

**Who Wants to Globalize?**  
**A Unified Theory of Trade Policy Beliefs**  
Andy Baker  
a.baker@neu.edu  
Assistant Professor  
Department of Political Science  
Northeastern University

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Although the allure of consumption is the engine of globalization, scholars of mass attitudes toward trade have largely ignored consumer interests. This paper develops an economic model of trade policy preferences based on the Heckscher-Ohlin theory of international trade. The model incorporates labor-market and consumption elements that are supported by an empirical analysis of survey data from 41 nations. Heavy consumers of exportables are found to be more protectionist than heavy consumers of imports. Moreover, citizens in countries with expensive tradable goods see trade liberalization as a remedy to the rents they pay for protectionism. Other findings support the more conventional labor-market side of the H-O model: citizens endowed with their country's abundant factor tend to be less protectionist than compatriots endowed with the country's scarce factor. Finally, the poor, unskilled, and rural in most countries are more suspicious of globalization than the rich, skilled, and urban, although citizens of skill-abundant countries tend to be more protectionist than their economic interests would dictate.

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“the prejudices of the public ... irresistibly oppose [free trade]”

-- Adam Smith (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*

The “Battle of Seattle,” the Cancún walkout, a failed Wal-Mart referendum, stubborn agricultural subsidies, trashed McDonald’s restaurants, violence at the Genoa G8 and the S26 Prague meetings, outrage over outsourcing, the annual World Social Forums: all are among the events that observers cite as evidence of a worldwide backlash against globalization. With everyone from violent anarchists to armchair protectionists voicing concerns over unemployment, wealth distribution, sweatshops, the environment, labor rights, national identity, and democratic sovereignty, many consider the continued opening of global markets to be imperiled.

Yet while these events and arguments receive much attention, the largely unmentioned engine of globalization is the allure of consumption. The US trade deficit with China is driven by Americans’ addiction to cheap imports. Despite boycotts and protests over its continued expansion, 100 million human beings visit a Wal-Mart store every week. After French farmer Juan Bové tracted over a McDonald’s restaurant, declaring that “the French people ... are with us in this fight against junk food and globalization,” the franchise opened its one thousandth store in France in 2004 (Bhagwati 2004). In short, while citizens as producers and nation-state residents may complain about globalization, citizens as consumers often find it hard to resist.

Does such consumption behavior resonate in citizens’ beliefs about international trade? Despite the important influence of trade on consumer options, scholars of mass attitudes toward globalization have largely ignored it, instead focusing on individuals’ employable assets. In this paper, I develop and test an economic model of individual trade-policy preferences that is based

both on labor markets *and* consumption behavior. The model, which draws from the classic Heckscher-Ohlin trade theory, explains variation in mass commitments to protectionism across individuals and countries. It also addresses other intriguing questions, such as whether the world's poor as well as its poorest countries are indeed the least enthusiastic about free trade, as many critics claim. I test the observable implications of the theory using economic data and a cross-national opinion survey from 41 countries, finding that, as hypothesized, consumer interests matter along with income-earning assets when citizens formulate attitudes about trade. The following two sections develop and defend the economic model while the remaining sections empirically test it and some alternatives with the 1995-1997 World Values Survey.

## HECKSCHER-OHLIN

### Defining the Model

Consider two autarkic (non-trading) countries (indexed by  $j$ ), named Home ( $H$ ) and Foreign ( $F$ ). Each produces quantity  $Q_{jk}$  of two goods (indexed by  $k$ ), say, microprocessors ( $M$ ) and  $T$ -shirts ( $T$ ), using two factors of production (indexed by  $l$ ), quantity  $S_j$  of skilled labor and  $U_j$  of unskilled labor. Factor ownership and quantities are fixed, but laborers can switch sectors without cost. To develop a model of who wins and loses from trade liberalization, it is necessary to determine what happens to the real wages  $r_{jl}$  of each factor--that is, the ratio of nominal wages (factor costs),  $w_{jl}$ , to prices,  $P_{jk}$ . Assuming that consumers spend all of their income on the two goods, real wages, expressed as the quantity of goods factor  $l$  can afford to consume, are

$$r_{jl} = \frac{w_{jl} \cdot C}{P_{jM}} + \frac{w_{jl} \cdot (1-C)}{P_{jT}}, \text{ where} \quad (1)$$

$$C = \frac{Q_{jM} \cdot P_{jM}}{w_{jl}}. \quad (2)$$

The constant  $C$  is therefore the share of nominal wages spent on microprocessors. Equation 2 expresses the conventional H-O model's assumption of homothetic tastes: all individuals in both countries have the same consumption patterns.

Define the production of microprocessors as being relatively more skilled-labor-intensive than the production of  $T$ -shirts, and define Home as having a relative abundance of skilled labor. The ratio of skilled to unskilled nominal wages in Foreign is therefore greater than that in Home:

$$\frac{w_{SF}}{w_{UF}} > \frac{w_{SH}}{w_{UH}} . \quad (3)$$

Because the production of microprocessors requires more  $S$  than  $U$ , Home can produce them at a lower price, relative to its  $T$ -shirts, than can Foreign. In contrast, Foreign produces relatively less expensive  $T$ -shirts. Overall, the relative factor endowments and the price of each good in country  $j$  vary inversely with one another.

What happens when Home and Foreign start trading with one another? On the one hand, the relative price of microprocessors is higher in Foreign than in Home, so Foreign will prefer to buy Home's microprocessors over its own. On the other hand, the relative price of  $T$ -shirts is higher in Home than in Foreign, so Home will demand more of Foreign's  $T$ -shirts than its own. Stated generally, freely trading countries will export goods whose production is intensive in the use of their relatively abundant factor while importing goods that are intensive in their scarce factor. This, in a sentence, is the Heckscher-Ohlin (H-O) trade theory (Heckscher 1949 [1919]).

But how does this affect the real wages of each factor, and therefore income distribution, in each country? Trade increases the demand, and therefore the price, for the good that most intensively employs the country's abundant factor:

$$\frac{d\left(\frac{\Delta P_{jM}}{\Delta P_{jT}}\right)}{d\left(\frac{S_j}{U_j}\right)} > 0 \quad (4)$$

It also, in turn, increases the demand for and the cost of the relatively abundant factor (Stolper and Samuelson 1941).<sup>1</sup> As such, the nominal wages of the country's abundant factor rise relative to those of its scarce factor. Moreover, since  $C$  and  $P_{jk}$  (equation 1) do not vary by consumers, this conclusion holds for real wages as well:

$$\frac{d\left(\frac{\Delta r_{jS}}{\Delta r_{jU}}\right)}{d\left(\frac{S_j}{U_j}\right)} > 0. \quad (5)$$

This is, then, H-O's central hypothesis regarding who wins and who loses with international trade and a testable hypothesis about mass attitudes. Expressed as a hypothesis about trade policy beliefs, the relationship between worker skill and support for free trade should be positive in skill-abundant countries and negative in skill-scarce countries.

### Defending the Model

Although a giant in international trade theory, scholars were skeptical about H-O's empirical merits for decades (Leontiff 1953; Perdakis and Kerr 1998).<sup>2</sup> A resurgence of support for H-O has recently occurred, however, because scholars have found that the theory does

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<sup>1</sup> Note that  $P_{jk} = w_{jS} \cdot \frac{S_k}{Q_k} + w_{jU} \cdot \frac{U_k}{Q_k}$ .

<sup>2</sup> A primary reason for this is that initial formulations treated both types ( $U$  and  $S$ ) of labor as a single, homogenous factor. Scholars have found that the empirical accuracy and usefulness of the model is greatly enhanced once labor is split into two factors (Stern and Maskus 1981).

explain import/export structures and, in many cases, shifts in domestic wage distributions. A country's relative endowments of skilled labor, unskilled labor, and land account extremely well for the share of skill and natural resource inputs in its exports, and these patterns hold even in countries (like Canada) whose trade is overwhelmingly with similarly endowed countries (Leamer 1984; Mayer and Wood 2001; Wood and Mayer 2001). Moreover, most scholars now agree that the widening wage gap in high-income countries is due in part to increased trade with low-skill countries, although controversy over the degree of this impact remains (Wood 1994; Borjas and Ramney 1995; Cline 1997). However, evidence for the converse, a declining wage gap in low-income countries, has been more mixed.

Findings on mass opinions toward trade policy reflect these economic conclusions. Scheve and Slaughter (2001) find a strong positive correlation between various measures of skill and support for free trade in the skill-abundant United States. Using cross-national data, Mayda and Rodrik (2004) as well as O'Rourke and Sinnott (2001) have found empirical support for a central hypothesis of the H-O model: "the [higher skill] the country, the more positive is the impact of a marginal increase of [worker skill] on the probability of pro-trade attitudes" (Mayda and Rodrik 2004, 16). Baker (2003) also finds this to be the case in 14 Latin American countries. At the same time, these authors fail to find the expected negative correlation between skill and pro-trade sentiment in the developing world. Sources of this exception to H-O are discussed with alternative theories below. It is important to note, however, that this literature has not tested all the relevant hypotheses of the H-O model.

## EXTENDING THE MODEL

### The Relative Welfare Effects of Consumption

Economists and political economists that apply the H-O framework attribute trade's distributional impact solely to shifts in relative factor costs (equation 3). Empirical tests of H-O by scholars of trade policy attitudes have also assumed wages to be the sole source of relative income shifts. This ignores the fact, however, that a shift in relative product prices will also affect income distribution through consumption. How? Quite simply, it will through differences in consumption budgets. While convenient to assume homothetic tastes, it is both unrealistic and consequential. Real differences in consumption budgets also contribute to trade-induced changes in income distribution. Namely, individuals whose consumption budgets are comprised of the highest share of the exportable good will suffer greater relative price increases than will compatriots that consume a greater share of the imported or import-competing good.

Consumer preferences can be allowed to vary by introducing a subscript for consumer  $i$  into equation 1:

$$r_{ij} = \frac{w_{ij} \cdot C_{ij}}{P_{jM}} + \frac{w_{ij} \cdot (1 - C_{ij})}{P_{jT}} \quad (6)$$

As in equation 1, nominal wages are weighted by the ratio of good  $k$ 's share of  $i$ 's consumption budgets to good  $k$ 's price. However, the consumption budget share,  $C_{ij}$ , may now vary across consumers and countries, potentially influencing income distribution. As equation 4 indicates, trade increases the relative price of microprocessors in Home and decreases their relative price in Foreign. Heavy consumers of microprocessors in Home (those with large  $C_{iH}$ ) undergo real wage losses relative to heavy consumers of  $T$ -shirts (those with small  $C_{iH}$ ), while heavy consumers of  $T$ -shirts in Foreign experience losses relative to heavy consumers of microprocessors. Stated in terms of the original factor endowments,

$$\frac{d(\Delta r_{ij})}{d\left(C_{ij} \times \frac{S_j}{U_j}\right)} < 0. \quad (7)$$

Although an expression of consumption patterns,  $C_{ij}$  varies systematically with relative income within each country. This is easy to see when one considers that, because they are more skilled-labor-intensive, a microprocessor is more expensive than a *T*-shirt. More generally, skilled-labor-intensive goods are more expensive than unskilled labor-intensive goods because the former have more value added. Therefore, microprocessors comprise a greater share of high-income consumption budgets than low-income consumption budgets in both countries.<sup>3</sup> Stated as a more general hypothesis, the relationship between income and support for free trade should grow increasingly *negative* as skill abundance rises.<sup>4</sup>

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<sup>3</sup> This is not just logical but also supported by extensive empirical data. Food and clothing comprise a much greater share of low-income consumption budgets than of high-income ones (Houthakker 1957). This is Engel's Law (1857), one of the first theories of modern economics.

<sup>4</sup> Although research on the relationships among trade, income and consumption is scant, this hypothesis conforms to many known patterns. For example, first world tariffs on clothing and agriculture are generally believed to be a regressive tax: "Current protection in the United States seems particularly aimed at lower-end consumer goods ... that have virtually gone out of production in the United States by now and where the net effect on our workers' well-being comes not from the effect on their wages in employment, but overwhelmingly from their role as consumers" (Bhagwati 2004: p. 127. Also see Irwin 2002). It is for similar reasons that, because it sells so many inexpensive Chinese imports, W. Michael Cox has said that "Wal-Mart is the greatest thing that ever happened to low-income Americans" (Lohr 2003). Moreover, Baker

Consumption and production, therefore, are two sides of the same coin in the H-O model. Despite this, and despite the vast empirical and theoretical literature on international trade, economists typically ignore the welfare effects of trade's impact on consumption patterns: "[T]he standard estimates of the gains from trade ... largely overlook the benefits to consumers from exposure to a wider variety of goods. ... To the extent that economists focus only on trade's effects on production or income, they understate the gains from trade" (Irwin 2002, 33-34). Scholars of trade policy coalitions (Rogowski 1989; Frieden 1991; Alt *et al* 1996; Hiscox 2002) and mass beliefs about globalization (Gabel 1998; Seligson 1999; Scheve and Slaughter 2001, 2004; Beaulieu, Benarroch and Gaisford 2001; O'Rourke and Sinnott 2001; Mayda and Rodrik 2004) have also almost completely ignored consumption as a potential source of preferences. Baker (2003) does address consumption in an empirical test of trade preferences in one world region, but he presents it as a contrast to the HO model. This paper unifies both consumption and production into a single theory and tests it in countries from every major world region.

Finally, the theory developed above considers the two labor types to be the only factors of production, as the trade policy attitudes literature has also tended to do. Traditional treatments of H-O, however, often consider capital ( $K$ ) and land ( $L$ ) to be the two factors of production. In fact, substituting  $K$  and  $L$  for the two factors in equations 5 and 7 yields the following two hypotheses. First, individuals with assets tied to land should be more protectionist than are owners of capital in land-scarce/capital-abundant nations, with the relationship reversing in land-abundant countries. Second, regarding consumption, heavy consumers of land-intensive goods

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(2003) finds that in Latin American countries, middle class citizens have undergone the greatest relative consumption gains from trade liberalization.

(poor people) should be more protectionist than heavy consumers of capital-intensive goods (wealthy people) in capital-scarce/land-abundant countries, with the relationship reversing in capital-abundant countries.

## **ALTERNATIVE THEORIES**

### **Why Hasn't Wage Inequality Declined in the South?**

When export-led growth reduced wage inequality in East Asia during the 1960s and 1970s, many economists tallied one for H-O (Wood 1997). Unfortunately, this pattern was not repeated in other liberalized developing countries like those in Latin America and some in Africa. In fact, income inequality worsened during the 1980s and 1990s in many instances. This trend has inspired a number of alternative theories about trade's domestic impact. One such theory notes that much of the expansion of international trade since the 1960s has been in skill-intensive goods. Many of the production activities that have been transferred from the North to the South have been more skill-intensive than those in which Southern workers were already employed (Feenstra and Hanson 1996). In a process dubbed "skill-enhancing trade," Donald Robbins suggests that trade in advanced capital goods and technological know-how increases the relative demand for skilled labor in both the North and South (Robbins 1995; Robbins and Gindling 1999). If the skill-enhancing trade hypothesis is correct, then support for free trade should be positively correlated with skill in *all* countries, contrary to H-O expectations, and the strength of this correlation should be invariant to a country's skill endowment.

Although under different theoretical guises, similar hypotheses have found their way into the trade policy attitudes literature. Beaulieu, Benarroch, and Gaisford (2001) develop an intra-industry trade model that also hypothesizes higher support for trade among skilled workers in all countries, suggesting that trade liberalization measures in recent years have been asymmetrically

concentrated in skill-intensive goods; unskilled workers still face protectionist barriers to the goods they tend to produce. Gabel (1998) posits the human capital thesis, claiming that a higher stock of formal skills makes individuals more adaptable to changing labor markets and therefore more likely to maintain their value in the labor market. While both sets of authors do find evidence indicating a cross-national positive association between individual skill and pro-trade attitudes, their survey data comes almost exclusively from developed countries, where H-O has the exact same empirical implications.

Adrian Wood suggests two other reasons why trade has failed to reduce income inequality in the developing world. The first is that there is, paradoxically, a minimum threshold of skills one needs to provide unskilled labor. Illiterate and other poorly trained workers, designated as “*NO-EDs*,” do not have even the minimal skills to benefit from unskilled-labor-intensive exports (Wood 1994).<sup>5</sup> *NO-EDs* would therefore not experience the wage pull that more educated but still unskilled compatriots might enjoy. Wood also suggests that, because well over half of the world’s unskilled labor force resides in just five Asian nations (Bangladesh, China, India, Indonesia, and Pakistan) that have recently entered global markets, many lower-middle and middle income countries have seen their comparative advantages shift away from unskilled workers (Wood 1997).

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<sup>5</sup> For example, in China it is not the least educated that work in the export-oriented manufacturing sectors, but rather those with middling levels of formal education: “For many of the least developed countries, where *NO-EDs* still outnumber [workers with basic but not advanced education], the common suggestion that their ‘abundance of unskilled labour’ gives them a comparative advantage in labour-intensive manufacturing is misleading” (Wood 1994, 6).

## **New Trade Theory**

Although largely untested in the mass attitudes literature, “new trade theory” has been developed in recent years as an important alternative to more traditional trade models like H-O (Krugman 1990).<sup>6</sup> In new trade theory, countries trade because they have developed different specializations, which may not necessarily be based on variation in resource endowments. New trade theory drops the assumption of constant returns to scale, arguing that the specializations a country achieves through economies of scale provide a basis from which to export, while the lack of specialization in certain areas creates a need to import. New trade theory also relaxes the assumption of no transport costs, noting that international trade volumes have increased as transport costs have declined. Indeed, low transport cost, in the form of geographical proximity to major commercial centers, can itself be a source of specialization and comparative advantage, and it also implies less expensive imported goods.

## **DATA, MODEL, MEASUREMENT, AND HYPOTHESES**

### **The *World Values Survey* and Case Selection**

A proper test of any of these theories requires survey data from both high-skill and low-skill countries. This is largely because HO and several of the other skill-based theories have identical observable implications in the developed world: formal skill-level and protectionist sentiment should be negatively correlated. To date, however, almost all research on mass

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<sup>6</sup> A popular hypothesis in the trade attitudes literature that is not tested here is the Ricardo-Viner (R-V) model, which assumes that the welfare effects of a change in trade policy differ by sector, not factor (Frieden 1991; Alt *et al* 1996). Unfortunately, the sector-of-employment data needed to test R-V are hard to come by. Moreover, R-V has so far received rather limited empirical support (Scheve and Slaughter 2001; Mayda and Rodrik 2004).

attitudes toward trade policy has been conducted with data from a single country or multiple countries in the developed world (Gabel 1998; Scheve and Slaughter 2001; Beaulieu, Benarroch and Gaisford 2001; O'Rourke and Sinnott 2001). Studies explaining trade attitudes in the developing world have also been conducted on samples of homogenous countries (Seligson 1999; Baker 2003). The one exception to this is Mayda and Rodrik (2004), who, while using survey data collected from various world regions, only test one of the four H-O related hypotheses mentioned above.

To avoid the pitfalls of most previous work, I analyze the 1995-1997 *World Values Survey* (WVS), which measured trade attitudes in over 40 countries ranging in per capita income (at PPP) from US\$832 in Nigeria to US\$27,395 in the U.S. The 41 countries in my analysis (listed in the appendix) include 16 that were below the worldwide median per capita income (US\$4,000). The survey contains the following binary measure of trade preferences: "Do you think it is better if (1) goods made in other countries can be imported and sold here if people want to buy them, or that (0) there should be stricter limits on selling foreign goods here to protect the jobs of people in this country?" This variable, dropping "don't know" and other non-responses, is the dependent variable in the multivariate model described and reported in this and the following section. A score of one on this *Supports Free Trade?* variable indicates backing for free trade while a score of zero indicates protectionist sentiment.

### **Multilevel Model Specification**

The hypotheses presented above and the data needed to test them require a multilevel statistical model (Steenbergen and Jones 2002; Raudenbush and Bryk 2002). Cross-national survey data are organized hierarchically: respondents (level-1) are clustered within countries (level-2) and are probably more similar to compatriots than to foreigners, thus violating the

assumption of conditional statistical independence. Moreover, the H-O model posits causal heterogeneity across countries, such that the magnitude and direction of relationships between citizen attributes and trade policy beliefs depend on country-level characteristics. This subsection describes the independent variables included in two hierarchical binary logit models of trade attitudes in 41 countries.

***Skill: Measurement and Hypotheses.*** A central variable in the unified H-O model developed is skill at both the individual- and national-level, yet skill is a difficult trait to measure. Years of formal education level is often used, but education alone ignores (1) experience-based or post-schooling acquisition of skill, (2) massive domestic and international variation in schooling quality, (3) differences in achievement within equivalent education levels, and (4) the fact that not all skills acquired through formal education are market-relevant (Ingram and Nuemann 1999). Moreover, education has also been used by political scientists to measure other concepts related to trade preferences like “cognitive mobilization” and resistance to nationalism (Inglehart, Rabier, and Raif 1991), susceptibility to protectionist framing effects (Hiscox 2003), exposure to teaching from a free-market perspective (Iverson and Soskice 2001), and awareness of elite messages (Zaller 1992). As such, I use only the economically-relevant aspects of formal education to measure skill in this paper.

To do so at the individual-level, I conducted for each country a factor analysis of formal education level, income, and occupation. (See appendix for question wording and other measurement details.) In every country these three variables were highly correlated and loaded on only one significant dimension. The factor scores from this dimension are the measures of *Individual Skill*, or *skill*, and they capture only the income- and occupation-relevant aspects of formal education.

Testing H-O also requires a measure of each country's skill endowments,  $skill_j$ . Again, formal-education-based measures are precarious: they require making a common and arbitrary cut-off in every country dividing skill and unskilled labor (often at "some post-secondary education"). Existing datasets of cross-national formal education are rife with extrapolation, unintuitive findings, missing data, and outliers (Barro and Lee 2003).<sup>7</sup> As such, I use, as do Mayda and Rodrik (2004), 1995 per-capita GDP at PPP (logged), a variable that is much more available and more meaningfully captures the economically-relevant aspect of skill endowments (World Bank 2000). Because the meaning of a zero value on this variable is important in a multilevel model, I center it at its 1995 international median.

To test the H-O theory, the coefficient on individual skill ( $skill_i$ ) is allowed to vary by country and is estimated as a function of country skill ( $skill_j$ ) using a multiplicative term. That is,

$$\mathbf{b}_{(skill_i)j} = \mathbf{g}_{(skill_i)0} + \mathbf{g}_{(skill_i)1} \cdot skill_j + \mathbf{u}_{(skill_i)j} \quad (8)$$

The two  $\mathbf{g}$  coefficients can be interpreted similarly to those in an interaction model:  $\mathbf{g}_{(skill_i)0}$  is the slope on individual skill when country skill equals zero (its international median), and  $\mathbf{g}_{(skill_i)1}$  is akin to the interaction coefficient for individual skill  $\times$  country skill. The one departure from a standard interaction model is the addition of  $\mathbf{u}_{(skill_i)j}$ , which drops the (probably) unrealistic

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<sup>7</sup> For example, treating all individuals with at least some college as skilled workers (and all others as unskilled), the Barro-Lee measure of skill places Peru and the Philippines with skill endowments equivalent to Japan's and 50% *greater* than Germany's and Britain's. The U.S., on the other hand, is an extreme outlier, ending up five standard deviations above the mean and four above Japan and many other OECD countries. Finally, over one-third of the countries in the WVS are not in the Barro-Lee dataset.

assumption that  $skill_j$  perfectly accounts for cross-country differences in the relationship between individual skill and trade attitudes.

In relation to individual skill, then, the unified H-O model hypothesizes that  $g_{(skill_i)1} > 0$ , since individual skill should be positively related to free trade support in skill-abundant countries and negatively related in skill-scarce countries. In a country with median skill levels, therefore, the relationship should be zero, such that  $g_{(skill_i)0} = 0$ . These are, in short, the hypothesis tests of equation 5. However, if  $g_{(skill_i)0} > 0$  and  $g_{(skill_i)1} = 0$ , then the evidence is more in line with the skill-enhancing, human capital, and intra-industry trade theories, since this would indicate that skill is positively correlated with free trade support in every country.

What about *NO-EDs*? I control for individuals that do not cross a minimum skill threshold (respondents without a completed primary education) with a dummy variable. These individuals receive a value of 1 on the *NO-EDs* dummy variable (all others are recoded to 0).  $g_{(NO-ED)}$  therefore indicates how much *NO-EDs* deviate from the level of support for free trade that their raw skill level would dictate. If Wood is right, such that *NO-EDs* really do not benefit from any skill-related comparative advantage, this coefficient should be negative.

***Other Tests of H-O: Consumption, Land and Capital.*** The other main variable in the unified H-O model is  $Income_i$ , which measures the impact of consumption patterns.<sup>8</sup> As equation 7

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<sup>8</sup> Part of this same income variable, of course, is also used to calculate  $skill_i$ . This should not, however, raise multicollinearity alarm bells because the correlation between individual skill and income ranges from only .3 to .6 in most countries. Besides, any measure of skill and income will be correlated, so multicollinearity is less a problem than just a result of how the world

indicates, the slope on income should also depend on country skill endowment, so the income coefficient is also estimated as a function of country skill, similar to equation 8:

$$\mathbf{b}_{(income)_j} = \mathbf{g}_{(income)_0} + \mathbf{g}_{(income)_1} \cdot skill_j + u_{(income)_j} \quad (9).$$

If the consumption side of the H-O model is correct, then  $\mathbf{g}_{(income)_1} < 0$ , indicating that income is more negatively correlated with free trade support in high-skill countries than in low-skill countries.

Because comparative advantage can only be defined over two factors, I run a separate hierarchical model for land and capital. At the country level,  $\mathbf{land}$  is the number of square kilometers of arable land (World Bank 2000) while capital stock is the absolute amount of investment in US dollars in 1996 (Heston, Summers and Aten 2002). The ratio of these two factor quantities (multiplied by a scale factor of 1,000,000 to ease estimation and interpretation), is the *Land Abundance<sub>j</sub>* variable used in the analysis. It is also centered at its international median. Although direct ownership of land and capital is difficult to ascertain in standard public opinion surveys, the size of one's town or city of residence serves as a viable proxy. Land is by definition abundant in rural areas, while capital (factories, machinery, roads, etc.) is abundant in urban areas. As such, *Town Size<sub>i</sub>* of residence is a good measure of the degree to which a respondent's livelihood depends on land relative to capital. The coefficients for these variables are as follows:

$$\mathbf{b}_{(Town\ Size)_j} = \mathbf{g}_{(Town\ Size)_0} + \mathbf{g}_{(Town\ Size)_1} \cdot Land\ Abundance_j + u_{(Town\ Size)_j} \quad (10).$$

The consumption aspect of the land/capital model is estimated as follows:

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works. Moreover, this setup is necessary to isolate the consumption-related aspect of income from the skill-related component.

$$\mathbf{b}_{(income_e)_j} = \mathbf{g}_{(income_e)_0} + \mathbf{g}_{(income_e)_1} \cdot Land\ Abundance_j + u_{(income_e)_j} \quad (11).$$

According to the unified H-O model,  $\mathbf{g}_{(Town\ Size)_0} = 0$ ,  $\mathbf{g}_{(Town\ Size)_1} < 0$  and  $\mathbf{g}_{(income_e)_1} > 0$ .

**Other Independent Variables.** Both models contain other variables to control for potentially confounding factors. Because the total returns are lower, older workers may be more reluctant to adjust their lifestyle or to get retrained in order to acquire new skills in the face of shifting labor markets. I therefore expect respondent's  $Age_i$  to be positively correlated with protectionist sentiment. Because of child-birth, child-rearing, and discrimination, women also face a more precarious labor market worldwide than men.  $Women_i$  may, like the elderly, prefer protection from the vicissitudes of the global market (Hiscox and Burgoon 2003). I also control for  $Nationalist\ Sentiment_i$ , which is positively correlated with skill in most countries and is probably negatively associated with support for international trade (Elkins and Sides 2003). Omitting this variable could result in an upwardly biased  $\mathbf{g}_{(skill)_0}$ .

Finally, a surprising amount of evidence from a wide variety of countries indicates that a high degree of political awareness and/or involvement leads to more support for trade liberalization and other market policies (Inglehart, Rabier, and Raif 1991; Gabel 1998; Scheve and Slaughter 2001; Iverson and Soskice 2001; Steenbergen and Jones 2002; Baker 2003). This may be because highly aware citizens are more exposed to discourse from international elites comprising the pro-market "Davos Culture" (Huntington 1996) and "Washington Consensus" (Williamson 1990). Alternatively, it may be because they are more exposed to relevant messages from domestic elites, which in recent years seem to have been, on balance, more favorable toward economic liberalization and integration (Zaller 1992). Regardless,  $Political\ Interest_i$  is positively correlated with skill and town size in nearly every country, so it is an important control variable to include. At the same time, the nature of this relationship may vary

with country characteristics, for example, if domestic elites are more pro-trade in skill-abundant countries than in skill-scarce ones. To allow for this potentially confounding interaction effect, the coefficient on political interest is estimated as a function of country factor endowments.

***Remaining Specification Decisions.*** As is recommended to ease interpretation of any interactive model, all individual-level variables (except age and women) are centered around their country means (Raudenbush and Bryk 2002). These variables are also divided by their country-level standard deviations, so each is expressed as the respondent's distance in standard deviations from her or his country-mean (i.e.,  $z$ -scores). Equations 8 through 11 indicate that slopes for individual skill, income and town size (as well as political interest) vary systematically with country characteristics. The remaining variance in cross-country slopes ( $\text{Var}[u_{xj}]$ ) is random and normally distributed. Along these lines, slopes for variables that are not modeled as functions of level-2 variables (age, gender and nationalism) are estimated as normally distributed random coefficients, allowed to vary unsystematically across countries.

Missing data was a potential concern because of item non-response (e.g., respondent refused to report income or education level) and unasked questions in some countries (e.g., political interest was not recorded in Pakistan). To avoid the severe loss of cases that listwise deletion entails, I used multiple imputation.<sup>9</sup> Finally, I used the level-1 probability weights reported with the WVS data (to correct for under- and overrepresentation of groups within each country) as well as level-2 probability weights corresponding to the inverse of each country's share of the world population. These country-level weights make the final results pertain more closely to a sample from the real world population of these countries.

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<sup>9</sup> More specifically, I used the techniques (with ten imputed datasets) described in King *et al* (2001) with the EMis algorithm in *Amelia 2.1* (Honaker *et al* 2001).

## RESULTS

The hierarchical binary logit results for each model are reported in Table 1. The estimated variance components of the random coefficients are not reported to reduce clutter, but it is noteworthy that all of these variances except that for *NO-EDs*<sub>*i*</sub> are statistically distinguishable from zero at the .001 level. This is merely evidence of residual causal heterogeneity and varying mean support for trade across the countries.

[Table 1 (p. 36) about here]

The variables that are the primary tests of the unified Heckscher-Ohlin model are coupled with their corresponding coefficient symbols from equations 8 through 11. In the skill-based model, H-O performs extremely well with just one exception. First, the importance of consumption is demonstrated by the fact that the association between income (or the tendency to consume skill-intensive goods) and pro-trade attitudes grows increasingly negative as country-skill endowment grows ( $\mathbf{g}_{(income)_1} < 0$ ). Figure 1 demonstrates this by plotting the predicted slopes for some exemplary countries. Interestingly, this variation is around a positive median (because  $\mathbf{g}_{(income)_0} > 0$ ): only in moderately high-skilled countries (like South Korea) and upward are the poor *not* more protectionist than the rich.

[Figure 1 (p. 37) about here]

Second, as hypothesized, the correlation between individual skill and support for free trade grows increasingly positive as country-skill endowment grows ( $\mathbf{g}_{(skill)_1} > 0$ ). *NO-EDs* also fit H-O expectations: Illiterate and poorly skilled individuals are no more protectionist than their country's skill endowment would dictate. At the same time, despite this clear support for the unified H-O model, the correlation between individual skill and support for free trade is strongly

positive even in countries with the international median level of skill ( $\mathbf{g}_{(skill)_0} > 0$ ). Indeed, as Figure 1 indicates, this correlation is statistically *below* zero only for the least skill-endowed country in the sample (Nigeria). Among unskilled-labor powerhouses India and China, the slope between skill and support for free trade is essentially flat. In short, these results seem to correspond to a necessarily modified version of Heckscher-Ohlin: while the correlation between skill and pro-trade attitudes *does* decline with decreasing country-skill endowments, the variation in this correlation is around an already positive median value. It appears, then, that a combination of the “skill-enhancing trade” hypothesis and H-O theory is needed to explain trade policy attitudes. The existence of both tendencies no doubt explains the apparently contradictory findings of scholars who have limited their analyses to middle- and upper-income countries; some have cast a vote for H-O (O’Rourke and Sinnott 2001; Mayda and Rodrik 2004) while others have argued for hypotheses akin to “skill-enhancing trade” (Gabel 1998; Beaulieu, Benarroch and Gaisford 2001).

[Figure 2 (p. 38) about here]

Support for H-O in the land/capital model is more mixed than in the skill-based model. Factor endowments matter in the hypothesized direction: rural dwellers are more pro-trade relative to urban dwellers in land abundant countries than in capital abundant ones ( $\mathbf{g}_{(Town\ Size)_1} < 0$ ). As in the skill-based model, however, this variation in slope is around an already high positive median ( $\mathbf{g}_{(Town\ Size)_0} > 0$ ): urban residents are far less protectionist than rural residents in countries with median degrees of land abundance (e.g., China), and this relationship flattens out only in countries with rather extreme levels of land abundance, like Ukraine.<sup>10</sup> The

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<sup>10</sup> Land abundance for Ukraine is 1.95, so  $E(\beta_{(Town\ Size)Ukraine}) = .1173 - .0535 \times 1.950 = .01$ .

consumption side of things is not statistically significant, although, again, income is positively correlated with support for free trade even in countries with the international median factor endowment. All told, the land/capital model performs less well than the skill-based model, perhaps because capital is far more internationally mobile than labor (Wood 1994).

A final word is in order regarding the control variables. Women, the elderly, and nationalists are on average far more protectionist than other compatriots. Exposure to elite discourse, measured by political interest, appears to increase support for trade in skill-abundant countries while reducing it in skill-scarce countries, a potential sign that domestic elites in the former are more pro-trade than those in the latter.

### **COUNTRY-LEVEL RESULTS, OR WHY ARE THE NORTH'S CITIZENS SO PROTECTIONIST?**

The unified H-O model is therefore quite successful in explaining intra-country variance in trade policy opinions, but the theory and empirical testing to this point have ignored cross-national differences in mean support for free trade. The Adam Smith quote cited above would suggest that all countries and citizens are uniformly protectionist. While clearly overstated, the 230-year-old quote in a certain sense remains accurate: the average proportion of protectionists in the 41 countries is 0.35, and in only 7 countries are free traders a majority. The world, on average, prefers autarky. At the same time, the variation around this moderately low mean is high, with a standard deviation of 0.16. Why, then, do some countries have more protectionist citizens than others? Can the unified H-O model address this?

Two sets of hypotheses stem from the unified H-O model, one pertaining to production and the other to consumption. Regarding production, I hypothesize that aggregate support for free trade should vary with the relative size of groups endowed with each country's abundant

factor. Protectionist sentiment should be widespread in countries in which abundant factor assets are concentrated in a slim slice of the population. In contrast, aggregate support for free trade should be much higher in countries where abundant factor assets are shared throughout a broad segment of the population (Rogowski 1989).

How does this play out for the four factors considered in this paper? Unskilled workers outnumber skilled workers in *every* society, even in the most highly educated countries in the world: “Even after 60 years of rising educational attainment, the median US worker is still a high-school graduate...” (Scheve and Slaughter 2001, 83). Indeed, workers with at least some college education comprise only about 25% of the population in the wealthy countries where they are the abundant labor factor (Barro and Lee 2003). Capital is also not widely distributed, even in capital-rich countries, whereas land is widely distributed in land abundant nations. As such, I expect support for free trade to be higher in land-abundant and skill-scarce countries.

It is important to note that the latter hypothesis concerns a crucial element of the globalization debate: is trade more or less popular in wealthy countries? Antiglobalization protesters tend to assert that trade liberalization is imposed by developed-world business interests to the detriment of the world’s poor. At the same time, developing countries have been the most vociferous movers toward free trade in recent decades, prompting a leading trade theorist to recently suggest an “ironic reversal” of globalization support from North to South (Bhagwati 2004). In fact, the zero-order correlation between skill abundance and support for free trade is a mere +0.07, providing support for neither side. I demonstrate below, however, that, upon controlling for confounding factors, a much stronger and more interesting pattern emerges.

How might consumer interests explain cross-national support for free trade? Protectionism drives up consumer prices for tradable goods: citizens are, in essence, charged for

economic rents that are redistributed to protected sectors. Therefore, voters may see trade liberalization as a remedy to high prices. For example, in recent years many consumer groups in Japan have advocated trade liberalization because the country's notorious protectionism makes it one of the most expensive nations in the world. The fact that Japan has the most pro-trade citizenry in the WVS sample—77% support free trade, almost three standard deviations above the mean—is potential evidence for this claim.

### Measurement and Hypotheses

To test these and other hypotheses, I run a series of regression models (with multiple imputation) in which each case is a country ( $n = 41$ ) and the dependent variable is the proportion of survey respondents expressing support for free trade. Skill and land abundance are measured with the same variables used in the individual-level models reported above. I also control for nationalism using each country's mean score on the nationalism question in the WVS.

***Price Level of Tradables.*** To develop a cross-national measure of how expensive tradables are, I use price data from the Center for International Comparisons (Heston, Summers and Aten 2002). This dataset reports 1996 price parities ( $P_{jk}/P_{(US)k}$  for equivalent good  $k$  with price  $P$  in country  $j$ ) for various categories of goods in 37 of the 41 countries. Taking the average price parities over all tradable goods categories and dividing by the country's US\$ exchange rate yields the *Price Level of Tradables*,<sup>11</sup> a variable that varies from .52 (Bulgaria) to 2.2 (Japan) with the US equal

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<sup>11</sup> Price data reflect final, after-tax and after-subsidy prices. The 18 tradables categories are bread and cereals, meat, fish, dairy products, oils and fats, fruits and vegetables, other food, nonalcoholic beverages, alcoholic beverages, tobacco, clothing, footwear, fuel and power,

to 1.0. While it is well-established that skill-abundant countries have higher tradables prices than skill-scarce countries (Summers and Heston 1991), I expect to find that, controlling for skill, countries with expensive tradables are more pro-trade than countries with cheap tradable goods.

***New Trade Theory: Economies of Scale and Transport Costs.*** Although new trade theory was not tested in the individual-level model, it is straightforward to test in an aggregate setup. A central tenet of new trade theory is that small countries have more to benefit from trade liberalization because their firms and consumers do not enjoy economies of scale in the home market. I measure *Economies of Scale* with each country's absolute GDP at PPP in US\$ (divided by US\$1 trillion), expecting this variable to have a negative relationship with aggregate support for free trade (World Bank 2000).

Unlike traditional trade theory, transport costs are an important element of new trade theory: proximity to the world's epicenters of production and consumption can be a source of comparative advantage. To capture this, I include *Distance to Markets*:

$$Distance\ to\ Markets_i = \sum_j \left( \frac{GDP_j}{World\ GDP} D_{ij}^{-0.6} \right)^{-0.6} \quad (12).$$

In words, this variable is akin to taking the inverse of country  $i$ 's distance ( $D_{ij}$ ) from country  $j$ , weighting it by country  $j$ 's share of world GDP, then summing the reciprocal of these values over all  $J$  countries in the world (Leamer 1997).<sup>12</sup> What occurs when  $i=j$ —that is, what is a

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furniture, other household goods, household appliances, personal transportation equipment, and machinery and equipment.

<sup>12</sup> Why are  $D_{ij}$  and the weighted  $D_{ij}$  raised to the -0.6? Empirical research within new trade theory on “gravity models” indicates that trade between any two countries is proportional to  $D_{ij}^{-0.6}$  weighted by the product of their GDPs (Leamer 1997).

country's distance to itself ( $D_{ii}$ )? Countries with large land masses have significant internal impediments to trade, as much of their production and consumption is distant from foreign borders. Small countries do not suffer from such high internal transport costs, so a value of 0 for distance to self is unsatisfactory. Instead, distance to self is simply defined as a country's land mass converted into a linear radius on the assumption that the country is perfectly circular:

$$D_{ii} = \left( \frac{A_i}{\mathbf{P}} \right)^{.5} \quad (13).$$

In the end, after dividing by 1000, distance to markets has a mean of 3.0 and ranges from 0.8 (Germany) to 6.6 (South Africa). I expect it to be negatively correlated with pro-trade opinion.

## Results

The results of four different models are shown in Table 2, although only models 1 through 3 should be used to draw substantive conclusions. The six independent variables described above were included in these first three models, but three different specifications were used to check for the robustness of the findings. Model 1 is a simple OLS regression. Model 2 “dummies out” Japan, which is a potentially influential observation because it is extremely expensive, skilled *and* pro-trade. Model 3 is a robust regression model that downweights influential observations. Such a specification is useful in small- $N$  models that are prone to being influenced by a single case.<sup>13</sup>

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<sup>13</sup> This bounded influence procedure assigns a probability weight to each case: influential observations receive low weights while others receive a weight near one. The weight for a given case is inversely proportional to its Cook's distance, a measure of each case's influence on the coefficient estimates. Cases with extremely high Cook's distances, like Nigeria, are dropped.

Despite the different specifications, the substantive conclusions are equivalent across all three models. Before turning to results for the H-O model, it is worth mentioning the findings on the other variables. The one non-economic variable in the model performs well: countries with high degrees of nationalist support also tend to have protectionist citizens. New trade theory has more mixed support. On the one hand, the world's citizens are very sensitive to transport costs: distance from large markets like the US, the EU and Japan tends to be strongly associated with anti-trade attitudes. On the other hand, economies of scale appears to be irrelevant.

[Table 2 (p. 39) about here]

More importantly, consumer interests matter a lot: citizens in expensive countries see trade liberalization as a remedy to the rents they pay on tradable goods. This finding is even robust to dropping the Japanese case (model 2). Indeed, the Japanese dummy variable is not even statistically significant, indicating that Japanese citizens' extreme support for free trade is well-explained by the theoretical variables. The land abundance hypothesis is not supported, but a very interesting pattern underlies the skill abundance result.

As a variable about which there is much debate and speculation, country skill is worth a fuller discussion. In line with H-O's predictions, skill has a negative and statistically significant coefficient, a reflection of the small number of citizens in skill-abundant countries that are actually skill-endowed. Why did this strong negative pattern emerge in the regression model when the zero-order correlation is essentially zero? This bivariate relationship actually masks a strain of what might be called "conditional protectionism" in the North. Because they have, on average, more expensive tradables ( $r_{skill-pricelevel} = +.53$ ), shorter distances to markets ( $r_{skill-distance} = -.25$ ), and less nationalist citizens ( $r_{skill-nationalism} = -.20$ ), citizens in skill-abundant countries *are supposed to be* more pro-trade than those in skill-scarce ones. After controlling for these

variables, however, skill is negatively associated with support for free trade, as models 1 through 3 indicate. Figure 3 demonstrates this conditional relationship graphically by plotting the residuals for the 41 countries (three-letter country codes are identified in the Appendix) from model 4—a regression model that contains only these three variables—against country skill level. In short, the skill abundant nations of the North have more protectionist citizens than their economic interests and less nationalist beliefs would dictate.

[Figure 3 (p. 40) about here]

## CONCLUSION

Consumption matters, then, for explaining trade attitudes. The allure of globalization's benefits for consumer options and prices varies across individuals and countries, a fact that is reflected in overall beliefs about trade policy. The more conventional notions about the sources of trade policy beliefs also hold: employable assets and labor markets are important determinants of citizens' reactions to globalization. These varying sources of support for a unified H-O model emerged, in part, from an analysis of causal heterogeneity in 41 countries. First, heavy consumers of exportables (the poor in skill-scarce countries and the wealthy in skill-abundant ones) tend to be more protectionist than heavy consumers of imports and import-competing goods (skill-abundant countries' poor and skill-scarce countries' wealthy). Second, the ratio of skilled workers' to unskilled workers' support for free trade is greater in skill-abundant countries than in skill-scarce ones. Third, the ratio of rural to urban support for free trade is greater in land-abundant nations than in capital-abundant ones.

Yet this causal heterogeneity varies around substantively important medians. An unequivocal finding is that in most countries, regardless of factor endowments, the poor, the unskilled, and the rural are more protectionist than the wealthy, the skilled, and the urban.

Globalization's critics thus seem to have fodder for their complaints about trade's impact on domestic income equalities. At the same time, however, citizens in poor countries are not necessarily more anti-trade than those in wealthy nations. In fact, after controlling for economic interests, the South is *more enthusiastic* about free trade than the North. Thus, empirical patterns are more nuanced than both globalization's critics and its proponents would expect.

Despite all these findings on explained variation, a final crucial result is that Adam Smith was right: free trade is unpopular in almost every country. Further success in promoting globalization and liberalizing the world trade regime may therefore depend on the recognition that individuals perceive and process trade policy and its impact in various ways: one of the novel findings of the unified H-O model is that trade liberalization's consequences work at cross-purposes. Rich, highly-skilled workers in the developing world may undergo a decline in relative wages because of shifting labor market demand, but they should also experience a countervailing increase in relative purchasing power because of shifting consumer prices. In contrast, poor, unskilled workers in the developed world will have their relative wage decreases somewhat offset by favorable shifts in consumer prices. If elites can convince citizens that free trade may hold something for just about everyone, its future will be bright.

## **APPENDIX: WVS COUNTRIES AND QUESTION WORDINGS**

The 41 countries included in the analysis with their three letter World Bank codes, in order from lowest GDP per capita (at PPP) in 1995 to highest, are Nigeria (NGA), Bangladesh (BGD), Pakistan (PAK), India (IND), Armenia (ARM), Azerbaijan (AZE), Moldova (MDA), China (CHN), Georgia (GEO), Philippines (PHL), Ukraine (UKR), Dominican Republic (DOM), Macedonia (MKD), Peru (PER), Latvia (LVA), Belarus (BLR), Lithuania (LTU), Bulgaria (BGR), Croatia (HRV), Turkey (TUR), Venezuela (VEN), Estonia (EST), Brazil (BRA), Poland (POL), Mexico (MEX), Russia (RUS), Chile (CHL), Uruguay (URY), South Africa (ZAF), Argentina (ARG), Slovenia (SVN), South Korea (KOR), Spain (ESP), Finland (FIN), Sweden (SWE), Australia (AUS), Germany (DEU), Japan (JPN), Norway (NOR), Switzerland (CHE), and the United States (USA). The following countries were part of the 1995 wave of the WVS but did not record trade attitudes: Great Britain, Colombia, Taiwan, and Ghana. Bosnia/Herzegovina and Yugoslavia were excluded due to a lack of macroeconomic data.

*Education:* (1) No formal education, (2) incomplete primary school, (3) complete primary school, (4) incomplete secondary school: technical/vocational type, (5) complete secondary school: technical/vocational type, (6) incomplete secondary: university-preparatory type, (7) complete secondary: university-preparatory type, (8) some university-level education, without degree, (9) university-level education, with degree.

*Income:* Income was coded with the integers 1 through 10, with respondents placing themselves into 1 of 10 ordered categories following this prompt: “Here is a scale of incomes. We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions.” Although respondents were shown categories defined by local currencies, the WVS codebook reports that 1 through 10 correspond roughly to deciles. I took

the natural log of this variable because some relatively wealthy individuals were extreme outliers.

*Occupation*: “In which profession/occupation do you or did you work? If more than one job, the main job?” Interviewers wrote down the raw answers and coders later converted these into the following ordinal categories, which increase with the degree of skill: (1) agricultural worker, (2) farm owner, (3) unskilled manual worker, (4) semi-skilled manual worker or armed forces, (5) skilled manual worker, (6) foreman or supervisor, (7) employer/manager in small business (<10 employees), (8) non-manual office worker, (9) office worker supervisor, (10) employer/manager in medium or large business (>10 employees), (11) professional.

*Town Size*: Interviewers placed respondent town size into one of the following categories: (1) Under 2,000; (2) 2,000 to 5,000; (3) 5,000 to 10,000; (4) 10,000 to 20,000; (5) 20,000 to 50,000; (6) 50,000 to 100,000; (7) 100,000 to 500,000; (8) 500,000 and more.

*Nationalist Sentiment*: “How proud are you to be [nationality], (3) very proud, (2) quite proud, (1) not very proud, (0) not at all proud?”

*Political Interest*: “How interested would you say you are in politics? (1) Not at all interested, (2) not very interested, (3) somewhat interested, (4) very interested.”

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**TABLE 1. Determinants of Individual-Level Trade Policy Attitudes in 41 Countries: Hierarchical Binary Logit Model Estimates**

Independent Variables	Skilled Labor	Land
	Unskilled Labor	Capital
<i>Cross-Level Multiplicative Terms</i>		
Skill <sub>i</sub> × Skill Abundance <sub>j</sub> ( $\mathbf{g}_{(skill_i)1}$ )	.2285** (.0327)	
Income <sub>i</sub> × Skill Abundance <sub>j</sub> ( $\mathbf{g}_{(income_i)1}$ )	-.0831** (.0311)	
Political Interest <sub>i</sub> × Skill Abundance <sub>j</sub>	.0580* (.0236)	
Town Size <sub>i</sub> × Land Abundance <sub>j</sub> ( $\mathbf{g}_{(Town Size_i)1}$ )		-.0535* (.0244)
Income <sub>i</sub> × Land Abundance <sub>j</sub> ( $\mathbf{g}_{(income_i)1}$ )		-.0053 (.0255)
Political Interest <sub>i</sub> × Land Abundance <sub>j</sub>		-.0271 (.0199)
<i>Individual-Level Variables</i>		
Skill <sub>i</sub> ( $\mathbf{g}_{(skill_i)0}$ )	.1594** (.0380)	
Income <sub>i</sub> ( $\mathbf{g}_{(income_i)0}$ )	.1176** (.0320)	.1940** (.0316)
NO-EDs <sub>i</sub>	.1352 (.0819)	
Town Size <sub>i</sub> ( $\mathbf{g}_{(Town Size_i)0}$ )		.1173** (.0366)
Age <sub>i</sub>	-.0123** (.0018)	-.0144** (.0023)
Woman <sub>i</sub>	-.1581** (.0434)	-.1449** (.0430)
Political Interest <sub>i</sub>	-.0148 (.0137)	.0444* (.0242)
Nationalist Sentiment <sub>i</sub>	-.1564** (.0228)	-.1853** (.0304)
Intercept	.0312 (.2031)	.0289 (.2009)
<p><i>Note:</i> N=53,961, J=41. Entries are restricted maximum likelihood estimates with standard errors in parentheses. The dependent variable is a binary indicator of (0) protectionist or (1) pro-trade sentiment. Variance components (<math>\mathbf{t}_{xx}</math>, or <math>\text{Var}[u_{xj}]</math>) for each individual-level coefficient are available from the author upon request. Statistically significant at the *.05 and **.01 level.</p>		

Figure 1: Estimates and 95% Confidence Intervals for  $E(\beta_{(Income)j})$  by Country Skill Endowment

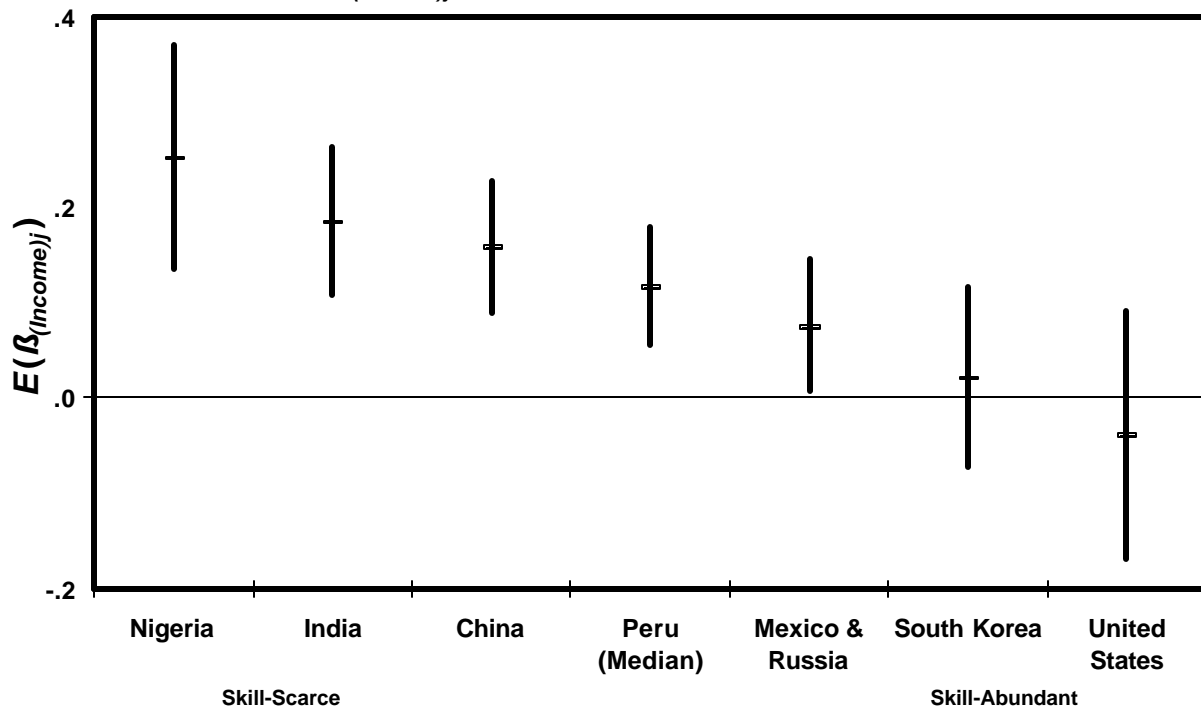
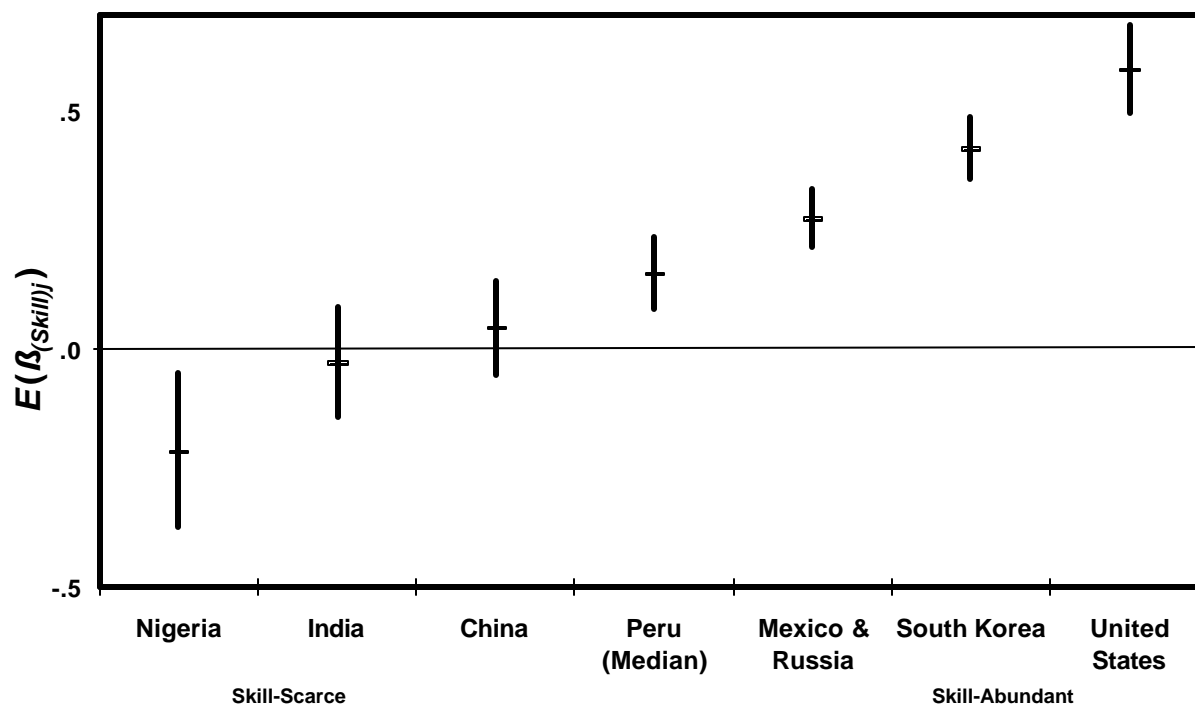


Figure 2: Estimates and 95% Confidence Intervals for  $E(\beta_{(Skill)_j})$  by Country Skill Endowment



**TABLE 2. Determinants of Country-Level Support for Free Trade: Regression Estimates**

Independent Variables	1: OLS	2: OLS with Japan dummy	3: Robust Regression	4: OLS for Figure 3
Price Level of Tradables	.1482** (.0452)	.1148* (.0513)	.2143** (.0840)	.0745* (.0371)
Skill Abundance	-.0790** (.0315)	-.0650* (.0328)	-.0990* (.0443)	
Land Abundance	-.0203 (.0249)	-.0085 (.0261)	.0083 (.0359)	
Distance to Markets	-.0299** (.0100)	-.0304** (.0097)	-.0310** (.0113)	-.0272** (.0102)
Economies of Scale	.0054 (.0142)	-.0020 (.0149)	.0105 (.0212)	
Nationalist Sentiment	-.2463** (.0582)	-.2177** (.0613)	-.2384** (.0692)	-.2173** (.0551)
Japan		.1854 (.1323)		
Constant	.9106 (.1383)	.8686 (.1390)	.8233 (.1907)	.8727 (.1341)
<i>N</i>	41	41	40	41
<i>R</i> <sup>2</sup>	.65	.67	--	.56

*Note:* Entries are slope estimates with standard errors in parentheses. Results are from 20 multiply imputed data sets (King *et al* 2001; Honaker *et al* 2001). Nigeria is dropped by the robust regression model. Statistically significant at the \*.05 and \*\*.01 level.

