Institute for International Integration Studies

IIIS Discussion Paper

No.218 / April 2007

Risk, Government and Globalization: International Survey Evidence

Anna Maria Mayda,
Georgetown University

Kevin H. O'Rourke
Trinity College Dublin, CEPR and NBER

Richard Sinnott
University College Dublin

IIIS Discussion Paper No. 218

Risk, Government and Globalization: International Survey Evidence

Anna Maria Mayda

Kevin H. O'Rourke

Richard Sinnott

Risk, Government and Globalization: International Survey Evidence[1]

Anna Maria Mayda, Georgetown University

Kevin H. O'Rourke, Trinity College Dublin

Richard Sinnott, University College Dublin

April 2007

Abstract

This paper uses international survey data to document two stylized facts. First, risk aversion is associated with anti-trade attitudes. Second, this effect is smaller in countries with greater levels of government expenditure. The paper thus provides evidence for the microeconomic underpinnings of the argument associated with Ruggie (1982), Rodrik (1998) and others that government spending can bolster support for globalization by reducing the risk associated with it in the minds of voters.

Key words: Trade attitudes, risk

JEL Codes: F13, P16

[1] Anna Maria Mayda worked on this project during her stay as a Visiting Academic at the Institute for International Integration Studies at Trinity College Dublin. She would like to thank the Institute for all the resources it provided. Kevin O'Rourke started working on the project while he was a Government of Ireland Senior Research Fellow. He would like to thank the Irish Research Council for the Humanities and Social Sciences for their generous funding. Richard Sinnott would like to thank his co-investigators on the ASES (Asia-Europe Survey) project - Jean Blondel, Takashi Inoguchi, Ikuo Kabashima and Ian Marsh for much enjoyable and fruitful collaboration. The ASES project, which produced the data set used in this paper, was supported by a grant from the Japanese Ministry of Education and Science (Scientific Research Grant # 11102001, Principal Investigator: Takashi Inoguchi). The authors would also like to thank Marc Busch and Dani Rodrik for insightful comments.

1. Introduction

Are markets and governments substitutes or complements? Traditional left-right ideological divisions notwithstanding, an important strand of thought has always maintained that markets and governments are, in fact, complementary. The argument is that governments can help produce the political support required to maintain flexible markets by providing social insurance policies, by stabilising the aggregate level of economic activity, or by otherwise reducing the risk of disruption which markets on their own can represent. A classic statement of this view is provided by Ruggie (1982), who argues that in the aftermath of the catastrophe that was the interwar period, policy makers developed a series of domestic and international institutions which sought to combine a multilateral commitment to free trade, on the one hand, with domestic stability on the other. This historic compromise he termed 'embedded liberalism.' Hays, Ehrlich and Peinhardt (2005, pp. 473-4) summarize the argument nicely: "Because trade causes economic dislocations and exposes workers to greater risk, it generates political opposition that democratically elected leaders ignore at their peril. Thus...political leaders have had to be aware of and actively manage public support for economic openness. To do this, governments have exchanged welfare state policies that cushion their citizens from the vagaries of the international economy in return for public support for openness."

Similarly, Rodrik (1998) shows that more open countries have bigger governments, and explains this correlation in two stages. First, he argues that "More open economies have greater exposure to the risks emanating from turbulence in world markets" (p. 1011). Second, he argues that government expenditure can perform "an insulation function, insofar as the government sector is the "safe" sector (in terms of employment and purchases from the rest of the economy) relative to other

activities, and especially compared to tradables" (*ibid.*). Governments may also directly reduce the risk facing individuals by providing safety nets, and Rodrik argues that this is indeed the case in richer countries. But, in either case, government expenditure has the same effect: it reduces risk, and since risk increases with openness, political considerations ensure that the size of the government expands with openness as well.

This paper tests the micro-foundations of these hypotheses, and it does so in two stages. First, if risk increases with openness, then risk-averse individuals should be opposed to openness, and thus favour policies, such as tariffs or quotas, which limit the extent to which the national economy interacts with the rest of the world. Second, government expenditure should be effective in reducing the hostility of such voters towards openness: that is, in countries with bigger governments, risk-averse voters should be less hostile to globalization than they would be in countries where governments are small. Testing the first hypothesis requires information not only on individual attitudes towards trade, but on their attitudes towards risk as well. Testing the second hypothesis obviously requires survey data for several countries, characterised by a range of government sizes.

In testing these hypotheses, we need to control for the fact that preferences towards trade are determined by a range of other variables as well. There is already a substantial literature, for example, which argues that trade affects voter attitudes through its effects on labour markets, and that these effects are consistent with the predictions of simple Heckscher-Ohlin trade models (Scheve and Slaughter 2001; Mayda and Rodrik 2005; O'Rourke and Sinnott 2001). This paper will control for these Heckscher-Ohlin effects and confirm the results of the previous studies using a newly available data set, the Asia-Europe Survey (ASES), which covers nine East and

South East Asian and nine Western European countries. The paper will also take seriously the possibility that a range of non-economic factors may shape preferences towards globalization. In this paper we focus on the concept of national identity as a more fundamental measure of nationalism than the specific measures of 'patriotism' and 'chauvinism' that we have considered elsewhere (Mayda and Rodrik 2005; O'Rourke and Sinnott 2001). In addition to this, we also look at whether supra-national identity (i.e., a feeling of being European or Islamic or Asian or Chinese) can have an influence on voter preferences. We return to the question of the expectations one might have regarding the impact of these variables below.

Against this background, the primary focus of the paper is on the role that governments can play in shaping attitudes towards globalization. In this regard, it is closely related to a number of recent papers that argue that public finance considerations can shape such attitudes (Facchini and Mayda 2006, Hanson 2005, Hanson, Scheve and Slaughter 2005). The dominant expectation in this literature is that the existence of the welfare state, itself a consequence of Ruggie's embedded liberalism, will influence attitudes towards immigration but not towards trade since "immigrants may pay taxes, may receive public services, and may vote over tax and spending choices. Imports, obviously, do none of these things" (Hanson, Scheve and Slaughter 2005, p. 1). By contrast, the risk channel considered here is one which should operate on trade preferences.

2. Trade preferences: labour markets, redistribution, risk and identity

The study of economic factors affecting responses to globalization typically focuses on the income-distribution effects of international integration. Assuming self-interested maximizing behaviour, attitudinal responses in survey data sets reflect the

impact of globalization on each respondent's individual utility. Therefore the analysis of preferences, combined with information on each individual's socio-economic background, allows an *indirect* test of the income-distribution predictions of standard economic models. In addition, the availability in survey data sets of questions on values, national identity and other attachments makes it possible to investigate how globalization is perceived at the individual level from a non-economic point of view.

The income-distribution effects of trade occur through different channels. The first set of papers in the existing literature focuses on the labour-market competition hypothesis. Trade allows countries to indirectly exchange the services of factors of production, and thus affects rates of return in factor markets. The Heckscher-Ohlin model predicts that trade liberalization benefits abundant factors and hurts scarce factors. If skilled and unskilled labour are the two inputs into production, then in skill-abundant countries skilled workers should favour trade liberalization while unskilled workers should oppose it. In other words, we should observe a positive correlation between the level of individual skill and pro-trade attitudes in these countries. Scheve and Slaughter (2001) find empirical evidence which is consistent with this prediction in their analysis of U.S. trade preferences. The trade model also predicts that, in skill-scarce countries, the more educated an individual is, the *smaller* the probability that he or she is in favour of free trade. This implies that, in skill-scarce countries, we should observe a *negative* correlation between individual skill and pro-trade preferences. O'Rourke and Sinnott (2001) and Mayda and Rodrik (2005) show that these predicted relationships between individual skill and attitudes are consistent with cross-national survey data. Skilled workers welcome trade liberalization only if they are in skill-abundant countries while, in skill-scarce countries, it is the less educated who are stronger promoters of free trade. In this paper we use a newly available data

set, that covers a different range of countries than our previous papers, and test the robustness of the above results by controlling for these labour-market determinants of preferences.

Another strand of the literature on preferences emphasizes that, together with the labour market, there is an additional economic channel through which individual utilities are affected by globalization, namely the welfare state, though there are important differences between trade and migration in this respect. Since immigrants both contribute to and benefit from the welfare state, they are likely to have a non-negligible impact on public finances, even though their net effect could be negative or positive, depending for example on their skill mix relative to natives. Hanson, Scheve and Slaughter (2005), Hanson (2005) and Facchini and Mayda (2006) all find evidence that individual attitudes towards immigration are indeed influenced by this welfare state channel. However, Hanson *et al.* point out that the impact of trade on the welfare state is much smaller than the effect of immigration, especially in developed countries. Even though trade liberalization reduces tariff revenues, the trade component of government revenues is usually small in high-income countries. In addition, while trade increases the cost of the welfare state if public programs are in place, such as Trade Adjustment Assistance in the U.S., this effect is usually limited in size. Based on U.S. survey evidence, Hanson *et al.* find that while welfare state considerations play an important role in shaping individual attitudes towards immigration, they play no role in shaping individual attitudes towards trade. In particular, in American states with high numbers of immigrants and relatively generous welfare systems, high-skill respondents are much less favourably disposed to immigration than they would be in states with low fiscal exposure to immigration, the interpretation being that high-skill workers are high earners and will thus object to

immigration in their capacity as taxpayers. On the other hand, they find that state welfare spending has no effect on attitudes towards trade.

As pointed out in the previous section, in this paper we focus on the channel examined by Rodrik (1998), and analyze both the impact of risk considerations on individual protectionist attitudes, and the role of the government in shaping this link. Two papers in the literature (Hays, Ehrlich and Peinhardt 2005, Scheve and Slaughter 2004) come closest to analyzing the risk channel we are interested in, although neither in our view provides a direct test of our hypotheses. Scheve and Slaughter (2004) carry out a *country-level* analysis that shows how opposition to economic integration - analyzed as the dependent variable – is negatively affected by welfare policies. First the authors relate country-level average trade opinions to macroeconomic conditions (such as the unemployment rate), labour-market policies and institutions.[2] They find that protectionist opinion is a significantly increasing function of the unemployment rate: however, controlling for the latter variable, the average opposition to free trade is negatively affected by labour spending (total national spending on labour market programs as a percentage of GDP) and by measures of employment protection. They also show that the gap in protectionist attitudes between unskilled and skilled workers - which is greater the more skill-abundant the country is - is attenuated by the size of the welfare state (labour spending).[3] Hays, Ehrlich and Peinhardt (2005) show that support for free trade is positively correlated with the net replacement rate for unemployment insurance, with the amount of government spending per unemployed worker on active labour market programs, and with a subjective evaluation of the social security system (the first and third measures vary at the individual level, while

[2] For data on attitudes, they use the ISSP survey and, for robustness checks, the WVS.
[3] In particular, in Figure 4 Scheve and Slaughter (2004) plot the marginal effect of individual skill on protectionist attitudes – from country-specific regressions – against spending on labour-market programs as a percent of GDP, controlling for (log) per capita GDP. The figure shows that the regression coefficient on labour spending is positive and significant.

the second one is a country-level variable).[4] Our paper differs from Scheve and Slaughter (2004) in that ours is an individual-level analysis while theirs is mostly a country-level one; it differs from Hays, Ehrlich and Peinhardt (2005) in that the survey which we use allows us to explicitly relate risk attitudes to preferences towards globalization. In addition, we test whether this impact of risk preferences on attitudes towards trade is influenced by government policy. We are thus testing more directly the micro-foundations of Rodrik's thesis.

As already noted, we are also interested in the non-economic determinants of globalization preferences. Several of the previous papers cited found that interests were not the only determinants of protectionist policy preferences. Nationalist ideology also mattered, and, by implication, national identity. Our objective in this paper is to go two steps further. The first step is to use a direct measure of national identity as opposed to our previous specific measures of patriotism and chauvinism. Second, we include the effects of supranational identity in the analysis. In the European context, the reasons for including supranational identity are obvious, although *a priori* it is not clear which way the effect should go: respondents who say they have a sense of European identity might be more outward-looking, supporting intra-European liberalization and, by extension, supporting globalization more generally. Or, they might have a mercantilist desire to liberalize within Europe, but maintain high barriers between Europe and the rest of the world, a strategy pursued by many nascent European nation states during the early modern period, as Heckscher's classic study of mercantilism emphasizes (Heckscher 1935). Note also that in this paper we look not just at the effects of European supranational identity, but at the

[4] The authors also mention a robustness check where they interact measures of individual trade exposure with the social protection variables. Employment in import competing sectors of the economy has a negative impact on support for trade. However, the size of this effect decreases as the level of social protection increases.

effects of Asian, Chinese and Islamic identities as well, although these are clearly very different in nature from a sense of European identity. Expectations regarding the effects of these identities are even more difficult to pin down *a priori*. One might regard Asian identity as being analogous to European identity in that it has a specific supranational institutional underpinning, through ASEAN. On the other hand, this institutional underpinning is clearly much weaker, lacking the sophisticated political machinery of the EU, let alone any notion of a shared citizenship. Whether a sense of Asian identity is likely to be associated with negative or with positive views about globalization is thus, if anything, more difficult to decide than is the parallel question in the European case. In the case of Islamic identity, its religious underpinning might suggest an association with universal values and with support for openness; on the other hand, the growing politicization of Islamic identity in recent years may imply an association with resistance to globalization. Finally, the difficulty in the case of Chinese supranational identity lies in separating the effects of the supranational dimension from the effects of its ethnic and national foundations. It might be expected that the overseas Chinese community would be pro-globalization, given the role of ethnic Chinese networks in promoting trade (Rauch and Trindade 2002), but this is merely supposition. In short, while there are very good reasons for attempting to tease out the impact of a range of supranational identities, it is difficult to embark on the enterprise with clear-cut and well-grounded hypotheses. As a result, all we do here is to explore the issues by noting the empirical findings.

3. The data

This paper draws on data from the Asia-Europe Survey (ASES), which is a survey of political culture in nine East and South East Asian and nine Western

European countries. The survey was conducted in autumn 2000 by Gallup International and its local affiliates and was coordinated by Nippon Research Centre, Tokyo[5]. Minimum sample size in each country was 1000 respondents. With two exceptions, the target population consisted of all those aged 18-79 in the entire country. The exceptions were China, where the target was those aged 18-79 living in eight major cities, and Indonesia, where the target was those aged 18-79 living in Java. Sampling and fieldwork details are provided in Nippon Research Centre (2001).

Our dependent variable is a binary variable indicating respondents' attitudes towards trade. 'Extremely protectionist' is equal to one if respondents strongly agreed with the statement that their country "should limit the import of foreign products", and zero otherwise. Note that the way that we have defined this variable implies that respondents who answered 'don't know' to the questions, or did not answer the question at all, are coded as zero: the dummy variable thus simply indicates whether or not the respondent gave the most protectionist response possible to the question.[6]

The ASES survey asks respondents to state their age and gender, as well as the number of years of schooling they received. These variables are all included in our regressions in a straightforward manner, although we assumed that the maximum number of years of schooling an individual might reasonably receive was 25, and excluded those individuals reporting a higher number than this (typically, these individuals gave their age in response to this question).

Our national identity variable was generated as follows. Respondents were asked the following question (the example given is the question as asked in Japan):

[5] The ASES project was supported by a grant from the Japanese Ministry of Education and Science (Scientific Research Grant # 11102001, Principal Investigator: Takashi Inoguchi). Information regarding ASES, including the questionnaire used, is available at http://www.asiaeuropesurvey.org/index.html

[6] Alternatively, we could have coded non-respondents as missing values, but since there are only 4 non-responses to this question this would have made no difference to our results.

"Many people think of themselves as being part of a particular nationality, for example as French or American or Japanese or whatever. Do you think of yourself as [**JAPANESE**] or as belonging to another nationality, or do you not think of yourself in this way?" Unless respondents answered that they thought of themselves as Japanese, they were coded as zero. If they thought of themselves as Japanese, then they were coded as 1 if they answered 'not important at all' to the question "Overall, how important is it that you are [**JAPANESE**]", 2 if they answered 'only a little important,' 3 if they answered 'somewhat important', and 4 if they answered 'extremely important'.

We also defined four 'supranational identity' variables, depending on how respondents answered the following question: "Some people also think of themselves as being part of a larger group that includes people from other countries, for example, as European, Asian, Chinese, Islamic etc. How about you, do you think of yourself in this way?' Respondents could indicate that they thought of themselves as being European, Asian, Chinese or Islamic, and four dummy variables corresponding to each of these four categories were defined. The excluded categories are the other possible answers to the same question: 'other supranational identity' and 'I don't think of myself in this way' (missing values are kept as such and therefore are not included in the regressions); the impact of the excluded categories is embodied in the constant.

In order to gain an insight into risk aversion and the demand for social insurance, we availed of responses to the following question: "Please tell me how much you agree or disagree with the following...The government should take responsibility for ensuring that everyone either has a job or is provided with adequate social welfare." 'Pro-safety net' indicates how strongly respondents agreed with this statement, on a scale from 1 ('strongly disagree') to 5 ('strongly agree'). In itself, we

believe that this variable indicates a sense of risk-aversion, since it shows whether or not respondents want the government to ensure that there is a minimum level of welfare below which it will not let people fall. If a taxpayer is in favour of paying for such a guarantee, this is certainly consistent with a preference for insurance, and hence an aversion to risk. On the other hand, attitudes in favour of the provision of such safety nets might reflect individual attributes other than risk-aversion, and we want to control for these in the analysis. Once we have controlled for these other characteristics, 'Pro-safety net' can reasonably be regarded as an indicator of risk aversion.

What variables other than risk aversion might lead people to favour the introduction of safety nets? In order to answer this question, we make use of the analysis in Alesina and La Ferrara (2004), who study the determinants of individual preferences for *redistribution*. To be sure, redistribution is not the same thing as the provision of minimum safety nets, since redistribution involves taxing the rich to benefit the poor, while safety nets might benefit anyone faced with a sufficiently negative shock, whether rich or poor. Nonetheless, several of the variables which Alesina and La Ferrara identify as mattering for attitudes towards redistribution might also reasonably be expected to influence demands for social insurance as well. According to Alesina and La Ferrara, preferences towards redistribution should reflect current and future income (with richer people, or people expecting to be rich in the future, being more opposed to redistribution), risk aversion (with greater risk aversion spurring a greater demand for redistribution), altruism (greater altruism leading to a greater demand for redistribution), and perceptions about whether the opportunities facing different individuals in society are equal or unequal (with people who believe that opportunities are unfairly distributed favouring redistribution). Their empirical

results lend support to these hypotheses, and suggest that if you take preferences for redistribution, and strip away the influences of current and future income and ideology (i.e. altruism and beliefs about equality of opportunities), then what you should be left with is a measure of risk-aversion. Thus, it seems reasonable to suppose that if we strip away the impact of current and future income and ideology from our safety net variable, what we should be left with is a measure of risk aversion as well. This is especially so since our safety net question is closer to risk aversion than their redistribution variable to begin with, as it measures a fear of falling below a minimum level of welfare, rather than a desire to see the government narrowing the gaps between the rich and the poor.

Therefore, in what follows we will attempt to control for both current and future income and ideology, and are confident that the residual impact of 'Pro-safety net' can indeed be interpreted as a measure of individual risk-aversion. To this end, we introduce three further variables into the analysis. The first is household living standards, which vary from 1 ('low') to 5 ('high') and capture the level of current income. The second variable is based on a question asking respondents whether they are worried about their work situation – the variable ranges from 1 ('very worried') to 3 ('not worried at all') – and could be viewed as a proxy for expectations of future income. It should be noted that we also control for the Heckscher-Ohlin variables - described below - which capture an important component of future expected income changes of the respondent, namely those linked to globalization. The third is a measure of political ideology, based on where respondents place themselves on a ten-point left-right scale. This variable represents a proxy for a sense of altruism and beliefs about equality of opportunities. Unfortunately, this question was not asked in

China, and thus in regressions involving this variable we were forced to omit all Chinese observations.

Finally, there are two country-level variables that we introduce in order to test our two main economic hypotheses. The first is GDP per capita, which as in our previous papers we assume is positively correlated with countries' relative skill-abundance and which can thus be used to test the predictions arising out of Heckscher-Ohlin theory. In particular, the theory predicts that in poor countries, being high-skilled should be associated with anti-trade attitudes, whereas in rich countries it should be associated with more liberal attitudes. The prediction is thus that schooling should enter with a positive sign in a regression explaining anti-trade sentiment, but that an interaction term between schooling and GDP per capita should enter with a negative sign. The numbers on GDP per capita are taken from Heston *et al.* (2002), and are for 1998 (the last year for which data for all 18 countries, including Taiwan, were given).

The second country-level variable is a measure of government size. We use the World Development Indicators' figures for general government final consumption expenditure as a percentage of GDP, which are for 2000. Our strategy is to interact government size with risk aversion; we expect to find that while risk aversion has a positive effect on anti-trade sentiment, the interaction term will enter with a negative sign in the regressions, indicating that risk-aversion has a weaker effect on anti-globalization attitudes in countries with larger governments. Unfortunately, data for Taiwan are missing, and so we are forced to exclude Taiwan from this analysis.

Summary statistics for all variables are given in Table 1, while Table 2 gives the country level means for the variables.[7] Ireland has the smallest government share within Europe, while governments are generally smaller in Asia than in Europe. Respondents tend to favour safety nets, and to place themselves in the middle of the political spectrum. There are particularly strong senses of national identity in Thailand, the Philippines, Malaysia and Greece.

4. Results

Table 3 presents the results of the series of probit regressions designed to test the various hypotheses developed in the previous sections. In every case we use the same binary dependent variable, 'Extremely protectionist'. All equations include country fixed effects, to capture the influence of any unobserved country-specific factors that might be influencing attitudes in a uniform way across respondents. We do not report these country effects in Table 3, although we do report the coefficients on the basic demographic controls that we include (that is age and female). As in previous work, we find that older people are more opposed to trade. We also find a pronounced gender effect, with women being more protectionist than men, other things being equal. Since these age and gender effects are not the primary focus of this paper, we merely note them at this stage and move on to our main results.

As in our previous work (Mayda and Rodrik 2005, O'Rourke and Sinnott 2001) we find that the data are consistent with the predictions of Heckscher-Ohlin theory (equation 1). The coefficient on schooling is positive and statistically significant, while the interaction term between schooling and GDP per capita is

[7] The summary statistics in the overall sample (Table 1) are based on the observations used in regression (7), Table 3, which is our preferred specification. The marginal effects we calculate in Section 4 use mean values of the regressors from this Table. The summary statistics by country (Table 2) are instead based on all the observations available in the dataset (since not all countries in the sample are covered in regression (7), Table 3).

negative and statistically significant. This implies that in sufficiently poor countries, the better educated will be anti-trade, while in sufficiently rich countries, the better educated will be liberal in their attitudes towards trade. This result is extremely robust, in that it survives the inclusion of many additional variables in the specifications in equations (2) through (8). According to the coefficients reported in equation (7) (which is our preferred specification, as it controls for risk considerations and non-economic determinants of attitudes) the cut-off point for per capita GDP below which the high-skilled are protectionist is approximately $9,500. In addition, the coefficient estimates in equation (7) imply that an extra four years of schooling increases the probability of an extremely protectionist trade response by 2.2 percentage points in Indonesia (whose per capita GDP is approximately $3,900) while it reduces the probability by 3.2 percentage points in Sweden (whose per capita GDP is $22,475).[8]

Equation (2) moves on to the main theme of our paper, by including our pro-safety net variable. As we expected, being in favour of government-provided safety nets is positively correlated with anti-globalization sentiment, with the result being highly statistically significant. We believe that the positive coefficient on 'Pro-safety net' is in part driven by the impact of risk aversion. However, entering 'Pro-safety net' on its own is open to the criticism that this variable captures not just risk-

8 To calculate the marginal effects of individual skill, we used Clarify (King, Tomz and Wittenberg 2000; Tomz, Wittenberg and King 2001) and set all the individual-level variables equal to their overall sample means (see Table 1). For the aggregate-level variables we used each country's specific values, that is the government share, per capita GDP and coefficient on country dummy variable for, respectively, Sweden and Indonesia. Note that we were also concerned to test the robustness of these findings, given the recent argument of Hainmueller and Hiscox (2006) that education might be influencing respondents' attitudes towards trade directly (by providing them with ideas and information relevant to the trade policy debate) rather than via its effects on labour market outcomes. We thus made use of two questions, which asked respondents to identify their country's foreign minister, and the five permanent UN Security Council members. From these we generated two 'political sophistication' variables, which were included in regressions not reported here (these variables were included both linearly and in interaction form with per capita GDP). Our Heckscher-Ohlin results are robust to the inclusion of these variables.

aversion, but other variables such as household living standards (current and future) and political ideology, and so we include these variables in equation (3). Controlling for household income, for whether respondents are worried about their work situation, and for ideology (how politically right wing the respondent reports himself or herself to be), we find that the more a respondent agrees with the statement that "The government should take responsibility for ensuring that everyone either has a job or is provided with adequate social welfare," the more likely he or she is to be protectionist. As we argued earlier, since we are controlling for both ideology and current and future income, this partial correlation between pro-safety net beliefs and protectionism suggests that there is a positive correlation between risk aversion and attitudes towards trade.

This partial correlation in equation (3) is positive, and strongly statistically significant. Our interpretation of this result is that respondents who are more risk-averse tend to be anti-globalization, although we stress that this is a partial correlation and that we are not making strong statements about causation. Again, this is a robust result since it shows up in our other specifications as well (equations 4 and 7). It is economically as well as statistically significant in that, based on regression (3), Table 3, an increase in 'Pro-safety net' from 3 to 5 raises the probability of being extremely protectionist by 12 percentage points.[9] Interestingly enough, household living standards have no direct impact on attitudes towards trade, according to these results, in that the coefficient is statistically insignificant (and indeed its sign is ambiguous). Being politically right-wing is associated with more protectionist sentiments in equation (3), but this result is not robust, since the coefficient on *politically right wing* becomes statistically indistinguishable from zero in equations (4), (7) and (8).

[9] To calculate the marginal effect of 'Pro-safety net', we used Clarify and set all the right-hand-side variables (except for 'Pro-safety net') equal to their overall sample means (see Table 1).

It is probably not surprising that respondents who are more risk-averse are more opposed to globalization. More interesting from the point of view of policy makers is whether or not they can do anything about the hostility towards globalization arising from this channel. Equation (4) suggests that in fact they can do something. Equation (4) interacts our pro-safety net variable – as well as the other determinants of pro-safety net attitudes – with the size of government, here measured by the share of government final consumption expenditure in GDP.[10] The interaction term is negative and statistically significant, and again this result is robust to the inclusion of additional variables in equation (7). What the result is telling us is that in countries with bigger governments, risk aversion has a smaller impact on protectionist attitudes than in countries with small governments. This could be for a number of reasons, as mentioned in the introduction. It could be because larger governments do better at providing social insurance programmes of the sort which our pro-safety net question refers to. Or, it could be that having a big government by itself reduces the risk environment facing economic agents, as argued by Rodrik (1998). Our results show that bigger governments considerably reduce the impact of risk-aversion on globalization preferences. Based on regression (7), Table 3, if 'Pro-safety net' increases from 3 to 5, then the probability of being extremely protectionist increases by approximately 6.5 percentage points in Sweden, where the government consumes 26.6% of GDP, but by approximately 16 percentage points in Indonesia where the share is only 6.5% (these two countries correspond to, respectively, the highest and lowest government shares in the data set).[11]

[10] Notice that, in an individual-level analysis such as ours, reverse causality from attitudes to policy outcomes (for example, government size) is not an issue, since each individual has an infinitesimal impact on the aggregate policy outcome.

[11] To calculate the marginal effects of 'Pro-safety net', we used Clarify and set all the individual-level variables (except for pro-safety net) equal to their overall sample means (see Table 1). For the

We also tested the robustness of our results by estimating country-specific regressions. For each country, we ran a probit model of protectionist attitudes on age, gender, schooling, pro-safety net, as well as the other determinants of pro-safety net attitudes. As Figure 1 shows, the country-specific marginal effect of pro-safety net is negatively related to each country's share of government expenditure in GDP.

Another way of extracting information on risk-aversion from the pro-safety net variable, and excluding other factors that might influence it, is to regress 'Pro-safety net' on household income and political ideology, and enter the residuals from this regression as a regressor into our bivariate probit analysis. Equation (1) in Table 4 provides an OLS estimate of the determinants of pro-safety net, including as regressors not just income and ideology, but all the other right hand side variables appearing in equation (3) of Table 3 as well. Though we are mainly interested in the residuals, the results of this analysis are interesting in themselves. *Household living standards, not worried about job* and *politically right-wing* are all strongly and negatively correlated with pro-safety net opinions, consistent with the analysis in Alesina and La Ferrara (2004). It is also noticeable that there is a Heckscher-Ohlin style relationship between schooling and 'Pro-safety net' – with the educated favouring safety nets in poor countries but not in rich ones. This result is important because it is consistent with the interpretation in our previous work (Mayda and Rodrik 2005, O'Rourke and Sinnott 2001) that the estimated impact of skill on protectionist attitudes (positive and negative in, respectively, low-income and high-income countries) is related to the income-distribution Stolper-Samuelson effect of trade liberalization.

---

aggregate-level variables we used each country's specific values, that is the government share, per capita GDP and coefficient on country dummy variable for, respectively, Sweden and Indonesia.

The residuals from this relationship (equation 1, Table 4), which are a measure of risk aversion, are then entered into the bivariate probit analysis of attitudes towards trade (equations (5) and (6)). The results are consistent with what we found earlier: risk-aversion is associated with anti-trade attitudes, but this correlation diminishes as government size increases, consistent with the main argument of this paper.[12]

Finally, we explore whether these results are robust to the inclusion of variables measuring non-economic attitudes. The answer is that they are, but our results for national and supranational identity are interesting in their own right as well. Consistent with our previous findings, nationalist sentiment (in this case measured by the degree of importance people ascribe to their national identity) is strongly associated with protectionist attitudes. On the other hand, when we turn to the impact of a sense of suprational identity, we find that a sense of European identity is strongly associated with more liberal attitudes towards trade. Thus, in terms of our earlier discussion, there is no evidence that identification with Europe (as in thinking of oneself as European) is associated with 'Fortress Europe' opinions; rather, quite the opposite, as our Euro-identifiers tend to be pro-globalization. By contrast, two of the remaining three supranational identities contribute to anti-globalization sentiment: respondents who reported having a sense of Asian identity or a sense of supranational Islamic identity were more anti-trade than others.

Equation (7) in Table 3 introduces these identity variables into a specification where 'pro-safety net' is entered directly into the equation, along with household income and political ideology. Equation (8) replicates the analysis, but this time

[12] We worried that the impact of government size on the coefficient of risk aversion might be driven by the positive correlation between government size and per capita GDP levels across countries. For example, maybe in advanced countries more risk-averse individuals might be less opposed to free trade because markets work better than in lower-income countries, therefore making it easier to insure against risk. We do not find evidence of this channel: When in regression (6), Table 3, we replace the interaction term *risk aversion*govt.share* with the new interaction variable *risk aversion*gdp*, the coefficient on the latter variable is not significant (results not shown).

adopts the two-equation approach of equations (5) and (6). In order to be consistent, we estimate a new first-stage OLS regression explaining 'pro-safety net', adding the identity variables as additional explanatory factors (equation (2) in Table 4). Interestingly, while those having an Asian or a Chinese sense of identity are more pro-safety net, the same is not true of those with a European sense of identity, rhetoric about the 'European social model' notwithstanding. Moreover, respondents with a sense of supranational Islamic identity were less pro-safety net than others. Most importantly for our purposes, when the residuals from this equation are added into the bivariate probit analysis (equation 8 of Table 3), the results are exactly as they were before.

5. Conclusion

Our results provide microeconomic evidence consistent with the long-standing argument that the state and the market are in fact complementary. Openness and globalization can introduce uncertainty into peoples' lives, and this additional risk can lead some people to oppose trade. Government expenditure can help to reduce this risk, and thus shore up support for open markets. It would seem that the 'grand bargain' that was embedded liberalism is politically effective. Whether that grand bargain can survive the additional political pressures which the interaction of mass migration and the welfare state can give rise to will be one of the key issues determining the sustainability of this institutional compromise in the decades ahead.

References

Alesina, A. and La Ferrara, E. (2004). Preferences for Redistribution in the Land of Opportunities, *Journal of Public Economics* 89, pp. 897-931.

Facchini, G. and Mayda, A. M. (2006). Individual Attitudes Towards Immigrants: Welfare-State Determinants Across Countries. Mimeo.

Hainmueller, J. and Hiscox, M.J. (2006), Learning to Love Globalization: Education and Individual Attitudes Towards International Trade. Mimeo.

Hanson, G.H. (2005). *Why Does Immigration Divide America? Public Finance and Political Opposition to Open Borders*. Institute for International Economics, Washington D.C.

Hanson, G.H., Scheve, K.F. and Slaughter, M.J. (2005). Public Finance and Individual Preferences over Globalization Strategies. *NBER Working Paper* No. 11028, National Bureau of Economic Research, Cambridge, Massachusetts (January).

Hays J. C., Ehrlich, S. D. and Peinhardt, C. (2005). Government Spending and Public Support for Trade in the OECD: An Empirical Test of the Embedded Liberalism Thesis, *International Organization*, 59, pp. 473-494.

Heckscher, E.F. (1935). *Mercantilism*. George Allen and Unwin, London.

Heston, A., Summers, R. and Aten, B. (2002). *Penn World Table Version 6.1*. Center for International Comparisons at the University of Pennsylvania (CICUP), October.

Hainmueller, J., Hiscox, M.J. (2006). Learning to love globalization: education and individual attitudes toward international trade. *International Organization* 60, pp. 469-498.

King, G., Tomz, M. and Wittenberg, J. (2000). Making the most of statistical analyses: improving interpretation and presentation. *American Journal of Political Science* 44, pp. 347-61.

Mayda, A.M., Rodrik. D. (2005). Why are some people (and countries) more protectionist than others? *European Economic Review* 49, pp. 1393-1430.

Nippon Research Center (2001). The Asia-Europe Survey. Tokyo: Nippon Research Center.

O'Rourke, K.H., Sinnott. R. (2001). What determines attitudes towards protection? Some cross-country evidence. In: Collins, S.M., Rodrik, D. (Eds.), *Brookings Trade Forum 2001*, Brookings Institute Press, Washington, D.C., pp. 157-206.

Rauch, J.E. and V. Trindade (2002). Ethnic Chinese Networks in International Trade, R*eview of Economics and Statistics* 84, pp. 116-130.

Rodrik, D. (1998). Why Do More Open Economies Have Bigger Governments? *Journal of Political Economy* 106, pp. 997-1032.

Ruggie, J.G. (1982). International Regimes, Transactions, and Change: Embedded Liberalism in the Postwar Economic Order, *International Organization* 36, pp. 379-415.

Scheve, K.F., Slaughter, M.J. (2001). “What Determines Individual Trade-Policy Preferences?” *Journal of International Economics* 54, pp. 267-292.

Scheve, K. and Slaughter, M. (2004). Public Opinion, International Economic Integration, and the Welfare State. Mimeo.

Tomz, M., Wittenberg, J. and King, G. (2001). CLARIFY: software for interpreting and presenting statistical results. Version 2.0. Cambridge, MA: Harvard University, June 1. http://gking.harvard.edu

Table 1. Summary statistics, overall sample

Variable	Obs	Mean	Std. Dev.	Min	Max
Extremely protectionist	12013	0.1899	0.3922	0	1
Age	12013	41.9245	15.4430	18	79
Female	12013	0.4709	0.4992	0	1
Years of schooling	12013	11.2232	3.9915	0	24
Pro-safety net	12013	4.2703	0.8359	1	5
Household living standards	12013	2.9385	0.7283	1	5
Not worried about job	12013	2.1811	0.7930	1	3
Politically right-wing	12013	5.4939	2.1198	1	10
Risk aversion	12013	0.0000	0.8037	-3.5599	1.4073
Risk aversion (2)	12013	0.0000	0.8022	-3.5963	1.4574
Strong national identity	12013	3.2103	1.1105	0	4
European identity	12013	0.3525	0.4778	0	1
Asian identity	12013	0.2238	0.4168	0	1
Chinese identity	12013	0.0218	0.1461	0	1
Islamic identity	12013	0.0589	0.2355	0	1
Per capita GDP (=gdp*1,000)	12013	16525.8300	7226.9150	3415.2800	26322.4800
Govt. share	12013	16.2357	4.9911	6.5320	26.5807

These summary statistics are based on the same observations as regression (7), Table 3. *Extremely protectionist* equals 1 if the respondent strongly agrees that his/her country should limit the import of foreign products. *Pro-safety net* ranges from 1=strongly disagree to 5= strongly agree and gives the respondent's answer to the following question: "The government should take responsibility for ensuring that everyone either has a job or is provided with adequate social welfare." *Household living standards* ranges from 1=low to 5=high. *Not worried about job* ranges from 1=very worried to 3=not worried at all and gives the respondent's answer to the following question: "Some people feel that their life is going well. Others are worried about the way it is going. In your own case, how worried are you about your work situation."

Risk aversion (*risk aversion (2)*) is equal to the residual from a regression of *pro-safety net* on *age, female, years of schooling, years of schooling*gdp, household living standards, not worried about job, politically right-wing*, and country fixed effects (and national identity variables). *gdp* is the 1998 per capita GDP (divided by 1000). G*ovt. share* equals the share of government final consumption expenditure in GDP in 2000.

Table 2. Summary statistics, means by country

country	Extremely protectionist	Age	Female	Years of schooling	Pro-safety net	Household living	Not worried about job	Politically right-wing	Risk aversion
Japan	0.0461	48.9725	0.5244	12.3765	4.0582	2.6524	1.9636	5.7115	1.06E-09
South Korea	0.3020	39.9594	0.4980	11.9545	4.3938	2.6505	1.7774	5.4493	-1.39E-10
China	0.1367	40.3513	0.4940	10.9611	4.3360	2.6400	2.0020		
Taiwan	0.0828	40.3583	0.4870	10.2355	4.1744	2.9970	2.0875	6.3553	1.56E-09
Singapore	0.0258	39.6143	0.5020	9.8875	4.0852	3.1322	2.4695	5.8566	-3.92E-10
Malaysia	0.2180	38.3750	0.4330	9.7160	4.2758	3.0830	2.2985	6.0621	7.72E-10
Indonesia	0.2216	37.2908	0.5035	10.1005	4.4741	2.6409	2.2863	5.8921	1.70E-09
Thailand	0.2940	39.1030	0.4970	9.7963	4.2884	2.8110	2.0452	6.3907	6.05E-10
Philippines	0.3500	36.7220	0.5010	9.9130	4.3287	2.6600	1.4990	5.9514	6.74E-10
United Kingdom	0.1321	43.0493	0.5178	11.9068	4.0627	3.1440	2.5541	5.2318	2.38E-10
Ireland	0.1267	42.5010	0.5099	12.8861	4.2722	3.1149	2.6956	5.6108	4.70E-10
France	0.1869	44.6461	0.5239	13.1542	4.2102	2.9662	2.4468	4.6154	-2.93E-10
Germany	0.0556	43.9181	0.5102	10.3928	3.8032	3.1484	2.2947	5.1172	1.07E-10
Sweden	0.0879	45.5365	0.5045	11.6150	4.3835	3.0500	2.5675	5.3220	-8.90E-10
Italy	0.1939	43.0600	0.5020	11.1281	4.4985	2.9114	2.2936	5.3447	-2.41E-10
Spain	0.0997	44.5194	0.4925	10.2485	4.0566	2.9451	2.0467	4.8657	-6.23E-10
Portugal	0.2110	41.1710	0.5410	9.2372	4.4356	2.6760	2.2283	5.1035	-2.04E-10
Greece	0.3527	44.0707	0.5049	10.2809	4.6313	3.0177	1.7273	5.8054	-4.59E-10

country	Risk aversion (2)	Strong national id.	European identity	Asian identity	Chinese identity	Islamic identity	gdp*1,000	Govt. share
Japan	8.88E-10	2.0115	0.0000	0.2642	0.0044	0.0000	24661.4300	16.4273
South Korea	2.00E-10	3.5168	0.0000	0.8861	0.0000	0.0000	13622.0100	12.1137
China		2.7056	0.0000	0.3104	0.3393	0.0000	3317.7900	13.0832
Taiwan	4.79E-10	2.9541	0.0000	0.1427	0.6707	0.0000	17742.8000	
Singapore	1.08E-09	3.3559	0.0020	0.1968	0.2803	0.0726	26322.4800	11.0422
Malaysia	-2.37E-11	3.6140	0.0020	0.0580	0.1670	0.4300	10191.9200	10.3947
Indonesia	7.54E-10	3.4669	0.0000	0.0989	0.0148	0.4293	3910.0200	6.5320
Thailand	5.44E-10	3.7130	0.0040	0.8190	0.0230	0.0220	6410.1700	11.3313
Philippines	7.34E-10	3.9090	0.0170	0.7510	0.0230	0.0280	3415.2800	13.0818
United Kingdom	-1.36E-09	2.9260	0.2475	0.0138	0.0020	0.0049	22326.8600	18.6903
Ireland	-4.09E-10	3.4475	0.4485	0.0010	0.0010	0.0010	22433.9800	13.9146
France	5.02E-10	2.7893	0.7048	0.0000	0.0010	0.0109	21889.9200	23.2269
Germany	1.58E-09	2.3795	0.5387	0.0039	0.0020	0.0039	22435.1900	18.9936
Sweden	1.59E-10	2.5684	0.5944	0.0010	0.0010	0.0040	22475.3100	26.5807
Italy	7.68E-10	3.2283	0.6791	0.0000	0.0000	0.0010	21915.8200	18.2847
Spain	1.41E-09	2.8504	0.7721	0.0110	0.0010	0.0000	17329.4300	17.5849
Portugal	6.13E-10	3.4540	0.7520	0.0010	0.0000	0.0000	15165.2200	20.5083
Greece	-1.10E-09	3.5914	0.4352	0.0000	0.0000	0.0020	14095.3400	15.7124

Table 3. Probit regression results

PROBIT with country dummie	1	2	3	4	5	6	7	8
Dependent variable	**Extremely Protectionist**							
Age	0.0036***	0.0038***	0.0045***	0.0050***	0.0048***	0.0053***	0.0043***	0.0044***
	[0.0008]	[0.0009]	[0.0011]	[0.0011]	[0.0011]	[0.0011]	[0.0011]	[0.0011]
Female	0.0406*	0.0412*	0.0669**	0.0650**	0.0781***	0.0776***	0.0672**	0.0804***
	[0.0232]	[0.0235]	[0.0278]	[0.0283]	[0.0278]	[0.0282]	[0.0284]	[0.0283]
Years of schooling	0.0263***	0.0222***	0.0381***	0.0381***	0.0443***	0.0454***	0.0343***	0.0404***
	[0.0067]	[0.0068]	[0.0084]	[0.0085]	[0.0084]	[0.0084]	[0.0086]	[0.0085]
Years of schooling*gdp	-0.0028***	-0.0026***	-0.0039***	-0.0039***	-0.0044***	-0.0044***	-0.0036***	-0.0040***
	[0.0004]	[0.0004]	[0.0005]	[0.0005]	[0.0005]	[0.0005]	[0.0005]	[0.0005]
Pro-safety net		**0.2638*** **	**0.2687*** **	**0.3926*** **			**0.3831*** **	
		[0.0195]	**[0.0227]**	**[0.0746]**			**[0.0741]**	
Household living standards			0.0073	0.0268	-0.0042	-0.0028	0.0201	-0.0029
			[0.0214]	[0.0695]	[0.0214]	[0.0216]	[0.0698]	[0.0217]
Not worried about job			-0.1370***	-0.0583	-0.1582***	-0.1642***	-0.0395	-0.1598***
			[0.0197]	[0.0660]	[0.0197]	[0.0201]	[0.0661]	[0.0201]
Politically right-wing			0.0214***	0.0062	0.0157**	0.0155**	0.0143	0.01
			[0.0068]	[0.0246]	[0.0068]	[0.0069]	[0.0247]	[0.0070]
Pro-safety net*govt. share				**-0.0079***			**-0.0076***	
				[0.0044]			**[0.0043]**	
Household living standards*govt. share				-0.0011			-0.0007	
				[0.0042]			[0.0042]	
Not worried about job*govt. share				-0.0054			-0.0064	
				[0.0040]			[0.0040]	
Politically right-wing*govt. share				0.0009			0.0001	
				[0.0015]			[0.0015]	
Risk aversion					**0.2687*** **	**0.3983*** **		
					[0.0227]	**[0.0747]**		
Risk aversion*govt. share						**-0.0083***		
						[0.0044]		
Risk aversion (2)								**0.3866*** **
								[0.0741]
Risk aversion (2)*govt. share								**-0.0078***
								[0.0043]
Strong national identity							0.1311***	0.1398***
							[0.0187]	[0.0186]
European identity							-0.1542***	-0.1525***
							[0.0408]	[0.0407]
Asian identity							0.1819***	0.1979***
							[0.0611]	[0.0610]
Chinese identity							-0.174	-0.1273
							[0.1322]	[0.1325]
Islamic identity							0.1613**	0.1377*
							[0.0771]	[0.0774]
Observations	18074	17764	12487	12018	12487	12018	12013	12013
Log likelihod	-7596.18	-7357.5	-5303.01	-5156.41	-5303.01	-5157.32	-5109.9	-5110.93
Wald Chi squared	1192.72	1260.83	1042.46	1023.18	1042.46	1026.63	1053.05	1057.61
Degrees of freedom	21	22	24	27	24	24	32	29

The table reports coefficient estimates for probit regressions (the constant is not shown). Robust standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%. All regressions in this table control for country fixed effects. See end of Table 1 for definitions of variables.

Table 4. First stage regressions

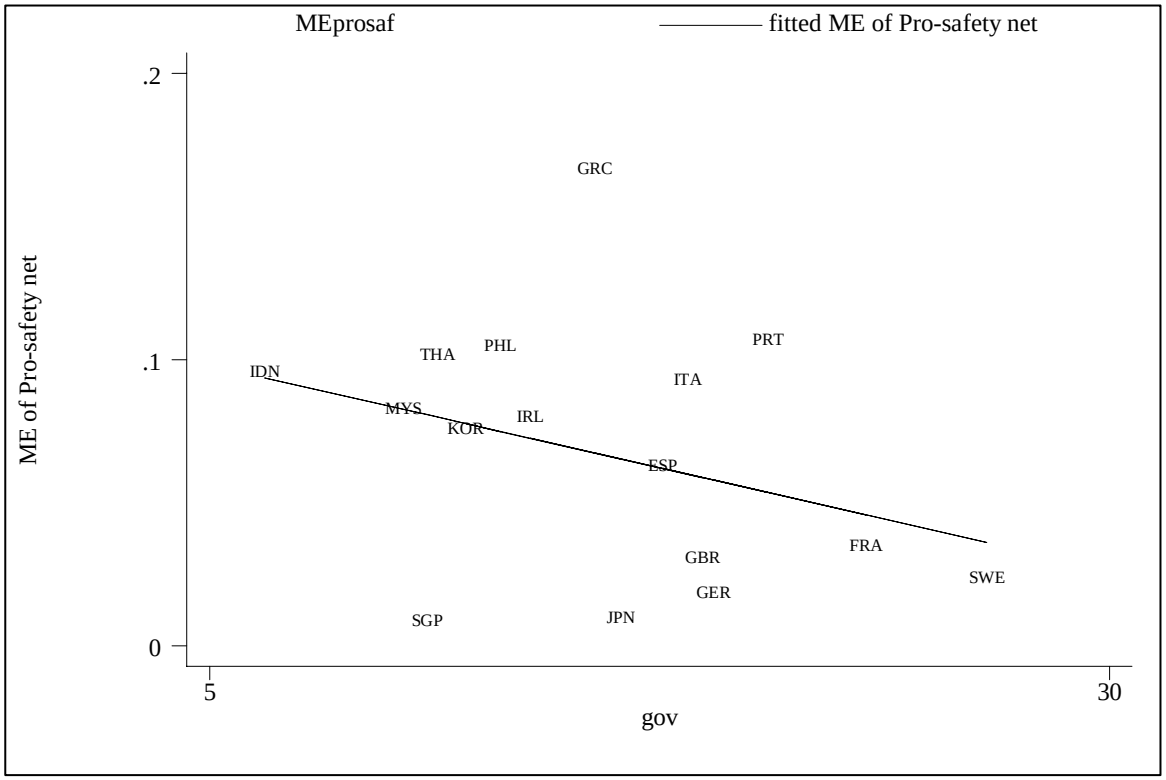
OLS	1	2
Dependent variable	**Pro-Safety Net**	
Age	0.0011*	0.0007
	[0.0005]	[0.0005]
Female	0.0418***	0.0437***
	[0.0145]	[0.0145]
Years of schooling	0.0230***	0.0203***
	[0.0045]	[0.0045]
Years of schooling*gdp	-0.0017***	-0.0015***
	[0.0003]	[0.0003]
Household living standards	-0.0431***	-0.0457***
	[0.0110]	[0.0110]
Not worried about job	-0.0789***	-0.0789***
	[0.0103]	[0.0103]
Politically right-wing	-0.0216***	-0.0236***
	[0.0036]	[0.0036]
Strong national identity		0.0390***
		[0.0077]
European identity		0.0181
		[0.0213]
Asian identity		0.0618**
		[0.0301]
Chinese identity		0.1502***
		[0.0414]
Islamic identity		-0.0731*
		[0.0407]
Constant	4.9630***	4.8581***
	[0.0562]	[0.0611]
Observations	12487	12482
R-squared	0.07	0.08

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

The regressions in this table control for country fixed effects. See end of Table 1 for definitions of variables.

Figure 1: The country-specific impact of pro-safety net on protectionist attitudes, as a function of the government share



For each country, we have run a probit model of protectionist attitudes on age, gender, schooling, pro-safety net, as well as the other determinants of pro-safety net attitudes. The values on the y axis in the Figure are the marginal effects of pro-safety net from each country-specific probit model. The values on the x axis are each country's share of government expenditure in GDP.

Institute for International Integration Studies
The Sutherland Centre, Trinity College Dublin, Dublin 2, Ireland