0765 [0.0703]	-0.0431 [0.0893]
Age	0.0031 [0.0024]	-0.0091* [0.0050]	0.0117*** [0.0030]	0.0039 [0.0033]	0.0022 [0.0036]
Age squared	-0.0001** [0.0000]	0.0001 [0.0001]	-0.0001*** [0.0000]	-0.0001* [0.0000]	-0.0001 [0.0000]
Female	-0.0039 [0.0279]	-0.0164 [0.0292]	0.0184 [0.0286]	-0.0368 [0.0397]	0.0621* [0.0347]
Married	0.0365* [0.0198]	0.0588*** [0.0201]	0.0063 [0.0295]	0.0584* [0.0304]	0.0014 [0.0186]
Catholic	0.0143 [0.0233]	0.0163 [0.0294]	0.0079 [0.0375]	-0.0125 [0.0287]	0.0338 [0.0335]
Unemployed	0.0215 [0.0331]	0.0083 [0.0313]		0.0172 [0.0439]	0.0020 [0.0457]
Cut1	-0.3138*** [0.0900]	-0.5422*** [0.1170]	-0.1502 [0.1309]	0.1218 [0.1149]	-0.4856*** [0.1551]
Cut2	0.8385*** [0.1095]	0.6166*** [0.1303]	1.0013*** [0.1363]	1.3617*** [0.1338]	0.5169*** [0.1631]
Cut3	1.5092*** [0.1182]	1.2852*** [0.1343]	1.6801*** [0.1455]	2.0667*** [0.1398]	1.1398*** [0.1658]
Cut4	2.2339*** [0.1279]	2.0148*** [0.1555]	2.4021*** [0.1461]	2.7785*** [0.1427]	1.8195*** [0.1902]
No. of observations	25422	15115	10307	16107	8162
Log likelihood	-36003.65	-21301.86	-14635.70	-22044.89	-12127.10
Pseudo-R-squared	0.07	0.08	0.07	0.07	0.05

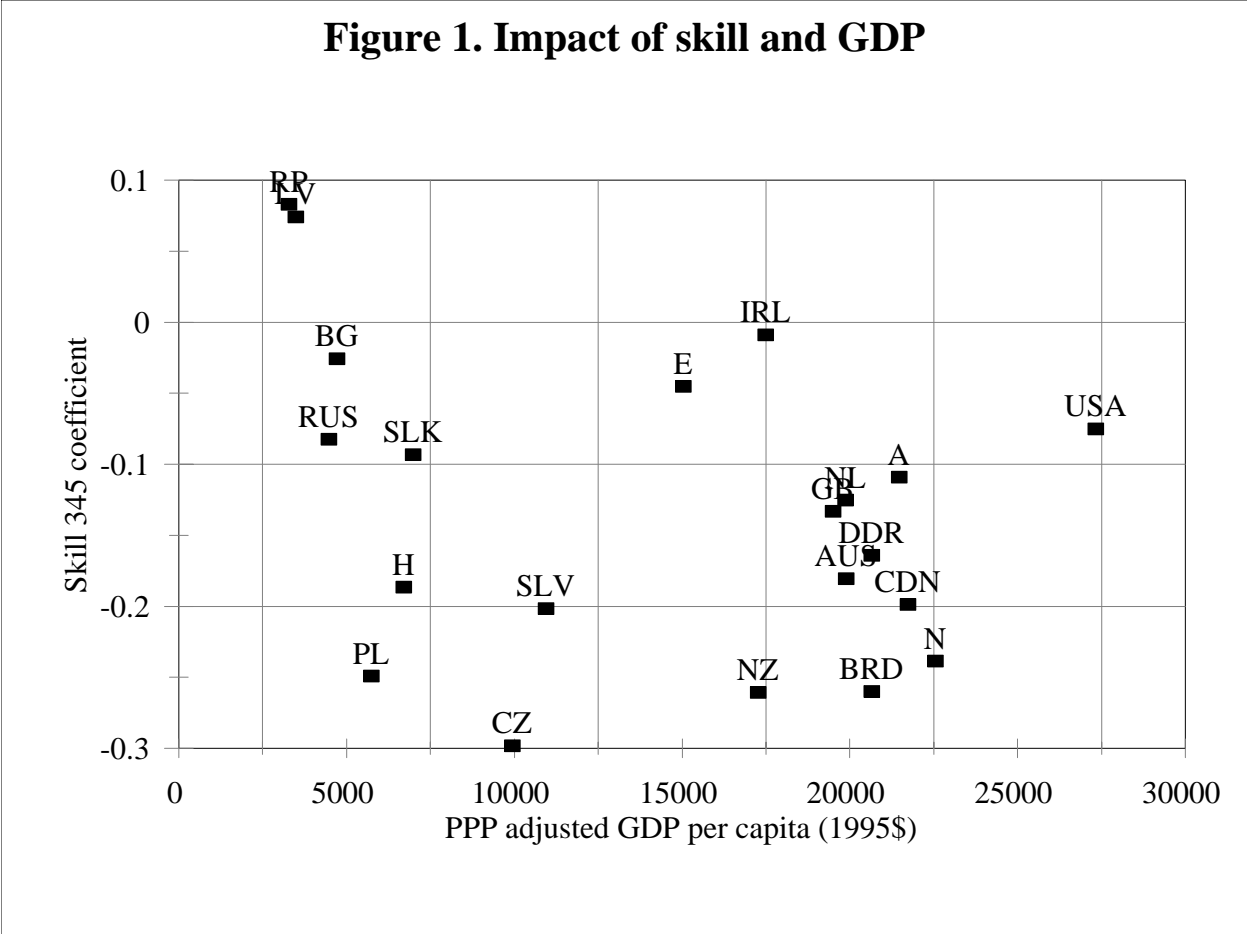
Robust standard errors in brackets assume clustering at country level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Country dummy variables included; coefficients not reported.

**Table 6. Determinants of anti-globalization preferences**  
(seemingly unrelated bivariate probit)

Dependent variable	(1) Highly protectionist	(2) Highly anti-immigrant
Patriotism	0.19152*** [0.02031]	0.08772*** [0.02037]
Chauvinism	0.36136*** [0.02528]	0.38800*** [0.04692]
Skill345	0.03990 [0.07152]	-0.2086 [0.17127]
Skill345*GDPCAP	-0.01374*** [0.00394]	-0.00917** [0.00376]
Skill345*Inequality		0.00569 [0.00399]
National mobility	-0.03239 [0.02085]	-0.00455 [0.01657]
International mobility	-0.00246 [0.02928]	0.02777 [0.02616]
Never lived abroad	0.04579 [0.03008]	0.0489 [0.03430]
Native	0.08425 [0.07771]	0.20550** [0.08936]
Native parents	-0.06194 [0.06789]	0.21724*** [0.07857]
Age	0.01541*** [0.00447]	0.01808*** [0.00297]
Age squared	-0.00013*** [0.00004]	-0.00016*** [0.00003]
Female	0.10829*** [0.02501]	-0.02237 [0.02082]
Married	0.01291 [0.01779]	-0.01405 [0.02120]
Catholic	0.05428** [0.02304]	-0.00584 [0.02878]
Unemployed	0.10429*** [0.03792]	0.08990* [0.05375]
Constant	-2.79828*** [0.15133]	-2.73641*** [0.15821]
No. of observations	27683	27683
Log likelihood		-27489
Rho [standard error of rho]		.2171996 [0.013274]
Wald test of rho = 0	chi2(1) = 251.006	Prob > chi2 = 0.0000

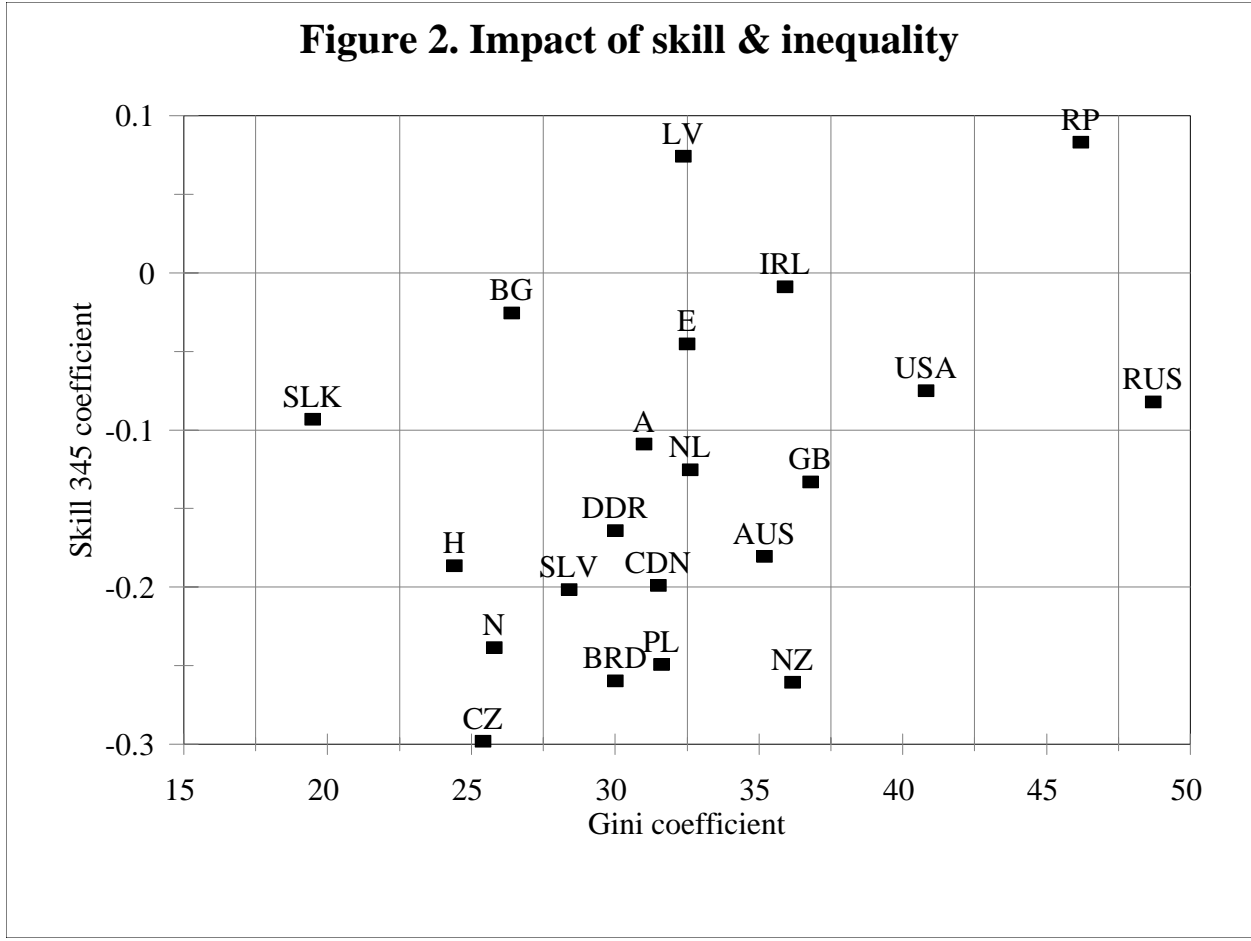
Robust standard errors in brackets assume clustering at country level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Country dummy variables included; coefficients not reported.

**Figure 1. Impact of skill and GDP**



Source: see text.

**Figure 2. Impact of skill & inequality**



Source: see text.



**Appendix Table 1. Country-specific regressions: anti-immigration**

	(1)	(2)	(3)	(4)	(5)	(6)
	Australia	West Germany	East Germany	Great Britain	USA	Austria
Patriotism	0.16911*** [0.04216]	0.12647** [0.05576]	0.15893* [0.08534]	0.09900 [0.06279]	0.14712** [0.05786]	0.06338 [0.05389]
Chauvinism	0.44982*** [0.03538]	0.56896*** [0.05601]	0.48908*** [0.07648]	0.58406*** [0.05986]	0.20950*** [0.04638]	0.42313*** [0.05300]
Skill345	-0.18022*** [0.05330]	-0.25948*** [0.09255]	-0.16365 [0.14036]	-0.13265 [0.08645]	-0.07478 [0.07106]	-0.10877 [0.09996]
National mobility	0.02237 [0.05514]	0.03629 [0.08783]	0.07002 [0.12248]	-0.05445 [0.08888]	0.00675 [0.08328]	-0.20660** [0.08512]
International mobility	-0.00298 [0.06761]	-0.20279** [0.09680]	0.13269 [0.18228]	-0.10205 [0.10496]	-0.31669*** [0.09503]	-0.21891* [0.12534]
Never lived abroad	0.24300*** [0.06356]	-0.00193 [0.10808]	0.33817 [0.21750]	0.03145 [0.09705]	0.11709 [0.08765]	0.02144 [0.11455]
Native	0.00294 [0.14369]	0.15722 [0.30761]	-0.36466 [0.85602]	0.03972 [0.26466]	-0.29696 [0.23991]	-0.15169 [0.30582]
Native parents	0.00761 [0.13324]	0.40997 [0.27729]	0.06330 [0.71703]	0.14416 [0.25205]	0.68860*** [0.22156]	0.20901 [0.27647]
Age	-0.01578 [0.01124]	0.01984 [0.01511]	-0.01201 [0.02377]	0.02289* [0.01356]	0.01772 [0.01167]	0.01709 [0.01314]
Age squared	0.00009 [0.00011]	-0.00022 [0.00015]	0.00011 [0.00025]	-0.00022* [0.00013]	-0.00016 [0.00012]	-0.00018 [0.00013]
Female	0.20915*** [0.05201]	0.06798 [0.07711]	-0.00993 [0.11171]	-0.11786 [0.08026]	0.10914 [0.06817]	-0.02831 [0.07438]
Married	0.06594 [0.06276]	0.10188 [0.09338]	0.10298 [0.13831]	0.11756 [0.08464]	0.01982 [0.06935]	-0.04539 [0.08414]
Catholic	-0.22994*** [0.06123]	0.00762 [0.07735]	0.10961 [0.31225]	-0.11248 [0.13227]	-0.12328 [0.07871]	-0.15872 [0.09740]
Unemployed	0.00931 [0.16079]	0.42256 [0.30068]	0.11990 [0.18533]	-0.01022 [0.16626]	-0.26910 [0.18407]	-0.32069* [0.18792]
Cut1	-0.65854** [0.31792]	-0.23090 [0.39908]	-1.14443 [0.75797]	0.24454 [0.40505]	0.04594 [0.36431]	-0.88005** [0.39941]
Cut2	0.25588 [0.31315]	0.64485* [0.37641]	-0.64952 [0.73849]	0.85273** [0.39346]	0.58543 [0.35940]	-0.15082 [0.38331]
Cut3	1.31030*** [0.31323]	2.04715*** [0.37628]	0.76161 [0.73061]	2.39580*** [0.39831]	1.67540*** [0.36026]	1.68632*** [0.38356]
Cut4	2.23283*** [0.31515]	2.89508*** [0.37991]	1.52571** [0.73191]	3.15928*** [0.40220]	2.50303*** [0.36369]	2.43639*** [0.38607]
No. of observations	1831	963	478	870	1074	927
Log likelihood	-2322.91	-970.49	-462.17	-959.05	-1381.60	-1061.30
Pseudo-R-squared	0.08	0.13	0.09	0.10	0.05	0.07

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

**Appendix Table 1. Country-specific regressions: anti-immigration (continued)**

	(7)	(8)	(9)	(10)	(11)	(12)
	Hungary	Italy	Ireland	Netherlands	Norway	Sweden
Patriotism	0.07861 [0.05684]	0.08609* [0.04761]	-0.03425 [0.05910]	0.03307 [0.03863]	0.13405*** [0.05198]	0.08223* [0.04926]
Chauvinism	0.09088* [0.05135]	0.38009*** [0.05414]	0.26212*** [0.05983]	0.69693*** [0.04125]	0.64514*** [0.04551]	0.71788*** [0.04824]
Skill345	-0.18601** [0.09114]		-0.00845 [0.08645]	-0.12491** [0.05757]	-0.23832*** [0.06618]	
National mobility	0.02755 [0.08996]	-0.07219 [0.08001]	-0.23952*** [0.08792]	-0.04184 [0.05965]	-0.03268 [0.06945]	0.00167 [0.07679]
International mobility	0.02420 [0.14167]	-0.00761 [0.09258]	-0.05138 [0.11186]	-0.10149 [0.06762]	-0.20683** [0.08722]	-0.11991 [0.08617]
Never lived abroad	0.13013 [0.16019]	0.07508 [0.11423]	0.13559 [0.08430]	0.00926 [0.07741]	-0.08380 [0.07889]	0.01529 [0.09184]
Native	0.44728 [0.37698]	-0.18639 [0.52814]	-0.20266 [0.30151]	0.08225 [0.25312]	0.35683 [0.24627]	-0.62237** [0.27857]
Native parents	-0.03294 [0.33841]	-0.66289** [0.32689]	0.00643 [0.24500]	0.55404*** [0.20738]	0.23907 [0.20137]	0.66484** [0.25933]
Age	0.00146 [0.01291]	-0.01006 [0.01590]	-0.02420 [0.01494]	0.00524 [0.01013]	0.00721 [0.01140]	0.00879 [0.01385]
Age squared	0.00000 [0.00013]	0.00013 [0.00017]	0.00028* [0.00015]	-0.00003 [0.00011]	-0.00007 [0.00012]	-0.00016 [0.00015]
Female	0.13164* [0.07900]	0.08084 [0.07098]	0.01605 [0.07560]	0.01228 [0.05364]	-0.08505 [0.06130]	0.02052 [0.06763]
Married	0.02673 [0.08060]	0.07759 [0.08930]	0.06464 [0.08643]	0.17115*** [0.06324]	-0.18302** [0.07409]	0.04127 [0.07753]
Catholic	-0.02217 [0.08255]	0.07053 [0.16076]	0.41109*** [0.15282]	0.12860* [0.06802]	0.17221 [0.48278]	0.79884* [0.47880]
Unemployed	0.12789 [0.14805]	0.07113 [0.22370]	0.07424 [0.14547]	-0.19162 [0.13805]	0.15711 [0.17759]	-0.00865 [0.13118]
Cut1	-1.23544*** [0.47513]	-1.89300*** [0.59500]	-1.54398*** [0.48341]	0.13368 [0.30258]	0.15771 [0.34988]	0.20744 [0.38164]
Cut2	-0.97484** [0.46584]	-1.29685** [0.58605]	-0.40806 [0.47766]	1.02205*** [0.29168]	1.14887*** [0.34041]	0.78438** [0.37686]
Cut3	0.22506 [0.45635]	-0.10634 [0.58316]	1.32354*** [0.47886]	2.60473*** [0.29424]	2.52499*** [0.34301]	1.96774*** [0.37728]
Cut4	1.00803** [0.45711]	0.81077 [0.58359]	2.04697*** [0.48167]	3.64598*** [0.29848]	3.50187*** [0.34738]	2.94868*** [0.38105]
No. of observations	937	1033	885	1744	1311	1105
Log likelihood	-939.29	-1169.78	-1004.79	-1962.22	-1515.48	-1275.69
Pseudo-R-squared	0.01	0.05	0.03	0.12	0.13	0.12

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

**Appendix Table 1. Country-specific regressions: anti-immigration (continued)**

	(13)	(14)	(15)	(16)	(17)	(18)
	Czech Rep.	Slovenia	Poland	Bulgaria	Russia	New Zealand
Patriotism	0.13404** [0.05470]	0.13650** [0.05692]	0.15439** [0.06637]	0.07865 [0.05687]	0.05616 [0.04437]	0.16221*** [0.05936]
Chauvinism	0.18948*** [0.05177]	0.33892*** [0.05546]	0.13378* [0.06849]	0.00298 [0.06732]	0.11773*** [0.04503]	0.35354*** [0.05168]
Skill345	-0.29789*** [0.08299]	-0.20132** [0.08757]	-0.24886** [0.10058]	-0.02521 [0.10126]	-0.08189 [0.08920]	-0.26017*** [0.08666]
National mobility	0.12011 [0.08170]	0.10170 [0.08401]	-0.01074 [0.09045]	-0.37268*** [0.10049]	0.07293 [0.08603]	-0.01627 [0.08490]
International mobility	-0.18177 [0.12912]	0.08298 [0.12250]	0.12080 [0.11263]	0.24535** [0.11916]	0.03809 [0.11148]	-0.22544** [0.09283]
Never lived abroad	-0.12278 [0.12214]	0.08123 [0.09769]	0.21994* [0.13209]	-0.02969 [0.13851]	-0.05819 [0.16860]	0.15165* [0.08765]
Native	-0.00036 [0.35124]	0.21282 [0.25614]	-0.09642 [0.38615]	0.44768 [0.81370]	0.21041 [0.39801]	0.06602 [0.18840]
Native parents	0.05669 [0.23447]	0.47250** [0.22881]	0.12779 [0.31164]	0.68216** [0.32692]	0.08773 [0.33980]	0.26197 [0.17050]
Age	0.01197 [0.01528]	-0.00880 [0.01524]	0.00744 [0.01473]	0.01537 [0.01671]	-0.00499 [0.01291]	-0.00124 [0.01453]
Age squared	-0.00010 [0.00017]	0.00006 [0.00016]	0.00003 [0.00015]	-0.00006 [0.00017]	0.00008 [0.00014]	-0.00006 [0.00014]
Female	0.05340 [0.07675]	-0.18093** [0.07483]	0.21303** [0.08512]	0.27815*** [0.09089]	0.13568** [0.06850]	-0.02764 [0.07498]
Married	-0.16379* [0.09372]	-0.00413 [0.09370]	0.03524 [0.09767]	0.04345 [0.10759]	0.01117 [0.07315]	-0.00239 [0.08815]
Catholic	-0.06296 [0.08035]	0.12904 [0.09296]	0.01755 [0.12243]	-1.71805** [0.73279]	0.28302 [0.74262]	-0.33116*** [0.10438]
Unemployed	-0.10914 [0.29184]	-0.31489** [0.14691]	-0.09316 [0.14945]	0.44412*** [0.15734]	0.25498** [0.12884]	0.34287* [0.18840]
Cut1	-1.68936*** [0.49608]	-0.90106** [0.41384]	-0.26468 [0.51003]	-0.07720 [0.85648]	-1.11868** [0.43732]	-0.50459 [0.43131]
Cut2	-0.96838** [0.46369]	-0.32088 [0.38735]	0.31455 [0.50520]	0.31359 [0.85313]	-0.49163 [0.43186]	0.33818 [0.42541]
Cut3	0.44334 [0.45683]	1.59519*** [0.38544]	1.40379*** [0.50464]	1.17814 [0.85366]	0.70459 [0.43071]	1.33487*** [0.42442]
Cut4	1.23021*** [0.45804]	2.50018*** [0.38858]	2.10289*** [0.50701]	1.99809** [0.85571]	1.61427*** [0.43252]	2.27161*** [0.42769]
No. of observations	886	932	718	672	1031	848
Log likelihood	-992.49	-1028.82	-931.24	-753.32	-1360.55	-1095.52
Pseudo-R-squared	0.03	0.06	0.04	0.04	0.01	0.08

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

**Appendix Table 1. Country-specific regressions: anti-immigration (continued)**

	(19)	(20)	(21)	(22)	(23)	(24)
	Canada	Phillippines	Japan	Spain	Latvia	Slovakia
Patriotism	-0.05625 [0.04578]	0.08890* [0.05194]	0.24603*** [0.05410]	0.06490 [0.05398]	-0.03128 [0.05740]	0.02844 [0.04767]
Chauvinism	0.49631*** [0.04727]	-0.13085** [0.05864]	0.12611*** [0.04176]	0.14147** [0.05968]	0.27367*** [0.05668]	0.10933** [0.04304]
Skill345	-0.19850*** [0.07404]	0.08338 [0.15237]		-0.04489 [0.10935]	0.07444 [0.11412]	-0.09295 [0.08122]
National mobility	0.02894 [0.07955]	0.05426 [0.07093]	-0.15250** [0.07644]	-0.03444 [0.08071]	0.04834 [0.10276]	0.12473* [0.07318]
International mobility	0.01057 [0.08345]	-0.22415*** [0.07754]	-0.00582 [0.13074]	0.02644 [0.09552]	0.12334 [0.13468]	-0.01008 [0.08752]
Never lived abroad	0.24456*** [0.08125]	0.23147* [0.11941]	0.58703*** [0.15386]	-0.10172 [0.10570]	0.14601 [0.11592]	0.12282 [0.11865]
Native	0.38226** [0.16651]	0.17987 [0.41108]		-0.08184 [0.17692]	0.53180*** [0.16954]	0.74412** [0.36225]
Native parents	-0.21971 [0.14806]	-0.22154 [0.29871]	0.26512 [0.62486]	0.36768 [0.29804]	0.53756*** [0.14770]	-0.05204 [0.20362]
Age	0.01100 [0.01313]	0.01258 [0.01225]	0.00228 [0.01260]	0.01824 [0.01264]	0.02211 [0.01769]	0.02222 [0.01357]
Age squared	-0.00010 [0.00014]	-0.00013 [0.00013]	0.00006 [0.00013]	-0.00015 [0.00013]	-0.00010 [0.00020]	-0.00017 [0.00015]
Female	0.08761 [0.06854]	-0.07729 [0.06430]	0.34011*** [0.06779]	-0.03792 [0.06885]	-0.11010 [0.09025]	0.00384 [0.06752]
Married	0.00996 [0.07549]	-0.01373 [0.07844]	0.06598 [0.09684]	-0.08455 [0.08869]	-0.11317 [0.09425]	-0.04740 [0.07873]
Catholic	-0.25889*** [0.07068]	0.12812 [0.08871]	-0.95497** [0.40899]	0.23695* [0.12872]	0.08478 [0.10742]	0.12327* [0.06954]
Protectionism	0.14087 [0.22122]	0.19580 [0.18116]	-0.10182 [0.31614]	0.01732 [0.10835]	-0.14966 [0.13949]	0.14954 [0.14583]
Cut1	-0.10124 [0.36951]	-1.43392** [0.56045]	0.60265 [0.69951]	-0.79253* [0.45672]	-0.68150 [0.44664]	-0.58331 [0.43369]
Cut2	0.62416* [0.36725]	-0.86901 [0.55764]	1.48999** [0.69772]	0.08518 [0.44615]	1.79017*** [0.42075]	-0.03203 [0.42426]
Cut3	1.80799*** [0.36883]	0.05347 [0.55663]	2.81133*** [0.70106]	1.73544*** [0.44749]	2.42551*** [0.42324]	1.44115*** [0.42460]
Cut4	2.59660*** [0.37264]	0.79085 [0.55728]	3.67319*** [0.70352]	2.80479*** [0.45215]		2.22016*** [0.42631]
No. of observations	1009	1144	1024	1045	813	1102
Log likelihood	-1380.09	-1586.02	-1335.87	-1211.95	-758.86	-1318.47
Pseudo-R-squared	0.06	0.01	0.06	0.01	0.12	0.02

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