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Cleavages in Public Preferences about Globalization

Given the evidence presented in chapter 2 on preferences about globalization policies, an important question to explore is whether any opinion cleavages underlie them. There may be none; subgroups across demographic, geographic, political, or other lines may have broadly similar opinions. Alternatively, there may be clear constituencies that tend to support or oppose globalization. As discussed in chapter 1, identifying such cleavages will provide a richer understanding of Americans' preferences about globalization. In this chapter we focus on opinions about trade and immigration policy. We first outline some theory about possible cleavages, and then turn to our data analysis.

Theory of Policy Preferences

In this section we briefly discuss some standard economic models of policy preferences that organize our empirical analysis. We seek to explain why some individuals might support certain types of globalization while others are likely to be in opposition. As with much of the literature on the political economy of trade and immigration policy, we assume that individuals evaluate policies on the basis of individual welfare, not aggregate national welfare—that is, of self-interest. The assumption is that

Much of the material in this chapter comes from Scheve and Slaughter (2001a, b). For a more complete discussion of many of the issues in this chapter, the reader is referred to those earlier works.

people care about how policies affect them personally, without regard for the policies' national effects. Further, we assume that personal welfare depends on current labor income. We acknowledge that welfare may also depend on other economic elements, such as asset ownership, as well as on noneconomic considerations. In our data analysis we will examine these other elements, both to provide a more complete understanding of opinion cleavages and to verify the robustness of any labor-market divisions that might emerge.

For simplicity, our theoretical discussion makes two additional assumptions. First, individuals know with certainty the effects policies have or will have on their incomes. This is a common but not universal assumption in the literature: individuals may or may not know beforehand how policy changes will affect their welfare (see, e.g., Fernandez and Rodrik 1991). Second, we assume full employment. In reality, some people are not in the labor force, and some in the labor force are not employed. Appendix A covers theoretical topics like these in greater detail, and we will also revisit them in our empirical analysis.

With these assumptions made explicit, it follows that the general form of our explanation of why some individuals prefer liberalization while others do not is quite simply that people support policy alternatives that improve the incomes they earn in the labor market. To identify which policies are beneficial to which individuals, we need to turn to economic theories about the relationship between policies and labor income.

Trade Policy and Income

Standard trade theory predicts that trade's effect on people's current income depends on the degree of intersectoral factor mobility or the degree of factor specificity—that is, the extent to which labor, capital, or any other input into the production of goods and services that individuals own can move about, or be moved about, among industries. The factor of production that is the focus of our discussion is labor. So, factor mobility refers to how easily individual workers can employ their skills across different industries. There are two main models to consider. In a Heckscher-Ohlin (HO) framework, where factors—in this case, workers—can move costlessly across sectors or industries, factor incomes—that is, labor wages and other income—tend to vary by factor type—that is, by different categories of workers. In contrast, in a Ricardo-Viner (RV) framework, where some or all factors cannot move to other sectors, factor incomes tend to vary by industry. Because factor mobility increases over time, it is often thought the HO model better describes longer time horizons, whereas the RV model better describes shorter ones.[1]

1. Many studies have examined how an RV short-run equilibrium transforms over time into an HO long-run equilibrium. See, for example, Mussa (1978) and Neary (1978).

In both models, changes in trade policy affect factor incomes by changing the country's product prices. The HO assumption that factors can move costlessly across sectors means that each factor earns the same return in all industries. In this model—again, assuming the factors in question are different kinds of labor—trade liberalization tends to raise wages for the types of workers that are employed relatively intensively in sectors whose relative prices are rising, and to lower wages for the types of workers employed relatively intensively where relative prices are falling (per the Stolper-Samuelson theorem, 1941).

This process works via cross-industry shifts in labor demand. Suppose international trade changes domestic product prices—for example, because of changes in US trade barriers (e.g., the United States eliminates apparel quotas in the Multifiber Arrangement) or because of changes in supply and demand in world markets (e.g., world apparel prices decline as China produces more). Whatever the case, at initial wages any industry enjoying a rise in its product price now earns positive profits, and any industry suffering a fall in its price now earns negative profits. Profit-maximizing firms respond by trying to increase output in profitable sectors and reduce output in unprofitable sectors. As firms do this, economy-wide demand for different kinds of labor changes. Relative labor demand increases for the types of workers that are employed relatively intensively in expanding sectors and reduces for the workers intensively employed in the contracting sectors. For equilibrium to be restored, at fixed labor supply, relative wages for the different types of workers must adjust in response to the demand shifts until profit opportunities are arbitraged away.

Note that in the HO framework, it is not just people working in traded industries—industries engaged in trade—who face wage pressures from international trade. Workers in nontraded industries do too, not directly through international product-market competition, but indirectly through domestic labor-market competition. Thus if US trade barriers in apparel were removed, it would not just be American apparel workers who would face wage changes. It would be all workers in the US economy competing in the same labor market as these apparel workers—whatever industry they work in.

So what predictions does the HO framework make about opinion cleavages on US trade policy? First, we must specify what exactly we mean by different types of workers. Economists typically distinguish types in terms of ''human capital'', i.e., a wide set of on-the-job skills (literacy, numeracy, problem-solving ability, etc.). Empirically, worker skills are usually measured via educational attainment, occupation classification, or employment experience. Second, it is necessary to make an assumption about which sectors of the economy receive trade protection. For the HO

framework, it is usually assumed that the government of the country in question extends trade protection to the sectors that employ relatively intensively the factors of production—for our purposes, different skill groups of workers—in which the country is poorly endowed relative to the rest of the world, because in the country's opening from autarky to free trade, these workers undergo income declines. In contrast, the workers with which the country is well endowed relative to the rest of the world undergo income gains in the opening from autarky to free trade. Thus the types of workers that a country has in abundant supply support freer trade, and its scarce types of workers oppose it—regardless of industry of employment.

Many studies (e.g., Leamer 1984) have shown that the United States is well endowed with more-skilled labor relative to the rest of the world. And in recent decades, the US pattern of trade protection, at least for tariffs in manufacturing, accords with the model's predictions: US tariffs throughout the 1970s and 1980s were higher in less-skill-intensive industries (Haskel and Slaughter 2000). According to the HO model, US workers with relatively more skills should support freer trade, and those with less skills should be more likely to oppose it.

The RV model, by contrast, assumes that some or even all types of labor cannot move across sectors, thanks to mobility barriers such as industry-specific human capital gained through workers' on-the-job experience. These immobile, or specific, workers need not earn the same return in all sectors. Instead, their income is linked to their sector of employment as trade liberalization-induced changes in relative product prices redistribute income across sectors rather than across different types of labor. Sectors whose product prices fall—presumably sectors with comparative disadvantage—realize income losses for their workers, and sectors whose product prices rise—presumably sectors with comparative advantage—realize income gains for their workers. Thus if trade liberalization lowers the US domestic price of apparel, then workers specific to that sector, regardless of what type of workers they are—that is, what their skill levels are—suffer income declines.

In the RV model, trade policy preferences are determined by sector of employment. Workers employed in sectors with product prices elevated by trade protection should oppose trade liberalization, and workers employed in sectors with prices lowered by protection should support it. What about the preferences of workers in nontraded industries? Unlike in the HO model, here workers in nontraded industries are insulated from international product-market competition to the extent that domestic prices of nontraded goods, by definition, are not directly affected by trade pressures. But insofar as freer trade raises national income, if income elasticities of demand for nontraded goods are positive, then freer trade should raise prices of nontraded goods by raising demand for them. So

in an RV model, workers in nontraded sectors support freer trade, but perhaps less than do workers in sectors that have comparative advantage, because trade policy's effect on prices of nontraded goods works indirectly through demand for those goods.[2]

Immigration Policy and Income

To make the connection between individual factor income and immigration policy preferences, we briefly summarize three models: the HO trade model, the factor-proportions-analysis model, and the area-analysis model.[3] For all three models, we assume that US citizens know that current immigrant inflows increase the relative supply of less-skilled workers. This assumption clearly reflects the facts about US immigration in recent decades (see, e.g., Borjas et al. 1997). It implies that preferences depend on how an immigration-induced shift in US relative labor supply toward less-skilled workers affects factor incomes. For simplicity we assume just two factors of production, more-skilled and less-skilled labor.

The HO trade model usually assumes interregional labor mobility as well as the intersectoral labor mobility discussed above, which means that there are no geographically segmented ''local'' labor markets. The wage effects of immigration depend on the magnitude of the immigration shock and on whether the country's economy is large enough to have any influence on world product prices.

In the HO framework, immigrant inflows sometimes have no wage effects at all; immigrants are completely absorbed via changes in output mix. With the change in supplies of more- and less-skilled workers available to hire, firms have an incentive to produce more of those products that employ relatively intensively the now more-abundant less-skilled workers (per the Rybczynski theorem, 1955). Thanks to trade, these output changes can be absorbed into world markets, and if the country is too small for this absorption to affect world prices, then its wages do not change either. The long-run nature of the HO model is crucial here, as changes in output mix take time.

But in the HO framework, immigrant inflows sometimes do change wages. For example, if the country is sufficiently large, then its output changes do alter world prices and thus wages (via the Stolper-Samuelson process). Or if the immigration shock is sufficiently large, then firms have an incentive to start up entirely new industries, which means that

2. If some factors remain mobile across sectors in a Ricardo-Viner model, their factor prices are not so clearly linked to product-price changes. Changes in real factor prices for these mobile factors are ambiguous: the direction of change depends on the consumption basket of these mobile factors. In the above discussion we focus only on the specific factors.

3. The terms ''area analysis'' and ''factor-proportions analysis'' come from Borjas et al. (1996).

absorption entails changes in both output and wages. In either case, less-skilled wages fall relative to more-skilled wages.

Thus the HO model has different predictions about the link between skill levels and immigration policy preferences. If individuals think that immigration does not alter wages, then there should be no link between skill levels and preferences. In this case, people evaluate immigration on the basis of other considerations. If individuals think that immigration affects wages, then less-skilled workers nationwide should prefer policies that lower immigration inflows, and more-skilled workers nationwide should prefer policies that raise immigration inflows.

Like the HO model, the factor-proportions-analysis model also assumes a national labor market. But unlike the HO model, it assumes a single aggregate output sector. This means that there can be no changes in output mix to absorb immigrants. Instead immigrants price themselves into employment via lower wages. Any immigration inflow affects national wages as one might expect without changes in output mix: less-skilled immigrants accept lower wages to induce firms to hire them. The larger the immigrant inflow, the larger the wage changes.

This model makes a single prediction about the link between skill levels and immigration policy preferences: Less-skilled workers nationwide should prefer policies that lower immigration inflows, and more-skilled workers nationwide should prefer policies that raise immigration inflows. Note that this prediction can also come from the HO model.

Like the previous model, the area-analysis model also assumes a single output sector. However, it assumes distinct, geographically segmented labor markets within a country. For countries like the United States that have a great deal of internal migration, this assumption is probably inappropriate in the very long run. It may be realistic over shorter time spans, however, thanks to frictions such as information and transportation costs that people must incur to move. The more important these frictions are, the more sensible it is to treat Portland, Maine, and Portland, Oregon, as two distinct labor markets. Hence economists often analyze ''local'' labor markets within the United States, usually defined by states, cities, or metropolitan areas (e.g., the Twin Cities of Minneapolis and St. Paul plus surrounding suburbs). Each local market has its own equilibrium wages determined by local supply and local demand.

In this framework, how do Americans think about the labor-market effects of immigration? Well, it depends on where immigrants settle. If there is literally no mobility between local labor markets, then immigrants pressure wages only in the ''gateway'' communities where they arrive—and it is well documented that immigrants are indeed concentrated in these gateway communities. In 1990, 75 percent of all immigrants residing in the United States lived in one of six gateway states: California, Florida, Illinois, New Jersey, New York, and Texas. Borjas et al. (1996) report that

in 1992, 60 percent of all US legal immigrants came into California or New York alone; another 20 percent entered the other four gateway states.

What does this framework predict for immigration policy preferences? In the area-analysis model, less-skilled workers in gateway communities should prefer policies that lower immigration inflows, and more-skilled workers should prefer policies that raise inflows. In nongateway communities there should be no correlation between workers' skill levels and their preferences. More generally, with some labor mobility, similarly skilled workers everywhere should have the same preferences, but the link between skill levels and preferences should be stronger among workers in gateway communities. Less-skilled workers in gateway communities should have stronger preferences for more restrictive immigration policies than less-skilled workers in non-gateway communities, and more-skilled workers in gateway communities should have stronger preferences for less restrictive immigration policies than more-skilled workers in non-gateway communities.

Summary

We have sketched out a number of possible opinion cleavages under the assumption that people evaluate trade and immigration policy on the basis of how policy alternatives impact their labor income. Trade policy preferences may cleave along skill levels—as measured by education or income—and along industry of employment. Immigration policy preferences may cleave along skill levels and geography. Further, different cleavages may hold over different time horizons, as sectoral or geographic labor mobility increases over time. In light of these predictions, we now turn to the data.

Data Description

We analyzed data from the 1992, 1994, and 1996 National Election Studies (NES) surveys (Sapiro et al. 1998), each of which is an extensive survey of current political opinions based on an individual-level stratified random sample of the US population. The NES surveys contain direct measures of individual preferences about trade and immigration policy.

These surveys also record a wealth of respondent information such as educational attainment, occupation, industry of employment, and county of residence. With this information, we built data sets with several plausible measures of ''exposure'' to freer trade and immigration across different types of workers, industries, counties, and many other demographic and political control variables such as age, gender, ideology, and race. Merging this information with the NES survey data yielded individual-level data sets identifying both stated policy preferences and potential trade and

immigration exposure through several channels. We then evaluated how these preferences vary with the individual characteristics that might matter, as predicted by the theories we reviewed in the previous section.

Here is the NES survey question about trade policy preferences:[4] ''Some people have suggested placing new limits on foreign imports in order to protect American jobs. Others say that such limits would raise consumer prices and hurt American exports. Do you favor or oppose placing new limits on imports, or haven't you thought much about this?'' This question requires respondents to reveal their general position on the proper direction for US trade policy. Note that the question does not mention what sector(s) would receive import restrictions. We assume that respondents think that import limits will be placed on sectors that have comparative disadvantage. This assumption seems sensible and plausible, and it allows us to construct measures of individual trade exposure that follow closely from the theory. We constructed the dichotomous variable *Trade Opinion* by coding responses of those individuals favoring protection as 1 and of those opposing it as 0.

Here is the NES survey question about immigration policy preferences: ''Do you think the number of immigrants from foreign countries who are permitted to come to the United States to live should be increased a little, increased a lot, decreased a little, decreased a lot, or left the same as it is now?'' This question requires respondents to reveal their general position on the proper direction for US immigration policy. Note that the question does not ask what skill mix immigrants would have relative to natives. We assume that respondents think that immigrant inflows would increase the relative supply of less-skilled workers. As discussed in the previous section, this assumption clearly reflects the facts about US immigration in recent decades.[5] We constructed the variable *Immigration Opinion* by coding responses of those individuals responding ''decreased a lot'' as 5, and so on down to 1 for those responding ''increased a lot.'' Thus, higher scores on *Immigration Opinion* indicate preferences for more restrictive policy.

We then merged data for these survey questions with measures of trade and immigration exposure, in consonance with the hypotheses outlined in the previous section (see appendix B for further details about variable construction). To test whether skill levels are a key determinant of policy preferences, for each individual-year observation we constructed two variables measuring skill levels. One was *Education Years,* recorded in the

4. This question was not asked in the 1994 NES survey, so our trade analysis is limited to 1992 and 1996 data.

5. We recognize that this assumption abstracts from other interesting facts about the distribution of the skill levels of US immigrants. For example, Borjas et al. (1997, 7) show that the skill distribution of US immigration has concentrations at both the high-skill and low-skill ends of the distribution.

NES survey as years of education completed. The other was *Occupation Wage,* which was that year's average weekly wage nationwide for the three-digit Census Occupation Code occupation recorded for the individual. Educational attainment is a common skills measure; *Occupation Wage* assumes that average national earnings for a given occupation are determined primarily by the skills required for that occupation. According to the HO model, individuals with less education or in lower-wage occupations are more likely to benefit from trade restrictions on sectors that have a comparative disadvantage and thus are more likely to support new trade barriers.

To test whether sector of employment matters for trade policy preferences, for each person we constructed two measures of their industry's trade exposure. Each was based on the individual's recorded industry of employment coded according to the 1980 Census Industry Code classification. The first, *Sector Net Export Share,* is the industry's 1992 net exports (i.e., exports minus imports) as a share of its output. This variable follows the common assumption that an industry's comparative advantage is reflected in its net exports: industries that have positive net exports are assumed to have comparative advantage, and industries that have negative net exports are assumed to have comparative disadvantage. This variable covers manufacturing, agriculture, and tradable services; for all nontradable services industries, we set this variable equal to zero.

The second measure is the industry's 1992 US tariff rate, *Sector Tariff,* constructed as tariff duties collected as a share of customs-value imports. We assume that industries with higher values for *Sector Tariff* have more of a comparative disadvantage. The tariff data cover all tradable industries in agriculture and manufacturing; for all other sectors, we set this variable equal to zero. For both measures, according to the RV model, workers in industries with greater revealed comparative disadvantage are more likely to support trade protection for these industries.

For immigration policy preferences, we already have the individual skills measures *Education Years* and *Occupation Wage*. Examining whether immigration preferences vary across regions by immigrant inflows requires measures of where respondents live combined with information about gateway communities. For each respondent, the NES surveys record the county, state, and (where appropriate) metropolitan statistical area (MSA) of residence. We combined this information with immigration data to construct several alternative measures of residence in a high-immigration area. Below, results are reported for the dichotomous variable *High-Immigration MSA,* equal to 1 for residents living in a county or MSA where at least 10 percent of the 1990 population was immigrants (versus 7.9 percent for the overall population).

For the analyses of both trade and immigration preferences, we also constructed several measures of possible noneconomic determinants of

Table 3.1 Summary statistics for analysis of trade policy preferences

Variable	1992	1996
Trade Opinion	0.671	0.534
	(0.470)	(0.499)
Occupation Wage	0.532	0.652
	(0.187)	(0.231)
Education Years	13.288	13.872
	(2.610)	(2.554)
Sector Tariff	0.006	0.006
	(0.019)	(0.019)
Sector Net Export Share	−0.004	−0.001
	(0.091)	(0.092)
Observations	1,736	846

Note: These summary statistics are multiple imputation estimates based on the 10 imputed data sets for each year. Each cell reports the variable mean and (in parentheses) its standard deviation. *Trade Opinion* records people's responses to the question, ''Some people have suggested placing new limits on foreign imports in order to protect American jobs. Others say that such limits would raise consumer prices and hurt American exports. Do you favor or oppose placing new limits on imports?'' This is a dichotomous variable, which codes responses of those individuals favoring protection as 1 and of those opposing it as 0. *Occupation Wage* is the actual nominal weekly wage divided by 1,000.

preferences. These measures include variables such as gender, age, race, ethnicity, personal immigrant status, party identification, and political ideology. The precise definitions for these variables may be found in appendix B.

Table 3.1 reports summary statistics of our trade opinion measure and our key trade exposure variables.[6] Note that in 1992, about 67 percent of respondents favored trade restrictions and 33 percent opposed them. In 1996, among those giving an opinion, preferences were more evenly divided, with 53 percent supporting restrictions and 47 percent opposed. The averages reported in table 3.1 are very similar to national means obtained from other data sources. Table 3.2 reports summary statistics of our immigration opinion measure and our key immigration exposure variables. The ''average'' value for *Immigration Opinion* over the three surveys was about 3.8, between the responses ''left the same as it is now'' and ''decreased a little,'' though closest to ''decreased a little.''[7]

6. These estimates and all the statistical analyses in this chapter rely on multiple imputation to address missing data problems. These procedures are explained in detail in appendix C.

7. Note that tables 3.1 and 3.2 indicate that the trade and immigration analyses are based on a different number of observations. This resulted from our decision not to impute answers

Table 3.2 Summary statistics for analysis of immigration policy preferences

Variable	1992	1994	1996
Immigration Opinion	3.595	3.982	3.785
	(1.027)	(1.064)	(0.982)
Occupation Wage	0.512	0.574	0.601
	(0.187)	(0.227)	(0.225)
Education Years	12.923	13.153	13.323
	(2.815)	(2.637)	(2.660)
High-Immigration MSA	0.235	0.227	0.215
	(0.424)	(0.419)	(0.411)
Observations	2,485	1,795	1,714

MSA = metropolitan statistical area.

Note: These summary statistics are multiple imputation estimates based on the 10 imputed data sets for each year. Each cell reports the variable mean and (in parentheses) its standard deviation. *Immigration Opinion* records people's responses to the question, ''Do you think the number of immigrants from foreign countries who are permitted to come to the United States to live should be increased a little, increased a lot, decreased a little, decreased a lot, or left the same as it is now?'' This variable codes responses of those individuals responding ''decreased a lot'' as 5, and so on down to 1 for those responding ''increased a lot.'' *Occupation Wage* reports the actual nominal weekly wage divided by 1,000.

Econometric Specifications

For trade policy preferences, our empirical work aims to test how different types of trade exposure affect the probability that an individual supports trade restrictions. Again, *Trade Opinion* is coded 1 for those who support trade restrictions and 0 for those opposed. We model the variation in these zero-one responses using a familiar logistic form, which assumes that responses vary with a set of individual-specific explanatory variables hypothesized to affect the probability of supporting trade restrictions. We estimate the effect of these explanatory variables using logistic regressions.[8]

for those individuals who responded to the trade question ''haven't you thought much about this.'' This specification decision is discussed in appendix C, and alternative approaches are discussed below. All the findings reported in this chapter are robust to alternative treatments of this response category as well as to alternative approaches for dealing with missing data generally in both the trade and immigration analyses.

8. Let $E(Trade\ Opinion_i) = \Pr(Trade\ Opinion_i = 1 \mid \pi_i) = \pi_i$, where i indexes each observation and π_i equals the probability that an individual supports trade restrictions. We model the variation in π_i according to a logistic form given by

$$\pi_i = \frac{1}{1+\exp(-x_i\beta)}.$$

The theory discussed earlier suggests alternative sets of explanatory variables to include in the analysis. Our baseline cases include eight different models. Each of the first four models includes just one of the skill or industry trade-exposure regressors. Models 5 through 8 test pairs of explanatory variables, one measuring skill levels and the other industry trade exposure. Each year of data is analyzed separately to allow for any differences across years. Specifications of these models employing alternative measures of trade exposure, using noneconomic variables, and estimating alternative econometric models are discussed below.

For immigration policy preferences, the empirical work also aims to test how skill levels affect the probability that an individual supports a certain level of legal immigration. The level of immigration a respondent prefers could theoretically take on any value, but the NES surveys record only which of five ordered categories the respondent chose. There is no strong reason to believe *ex ante* that these five categories are separated by equal intervals, so a linear regression model might produce biased estimates. The familiar appropriate model for this situation is an ordered probit, which estimates not only a set of parameters measuring the strength of explanatory variables but also additional parameters representing unobserved category thresholds.

Given these considerations, we estimated ordered probit models where the expected mean of the unobserved preferred immigration level is hypothesized to be a linear function of the respondent's skill level, a vector of demographic identifiers, political orientation, and (perhaps) the immigration concentration in the respondent's community.[9] The key hypothesis is whether more-skilled individuals are less likely to support restrictive immigration policies, as predicted in the HO trade model and in the factor-proportions-analysis model. Accordingly, the baseline specifications regress stated immigration policy preferences on skill levels, demographic identifiers, and political orientation. In a second set of specifications, we also included a zero-one variable indicating whether or not the respondent lives in a high-immigration area and an interaction term between this indicator and the respondent's skill level. These second

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In this equation, x_i is a vector of individual-specific explanatory variables hypothesized to affect the probability of supporting trade restrictions, and β is a vector of effect parameters. Our standard errors on these parameter estimates are White robust standard errors to account for heteroskedasticity.

9. Our analyses of trade and immigration opinions employ control variables such as demographic identifiers and measures of political orientation. For the trade analysis, these variables are not included in the baseline analyses but are employed in the robustness checks presented below. For the immigration analysis, findings in previous studies of immigration opinions suggested inclusion of the control variables even in the baseline models (Citrin et al. 1997; Espenshade and Hempstead 1996). The skills findings presented below for both trade and immigration are robust to inclusion or exclusion of the controls.

Table 3.3 Determinants of individual opinion on international trade restrictions, 1992

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	1.642	3.648	0.696	0.711	1.625	1.642	3.651	3.650
	(0.168)	(0.350)	(0.054)	(0.051)	(0.170)	(0.168)	(0.355)	(0.351)
Occupation Wage	−1.716				−1.711	−1.720		
	(0.288)				(0.288)	(0.288)		
Education Years		−0.217					−0.217	−0.217
		(0.025)					(0.025)	(0.025)
Sector Tariff			2.730		2.420		−0.137	
			(2.994)		(3.089)		(2.976)	
Sector Net Export Share				−0.697		−0.720		0.027
				(0.612)		(0.614)		(0.615)

Note: These results are multiple imputation estimates of logit coefficients, with 1,736 observations for each of the 10 imputed data sets based on the 1992 NES survey data. Each cell reports the coefficient estimate and (in parentheses) its standard error. The dependent variable is individual opinions about US trade policy, a dichotomous variable defined such that 1 indicates preferences favoring trade restrictions and 0 indicates opposition.

specifications test whether the skills-immigration correlation is strongest in high-immigration labor markets, as in the area-analysis model. Again, each year of data is analyzed separately to allow for any differences across years.

Empirical Results: Do Skill Levels Affect Trade Policy Preferences?

The results of our logistic regressions for models 1 through 8 strongly support the hypothesis that individuals' skill levels—as measured by education and income—determine trade policy preferences. Little evidence is found consistent with the hypothesis that a person's industry of employment influences policy preferences.

The parameter estimates and their standard errors from models 1 through 8 for the 1992 and 1996 data are reported in tables 3.3 and 3.4. However, these coefficient estimates alone do not answer the key substantive question of how changes in skill levels and industry trade exposure affect the probability that an individual will support trade restrictions. To answer this question, the estimates from the regression models can be used to conduct simulations calculating the effect on the probability that an individual supports trade restrictions of changing one

Table 3.4 Determinants of individual opinion on international trade restrictions, 1996

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	1.625	4.031	0.084	0.137	1.555	1.610	4.028	4.063
	(0.240)	(0.519)	(0.073)	(0.069)	(0.245)	(0.242)	(0.540)	(0.529)
Occupation Wage	−2.280				−2.232	−2.257		
	(0.353)				(0.355)	(0.356)		
Education Years		−0.279					−0.278	−0.281
		(0.036)					(0.037)	(0.037)
Sector Tariff			8.885		6.401		0.124	
			(4.242)		(3.918)		(4.357)	
Sector Net Export Share				−1.180		−0.518		0.294
				(0.858)		(0.795)		(0.810)

Note: These results are multiple imputation estimates of logit coefficients with 846 observations for each of the 10 imputed data sets based on the 1996 NES survey data. Each cell reports the coefficient estimate and (in parentheses) its standard error. The dependent variable is individual opinions about US trade policy, a dichotomous variable defined such that 1 indicates preferences favoring trade restrictions and 0 indicates opposition.

variable from a typical below-average value to a typical above-average value while holding the other variables constant at their means.[10]

Tables 3.5 and 3.6 report the simulation results for models 5 through 8 for the 1992 and the 1996 data. Each row lists the estimated effect on the probability of supporting trade restrictions of an increase in that row's variable from one standard deviation below its sample mean to one standard deviation above, with all other variables held constant at their means. For example, the 1992 results from model 5 indicate that

10. This simulation procedure is best described with reference to a specific model and variable of interest. Consider model 5 and *Occupation Wage* (this model's other regressor is *Sector Tariff*) for the 1992 analysis. Recognizing that the parameters reported for this model are estimated with uncertainty, we drew 1,000 simulated sets of parameters from their sampling distribution (defined as a multivariate normal distribution with the mean equal to the maximum likelihood parameter estimates and the variance equal to the variance-covariance matrix of these estimates). For each of the 1,000 simulated sets of coefficients we then calculated two probabilities. First, we calculated the estimated probability of supporting trade restrictions when *Occupation Wage* is equal to one standard deviation below its mean and *Sector Tariff* is equal to its mean. Second, we calculated the estimated probability of supporting trade restrictions when *Occupation Wage* is one standard deviation above its mean and *Sector Tariff* is held at its mean. The difference between these two estimated probabilities is the estimated difference in the probability of supporting trade restrictions between an individual whose skill level is one standard deviation below the mean and an individual whose skill level is one standard deviation above the mean. We calculated this difference 1,000 times, and then, to show the distribution of this difference, we calculated its mean, its standard error, and a 90 percent confidence interval around the mean.

Table 3.5 Change in probability of supporting trade restrictions as a result of a two-standard-deviation increase in the independent variable for each model, 1992

Variable	Model 5	Model 6	Model 7	Model 8
Occupation Wage	−0.139	−0.140		
	(0.023)	(0.022)		
	[−0.178, −0.101]	[−0.175, −0.101]		
Education Years			−0.251	−0.251
			(0.025)	(0.026)
			[−0.293, −0.211]	[−0.293, −0.208]
Sector Tariff	0.014		−0.001	
	(0.017)		(0.004)	
	[−0.013, 0.042]		[−0.006, 0.006]	
Sector Net Export Share		−0.016		0.000
		(0.014)		(0.003)
		[−0.039, 0.007]		[−0.005, 0.005]

Note: For models 5 through 8, we estimated using multiple imputation with a logit specification the effect of factor and industry exposure to international trade on individuals' trade policy opinions. The parameter estimates from this analysis are reported in table 3.3. Here we interpret those results by presenting the impact of a two-standard-deviation increase in each independent variable, holding other variables constant, on the probability that the respondent supports trade restrictions. Each triplet of entries in the table begins with the mean effect from 1,000 simulations of the change in probability of supporting trade restrictions due to an increase from one standard deviation below the independent variable's mean to one standard deviation above it, with all other variables held constant at their means. The standard error of this estimate is then reported in parentheses, and the 90 percent confidence interval for the probability change is presented in brackets.

increasing *Occupational Wage* from one standard deviation below its mean ($345 per week), indicating a worker with below-average skill levels, to one standard deviation above its mean ($719 per week), indicating a worker with above-average skill levels, reduces the probability of supporting trade restrictions by 0.139 on average (standard error, 0.023; 90 percent confidence interval, −0.178 to −0.101).

Across all models in tables 3.5 and 3.6, higher skill levels are strongly correlated with lower probabilities of supporting trade restrictions. The mean estimates of probability changes are substantively significant and much larger in absolute value than those for the industry measures. They are also precisely estimated: all have 90 percent confidence intervals less than zero. In other words, these two tables indicate that if you could put a high school dropout with roughly 11 years of education (10.7 years in 1992, 11.3 years in 1996) through both high school and college, ending up with about 16 years of education (15.9 years in 1992, 16.5 years in 1996), then the probability that this individual supports trade protection would fall by some 25 to 35 percentage points.

Table 3.6 Change in probability of supporting trade restrictions as a result of a two-standard-deviation increase in the independent variable for each model, 1996

Variable	Model 5	Model 6	Model 7	Model 8
Occupation Wage	−0.244 (0.037) [−0.305, −0.184]	−0.247 (0.036) [−0.303, −0.183]		
Education Years			−0.344 (0.039) [−0.411, −0.281]	−0.346 (0.040) [−0.412, −0.282]
Sector Tariff	0.036 (0.022) [0.002, 0.075]		0.001 (0.004) [−0.005, 0.007]	
Sector Net Export Share		−0.011 (0.017) [−0.043, 0.016]		0.001 (0.003) [−0.004, 0.005]

Note: For models 5 through 8, we estimated using multiple imputation with a logit specification the effect of factor and industry exposure to international trade on individuals' trade policy opinions. The parameter estimates from this analysis are reported in table 3.4. Here we interpret those results by presenting the impact of a two-standard-deviation increase in each independent variable, with other variables held constant, on the probability that the respondent supports trade restrictions. Each triplet of entries in the table begins with the mean effect from 1,000 simulations of the change in probability of supporting trade restrictions due to an increase from one standard deviation below the independent variable's mean to one standard deviation above it, with all other variables held constant at their means. The standard error of this estimate is then reported in parentheses, and the 90 percent confidence interval for the probability change is presented in brackets.

In contrast, higher industry trade exposure has much more ambiguous effects. In the bivariate regressions reported in tables 3.3 and 3.4 (models 3 and 4), greater industry trade exposure is correlated with support for trade restrictions, but the estimated effects are statistically significant only for the *Sector Tariff* measure in 1996. Adding the skills measure *Occupation Wage* in models 5 and 6 produces qualitatively similar results. The 1992 and 1996 results for models 7 and 8, which include the skills measure *Education Years,* indicate that neither of the industry measures has a systematic relationship with the probability of supporting trade restrictions. And inspection of table 3.6 reveals that even for the one case in which a trade exposure variable has a marginally statistically significant effect (model 5, 1996), the substantive impact is quite small: a two-standard-deviation increase in *Sector Tariff* results in just a 0.036 increase in the probability of supporting trade restrictions.

Overall, comparing the industry results in tables 3.5 and 3.6 for models 5 and 6 with models 7 and 8, one cannot conclude with a high degree of

confidence that individuals employed in relatively trade-exposed sectors are more likely to support trade restrictions.

The key message of the analyses presented in tables 3.3 through 3.6 is that an individual's skill level rather than industry of employment is strongly correlated with the probability of supporting trade restrictions. The effects of skill levels are large and precise; the effects of industry trade exposure are small and uncertain. These results suggest that people's concern about trade policy is consistent with the HO model, and that intersectoral labor mobility is relatively high in the United States over the time horizons relevant to individuals when they are evaluating trade policy.

Robustness Checks for Trade Policy Preferences

An initial check of the robustness of the trade policy findings is whether the results hold when other regressors are included in the analysis. We added a standard set of demographic and political control variables—measures for age, gender, race, political party identification, and ideology. These are standard control variables in opinion studies and may highlight other cleavages in public opinion about trade policy. These variables might account for variation in individual opinions that are based both on economic concerns in addition to the skills cleavage and on noneconomic considerations.[11]

Table 3.7 reports the results of these regressions for models 5 through 8 for the 1992 and 1996 data. The most important point to take away from this table is that the findings for the skills and industry measures are robust to the inclusion of these control variables. The skills parameters are remarkably stable and remain statistically and substantively significant. In contrast, the industry estimates are always insignificantly different from zero. In these models, skill levels rather than industry of employment explain individual opinions about trade. As for the control variables, for these specifications age and race do not have a consistently significant effect, and women and those who identify with the Democratic Party have systematically more protectionist opinions. The results for political

11. We include the political variables with some caution. To the extent that party identification and political ideology are in part determined by individuals' trade policy positions, including these measures as exogenous independent variables is inappropriate and could bias toward zero our estimates of any skills effect. The alternative view, and the reason to include party identification and political ideology in these regressions, is that trade and immigration may be difficult policy areas for individuals to have strong opinions about. Consequently, people may adopt their opinions largely on the basis of their view of themselves as ''Democrats'' or as ''Republicans'' and of what elites with those same labels say about trade and immigration policy.

Table 3.7 Determinants of individual opinion on international trade restrictions: Additional control variables

	1992				1996			
Variable	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Constant	1.644	1.668	3.506	3.529	0.888	0.975	2.804	2.900
	(0.297)	(0.295)	(0.440)	(0.437)	(0.391)	(0.387)	(0.621)	(0.610)
Occupation Wage	−1.422	−1.440			−1.799	−1.842		
	(0.303)	(0.302)			(0.367)	(0.369)		
Education Years			−0.207	−0.208			−0.237	−0.243
			(0.026)	(0.026)			(0.039)	(0.039)
Sector Tariff	3.296		1.120		6.715		2.050	
	(3.316)		(3.260)		(4.480)		(4.690)	
Sector Net Export Share		−0.646		0.014		−0.341		0.391
		(0.619)		(0.626)		(0.898)		(0.828)
Gender	0.220	0.210	0.298	0.293	0.502	0.478	0.602	0.593
	(0.109)	(0.108)	(0.109)	(0.108)	(0.155)	(0.154)	(0.153)	(0.153)
Age 18-29	−0.079	−0.080	0.177	0.177	−0.400	−0.431	−0.139	−0.146
	(0.170)	(0.170)	(0.172)	(0.172)	(0.265)	(0.266)	(0.265)	(0.266)
Age 30-44	−0.242	−0.242	0.032	0.032	−0.652	−0.666	−0.393	−0.387
	(0.143)	(0.143)	(0.148)	(0.148)	(0.193)	(0.192)	(0.198)	(0.198)
Age 45-59	−0.164	−0.161	0.050	0.051	−0.594	−0.613	−0.327	−0.326
	(0.156)	(0.156)	(0.163)	(0.163)	(0.209)	(0.208)	(0.215)	(0.215)
Race	0.161	0.159	0.160	0.158	0.441	0.463	0.445	0.451
	(0.167)	(0.167)	(0.175)	(0.176)	(0.330)	(0.328)	(0.339)	(0.337)
Party Identification	−0.095	−0.094	−0.065	−0.064	−0.155	−0.154	−0.139	−0.140
	(0.030)	(0.030)	(0.031)	(0.031)	(0.045)	(0.045)	(0.046)	(0.047)
Ideology	−0.003	−0.001	−0.034	−0.034	0.273	0.273	0.260	0.263
	(0.044)	(0.044)	(0.046)	(0.046)	(0.069)	(0.070)	(0.070)	(0.071)
Observations	1,736	1,736	1,736	1,736	846	846	846	846

Note: These results are multiple imputation estimates of logit coefficients. Each cell reports the coefficient estimate and (in parentheses) its standard error. The dependent variable is individual opinions about US trade policy, a dichotomous variable defined such that 1 indicates preferences favoring trade restrictions and 0 indicates opposition.

ideology differ in the two years analyzed. In the 1996 survey, more-conservative respondents were more protectionist, all else being equal, but no relationship between ideology and opinions is evident in the 1992 data.

In addition to this standard set of control variables, we conducted further analyses including considerations that might reasonably be expected to influence individual opinions about trade. These analyses are useful both to check the robustness of our skills findings and to investigate other potentially interesting opinion cleavages about trade policy. Perhaps the most obvious such variable is trade union membership. We found that union members are, all else equal, more likely to favor new trade barriers. This relationship is estimated quite precisely for the 1992 data but less so in 1996. Including trade union membership does not substantially change any of the findings for the skills and industry measures.

Given the salience of issue linkage in descriptions of interest-group politics about globalization, it seems reasonable to explore how attitudes about other policy areas affect trade policy opinions among the general public. We focus in particular on how environmental opinions may influence support for additional trade barriers. The 1996 NES survey asked a number of questions measuring individuals' environmental concerns. From these questions we constructed two measures of each respondent's environmental preferences. We then added each of these measures individually and jointly to models 1 through 8 with and without the demographic controls. Although individuals who were more concerned about the environment were, as expected, more likely to support trade barriers, the effect was generally small and dependent on coding and specification choices. Moreover, regardless of the measure employed, in no specifications was the skills-preferences relationship significantly attenuated. Although concerns about the environment may have a role in describing interest-group politics about globalization, they do not seem to play a major part in public opinion about liberalization in the United States.

Another consideration that might affect individual opinions about trade policy is political awareness. Zaller (1992) and other public opinion scholars have shown that the extent to which individuals pay attention to and understand political and economic debate in the media may influence their opinions about many issues. Although a thorough evaluation of the impact of political awareness on individuals' opinions about trade is well beyond the scope of this book, it is useful to consider some of the most obvious ways in which political awareness might affect opinions about trade.

One possible effect is that individuals who are more politically aware may be more likely to be influenced by the near unanimity among economists that freer trade has net benefits. Thus individuals who are more aware and knowledgeable about political matters may, all else equal, be less likely to support trade restrictions. Although this is a reasonable

hypothesis, we make it with some caution, as the consensus among economists does not extend to all elites with access to the media. We explore this particular hypothesis about political awareness because it can be restated as an alternative interpretation of our skills-preferences findings. Perhaps more-skilled individuals are simply more politically attentive and knowledgeable and thus, reflecting the consensus among economists, have more liberal attitudes about trade.

A second possible effect of political awareness is that it influences the variability of individual opinions about trade. As we showed in chapter 2, there is clear evidence of uncertainty in attitudes about globalization generally. The public opinion literature suggests that individuals with higher levels of awareness may, for some issues, have less variable opinions. Ignoring this possible source of heteroskedasticity (i.e., variability of preferences that itself varies systematically with the awareness of the individuals in our observations) might produce poor-fitting models that affect our inferences about the relationship between skill levels and opinion.

We tested these two hypotheses jointly by constructing a measure of political awareness for each respondent of the 1996 NES survey and by employing an alternative econometric model. Following Zaller (1992), our measure of political awareness is based on tests of neutral factual information about politics (e.g., ''What job or political office does Al Gore hold? William Rehnquist? Boris Yeltsin?''). We included this measure of political awareness in each of our eight baseline regression models. Further, rather than estimating logit regressions with robust standard errors as in the previous analyses, we employed heteroskedastic probit models. These specify both a mean function for which we estimate the effect of various independent variables on the probability of supporting trade restrictions (as was the case in the logit analyses) and a variance function for which we estimate the effect of various measures on the variance of trade opinions.[12]

The results of this analysis are consistent with expectations. Individuals who are more attentive and knowledgeable about politics are, all else equal, less likely to support new trade restrictions. Moreover, their opinions about trade are also less variable. Accounting for these simple effects of political awareness does not substantially affect our skills and industry findings. Individual skill type is robustly correlated with trade opinion, and industry trade exposure is not.[13]

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12. See Alvarez and Brehm (1995; 1997) for details about heteroskedastic probit models in studies of public opinion.

13. The results are also, of course, robust to simply adding the political-awareness measure to the original logit specifications. Including this variable does result in a modest attenuation in the estimated magnitude of the effect of skill type on the probability of supporting trade restrictions. In addition to the robustness checks discussed in this section, we conducted a

Asset Ownership and Trade Policy Preferences

The discussion so far in this chapter has focused on making the connection between individual economic welfare and policy opinions. Economic welfare in our analysis has thus far been limited to labor-market outcomes. Individuals, however, may consider dimensions of economic welfare above and beyond the effects of policy on labor income. The models outlined earlier in the theoretical section do not focus on *intertemporal* consumption choices, which allow current income to be saved and invested for future periods. In reality people do save and invest in a wide range of assets. Accordingly, it is worth discussing how policy preferences might be related to asset ownership. We focus our discussion of assets and policy preferences on trade.

Many kinds of assets fit easily into standard trade models. Some do not, however, because they are neither currently employed factors of production nor currently produced goods. An important example is residential housing. Firms do not employ houses as factors of production. And at each point in time, other than new construction nearly all of a region's housing stock is not produced: rather, it is the accumulation of all previous housing construction in earlier periods. Some assets, then, are not clearly linked to the production side of standard trade models. We focus on housing because it is the only asset of this kind recorded in the NES survey data. Note, however, that housing also constitutes a large share of people's total wealth holdings.

To understand how trade policy can affect housing prices, suppose a country has many distinct regional housing markets, each of which faces

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number of alternative analyses to further verify our findings. To check the strength of our data we tried other measures of factor type and industry exposure. For factor type we tried the respondents' reported annual income. The results were qualitatively similar to those obtained for average occupation wages and education; we prefer the latter because they better reflect an individual's long-run earnings capacity, as annual income can fluctuate for reasons unrelated to skill levels such as illness, inheritances, and overtime. For industry trade exposure we tried imports as a share of output. Although imports do not measure revealed comparative advantage, imports are so often considered to be harmful that we thought many individuals might focus on imports only when evaluating trade policy. This import measure did not work as hypothesized, however. We also considered the possibility that the proper unit of observation is the household rather than the individual. The NES survey reports education, occupation, and industry of employment for spouses of respondents, so in some specifications we used regressors reporting a combination of respondent and spousal information. These household results were generally consistent with the individual results. Similar to the possible objection discussed above based on the hypothesized effects of political awareness, one might wonder whether the skills-preferences correlation reflects considerations other than labor-market pressures. One empirical result supporting the skills-preferences interpretation is that both *Occupation Wage* and *Education Years* are significant when placed in the regression together. If one variable is thought to measure something other than returns to skills, the significance of the other variable conditional on the first supports our interpretation.

a perfectly inelastic supply schedule at each point in time. Prices are then set by regional housing demand. As discussed by Caplin et al. (1997), a key driver of demand is the level of regional economic activity: more activity means more employment and more housing demand. Trade policy is one of the forces affecting the level of regional economic activity. Freer trade tends to shrink industries with comparative disadvantage and expand those with comparative advantage. Accordingly, regions with a higher concentration of activity in sectors with a comparative disadvantage are more vulnerable to adverse housing demand shocks from freer trade. As regional economic output declines, people leave the local labor force, either for work elsewhere or, at least temporarily, unemployment. These departures reduce housing demand and thus housing prices. Note that this trade-housing linkage operates whether the underlying factor markets follow the HO or the RV model. (See appendix A for further discussion.)

To summarize: We hypothesized that in regions with a greater concentration of activity in sectors with comparative disadvantage, homeowners would oppose freer trade because it tends to reduce their welfare by lowering regional housing demand and thus housing values.

To examine whether housing values matter for trade policy preferences, for each individual in the 1992 data we constructed two measures of the degree to which homeowners are exposed to trade liberalization. First, using NES survey data on respondent homeownership, we created the dichotomous variable *House,* coded 1 to indicate ownership and 0 otherwise. Next, using NES data on county of residence, we constructed two measures of county-level trade exposure. *County Exposure 1* measures the share of county employment accounted for by the 10 two-digit SIC manufacturing industries with above-median tariff rates in 1992. *County Exposure 2* measures the share of county employment accounted for by the 14 net-import industries in 1992. These two variables measure each county's employment in sectors with comparative disadvantage, identified through tariff rates or net trade flows. Our two measures of homeowner exposure to trade liberalization are the two interaction variables, *County Exposure 1* $\times$ *House* and *County Exposure 2* $\times$ *House*. We added these interaction terms and the county exposure variables to our baseline models to see if homeowners exposed to trade liberalization were more likely to oppose freer trade when the effects of trade policy on labor income were held constant.

The results of these analyses are consistent with our theoretical expectations (for details about variable construction and results, see Scheve and Slaughter 2001a). For the 1992 NES data, we estimate that for homeowners, an increase in county trade exposure from its sample mean to one standard deviation above its mean increases the probability of supporting trade restrictions by 0.029 to 0.039 (county exposure has no effect on those who

are not homeowners). The results are estimated precisely and are very similar for *County Exposure 1* and *County Exposure 2*. There is clear evidence that homeowners living in counties with a larger share of employment in sectors with comparative disadvantage are more likely to oppose trade liberalization. This seems to be because regional housing values depend, among other things, on the amount of regional economic employment in trade-exposed sectors. These results suggest a further connection between individual economic welfare and public opinion about trade policy. In addition to current labor income driving preferences as in standard trade models, preferences also depend on asset values.

Empirical Results: Do Skill Levels Affect Immigration Policy Preferences?

Both the HO and factor-proportions-analysis models predict a skills-preferences cleavage on immigration policy opinion. Table 3.8 tests for this cleavage. It presents the results for each year's full sample, where in model 1 we measure skills with *Occupation Wage* and in model 2 we use *Education Years*. The key message of table 3.8, as indicated by the precisely estimated coefficients for *Occupation Wage* and *Education Years*, is that by either measure, skill levels are significantly correlated with *Immigration Opinion*. Less-skilled people prefer more restrictive immigration policy, and more-skilled people prefer less restrictive immigration policy.

This skills-preferences link is evident controlling for a large set of plausible noneconomic determinants of *Immigration Opinion*. Among these other regressors, *Gender*, *Age*, *Hispanic*, and *Party Identification* are insignificantly different from zero (although *Hispanic* is estimated to have a negative and statistically significant effect in 1994). *Race* and *Immigrant* are mostly significantly negative: blacks and the group of immigrants plus children of immigrants are more likely to prefer less restrictive immigration policy. *Ideology* is significantly positive: more conservative people are more likely to prefer more restrictive immigration policy. Our nonskills estimates are similar to those in Citrin et al. (1997) and Espenshade and Hempstead (1996); we report them for comparability.

The coefficient estimates in table 3.8 identify the qualitative effect on *Immigration Opinion* of skill levels and our other regressors. To answer our key substantive question of how *changes* in skill levels affect the probability that an individual supports immigration restrictions, we used the estimates of models 1 and 2 to conduct simulations calculating the effect on immigration preferences of changing skill levels while holding the other variables constant at their sample means. These simulations calculated the estimated probability of supporting immigration restrictions (i.e., the probability of supporting a reduction in immigration by either ''a lot'' or ''a little'') when a regressor of interest is increased from

Table 3.8 Determinants of immigration policy preferences: Testing the Heckscher-Ohlin and factor-proportions-analysis models

	1992		1994		1996	
Variable	**Model 1**	**Model 2**	**Model 1**	**Model 2**	**Model 1**	**Model 2**
Occupation Wage	−0.349		−0.811		−0.541	
	(0.130)		(0.135)		(0.133)	
Education Years		−0.044		−0.074		−0.059
		(0.010)		(0.011)		(0.012)
Gender	−0.022	−0.008	0.022	0.083	−0.020	0.024
	(0.048)	(0.046)	(0.056)	(0.054)	(0.060)	(0.057)
Age	−0.000	−0.002	0.000	−0.002	0.004	0.002
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Race	−0.207	−0.225	−0.222	−0.211	−0.238	−0.241
	(0.080)	(0.080)	(0.091)	(0.092)	(0.096)	(0.097)
Hispanic	−0.064	−0.122	−0.306	−0.360	−0.124	−0.172
	(0.111)	(0.110)	(0.136)	(0.137)	(0.120)	(0.121)
Immigrant	−0.158	−0.150	−0.213	−0.193	−0.220	−0.207
	(0.066)	(0.066)	(0.076)	(0.076)	(0.087)	(0.087)
Party Identification	0.003	0.008	−0.006	−0.002	−0.023	−0.016
	(0.013)	(0.013)	(0.016)	(0.016)	(0.016)	(0.016)
Ideology	0.057	0.050	0.054	0.041	0.080	0.072
	(0.020)	(0.020)	(0.028)	(0.029)	(0.025)	(0.025)
Observations	2,485	2,485	1,795	1,795	1,714	1,714

Note: These results are multiple imputation estimates of ordered-probit coefficients based on the 10 imputed data sets for each year. Each cell reports the coefficient estimate and (in parentheses) its standard error. In both models the dependent variable is individual opinions about whether US policy should increase, decrease, or keep the same the annual number of legal immigrants. This variable is defined such that higher (lower) values indicate more restrictive (less restrictive) policy preferences. For brevity, estimated cut points are not reported.

one standard deviation below its sample mean to one standard deviation above while all other regressors are held constant at their means.

Table 3.9 reports results of these simulations for our two skills regressors. For 1992, increasing *Occupation Wage* from one standard deviation below its sample mean to one standard deviation above ($325 per week to $699 per week), with all other regressors held constant at their means, reduces the probability of supporting immigration restrictions by 0.049 on average. The 1992 results for *Education Years* are similar. Increasing

Table 3.9 Estimated effect of increasing skill levels on the probability of supporting immigration restrictions

Skills measure	1992	1994	1996
Occupation Wage	−0.049	−0.135	−0.095
	(0.021)	(0.022)	(0.023)
	[−0.083, −0.013]	[−0.171, −0.100]	[−0.133, −0.057]
Education Years	−0.102	−0.141	−0.121
	(0.020)	(0.022)	(0.025)
	[−0.133, −0.069]	[−0.175, −0.105]	[−0.162, −0.082]

Note: Using the estimates from models 1 and 2, we simulated the consequences of changing each skill measure from one standard deviation below its mean to one standard deviation above on the probability of supporting immigration restrictions. The mean effect is reported first, with the standard error of this estimate in parentheses followed by the 90 percent confidence interval.

Education Years by two standard deviations (about 10.1 years to 15.7 years), with all other regressors held constant at their means, reduces the probability of supporting immigration restrictions by 0.102 on average. The magnitude of these estimated effects was even larger for 1994 and 1996. The same result obtains for all three years of table 3.9: higher skill levels are strongly and significantly correlated with lower probabilities of supporting immigration restrictions. In words, this table indicates that if you could put a high school dropout with roughly 11 years of education through both high school and college, ending up with about 16 years of education, then the probability that this individual supports immigration restrictions would fall by some 10 to 14 percentage points.

Empirical Results: Does Local Immigrant Concentration Affect Immigration Policy Preferences?

The result that skill levels are correlated with immigration policy preferences is consistent both with the factor-proportions-analysis model and with an HO model in which immigration affects both wages and output mix. By pooling all regions together, however, we have not yet tested the area-analysis model. To do this, we modified our initial specifications by adding the regressor *High-Immigration MSA* and its interaction with skill levels. If preferences are consistent with the area-analysis model, then the correlation between skill levels and preferences should be stronger in gateway communities. Thus, we would expect a positive coefficient on *High-Immigration MSA* and a negative coefficient on its interaction with skill levels.

Table 3.10 presents the results for this specification, where model 3 uses *Occupation Wage* and model 4 uses *Education Years*. The results for all the nonskills regressors are qualitatively the same as before. Our skills measures are still negatively correlated with preferences at the 95 percent confidence level or better. But in neither case is *High-Immigration MSA* significantly positive or its interaction with skill levels significantly negative. Overall, the correlation between skill levels and immigration policy preferences is not higher among people in high-immigration areas than among people elsewhere. This finding is inconsistent with the area-analysis model.[14]

Robustness Checks for Immigration Policy Preferences

Again, a first check is to ask whether our results are robust to the inclusion of other regressors in the analysis. We have already demonstrated that the skills-preferences link holds even when the analysis controls for a standard set of demographic identifiers and measures of political orientation.[15] We also checked the robustness of our results by including a number of other regressors that might reasonably be expected to influence immigration opinions. Our main findings on skill levels and geography were consistently robust to our alternative specifications.

We also added a measure of the skill mix of immigrants in the local community. Recall that the NES surveys' immigration-policy preferences question does not specify any skill level of prospective immigrants, and that we have assumed that respondents think US immigrant inflows increase the relative supply of less-skilled workers. Different communities, however, may have very different skill mixes of immigrants, and thus how local citizens think about immigration policy may vary.

To try to control for this possibility, we obtained data on the educational attainment of the immigrant population in local communities as reported in the 1990 US census. We then defined the skill mix of immigrants by using three different educational cutoffs: the share with a high school degree or higher, the share with more than a high school degree, and the share with a college degree or higher. Adding this immigrant-skill-mix regressor to models 3 and 4 does not alter our results for local-labor-market effects. As for this new regressor itself, individuals living in communities

14. We also tested this specification using five other definitions of *High-Immigration MSA.* In almost every case the interaction term's coefficient was positive but not significant; in no case did the interaction term have a significantly negative coefficient or *High-Immigration MSA* a significantly positive one.

15. The correlation between skill levels and immigration opinions does not depend on these conditioning variables and holds in bivariate ordered-probit models.

Table 3.10 Determinants of immigration policy preferences: Testing the area-analysis model

	1992		1994		1996	
Variable	**Model 3**	**Model 4**	**Model 3**	**Model 4**	**Model 3**	**Model 4**
Occupation Wage	−0.334		−0.801		−0.572	
	(0.161)		(0.151)		(0.150)	
Occupation Wage ×	−0.030		0.119		0.231	
High-Immigration MSA	(0.309)		(0.291)		(0.319)	
Education Years		−0.054		−0.074		−0.061
		(0.011)		(0.013)		(0.013)
Education Years ×		0.038		0.012		0.016
High-Immigration MSA		(0.019)		(0.024)		(0.030)
High-Immigration MSA	−0.005	−0.501	−0.218	−0.299	−0.206	−0.264
	(0.168)	(0.264)	(0.192)	(0.343)	(0.225)	(0.441)
Gender	−0.021	−0.009	0.023	0.081	−0.022	0.023
	(0.048)	(0.046)	(0.056)	(0.054)	(0.060)	(0.057)
Age	−0.000	−0.002	0.000	−0.002	0.004	0.002
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Race	−0.204	−0.224	−0.206	−0.196	−0.231	−0.236
	(0.080)	(0.078)	(0.091)	(0.092)	(0.097)	(0.098)
Hispanic	−0.057	−0.085	−0.250	−0.299	−0.102	−0.150
	(0.117)	(0.115)	(0.138)	(0.138)	(0.121)	(0.125)
Immigrant	−0.154	−0.151	−0.176	−0.158	−0.206	−0.198
	(0.069)	(0.069)	(0.079)	(0.079)	(0.090)	(0.090)
Party Identification	0.003	0.009	−0.007	−0.003	−0.023	−0.015
	(0.013)	(0.013)	(0.016)	(0.017)	(0.016)	(0.016)
Ideology	0.057	0.050	0.052	0.040	0.079	0.072
	(0.020)	(0.020)	(0.029)	(0.029)	(0.025)	(0.025)
Observations	2,485	2,485	1,795	1,795	1,714	1,714

MSA = metropolitan statistical area.

Note: These results are multiple imputation estimates of ordered-probit coefficients based on the 10 imputed data sets for each year. Each cell reports the coefficient estimate and (in parentheses) its standard error. In both models the dependent variable is individual opinions about whether US policy should increase, decrease, or keep the same the annual number of legal immigrants. This variable is defined such that higher (lower) values indicate more restrictive (less restrictive) policy preferences. For brevity, estimated cut points are not reported.

whose immigrant population has a higher skill mix are somewhat more likely to support more immigration: the estimated coefficients in models 3 and 4 are negative, significantly so in a minority of cases.[16]

Another consideration for evaluating our findings is whether the skills-preferences correlation for immigration could reflect some consideration other than labor-market pressures. In their analysis of immigration preferences, Citrin et al. (1997) assume that educational attainment does not measure labor-market skills. For example, education might indicate tolerance or civic awareness.

Further analysis, however, supports the interpretation of the skills-preferences correlation as labor-market pressures. One consideration that supports our interpretation is that results are qualitatively different when the full sample each year is split between those in and out of the labor force (with ''in'' defined either as employed or as unemployed but actively seeking work). If labor-market pressures drive the skills-preferences correlation, then it may be weaker among groups with weaker labor force attachment—that is, those out of the labor force relative to those in it. Most alternative hypotheses about what our skills variables measure would not predict a difference across these two groups of respondents.[17] In fact, we did find such a difference. There is a strong skills-preferences correlation for the working-only subsample, but a much weaker correlation—not

16. We thank George Borjas for providing us with these data. One might worry that each NES survey respondent interprets the immigration question to mean immigrants of the same skill level as the respondent him- or herself. Were this the case, one might reasonably expect every respondent to support more restrictive immigration policies. The fact that reported preferences look very different from this, and that we find a robust skills-preferences correlation, suggests that respondents are not interpreting the immigration question this way.

Another added regressor was union membership: union members preferred more restrictive immigration policy, an effect that was statistically significant in some specifications. Two other regressors were retrospective evaluations of the national economy and retrospective evaluations of personal finances. Both retrospective measures tended to have the expected sign—those with gloomier retrospections preferred more restrictive immigration policy—but were never statistically significant. We included state unemployment rates, another geography-varying regressor, to control in the cross-section for any business-cycle effect on immigration policy preferences. This regressor was never statistically significant, however. Finally, we included homeownership, which also was almost never statistically significant. Inclusion of these variables did not substantially affect our reported results for the link between skill levels and immigration opinions.

17. To the extent that most individuals out of the labor market truly are potential entrants who are aware of their labor-market options, a failure to detect a difference between the two subsamples does not imply a rejection of our skills interpretation of the results. So this test leads to a clear inference only if a difference is detected. Note that a similar analysis of the subsamples for trade opinions detected only slight and statistically insignificant differences in the impact of skill levels on opinions for respondents in and out of the labor force.

significantly different from zero in 1992 and 1996—for the not-in-labor-force subsample.[18]

As a second check on the interpretation of our skills regressors, we added to models 1 and 2 direct measures of ethnic and racial tolerance, as proxied by respondents' answers to three different tolerance statements or questions (e.g., ''We should be more tolerant of people who choose to live according to their own moral standards, even if they are very different from our own''). In all specifications greater tolerance was significantly correlated with preferences for less restrictive immigration policy, but our significant skills-preferences correlation persisted. Overall, we interpret these two checks as evidence that *Occupation Wage* and *Education Years* measure labor-market skills.[19]

Summary

Preferences about trade and immigration policy divide strongly across skill levels. Less-skilled individuals, measured in standard labor-economics terms such as educational attainment or average wage, are much more likely to oppose freer trade and immigration than their more-skilled counterparts. No strong evidence emerged in our analyses for many other commonly supposed cleavages. For trade, industry of employment is not systematically related to trade policy preferences. Those working in ''trade-exposed'' industries, such as textiles and apparel, are not more likely to oppose freer trade, once we control for their skill levels. For immigration, people living in immigration gateway communities are not more or less likely to oppose freer immigration.[20]

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18. The reported occupation for those not in the labor force is their most recent job. Also, we obtained the same results qualitatively from an alternative specification of our skills test in which we pooled the full sample and interacted skill levels with a dichotomous variable for labor force status participation. The split-sample test is more general, as it does not constrain the nonskills regressors to have the same coefficient for both labor force groups.

19. We also tried other measures of our skills and immigration regressors. For skills we tried dichotomous variables of educational attainment (high school dropouts, high school graduates, some college, and college and beyond) to look for any nonlinearities in how skill levels affect preferences. We discovered no clear nonlinearities: the relative coefficients on the dichotomous measures seemed consistent with an overall linear effect. We also tried respondents' previous-year income, and obtained qualitatively similar results to those for *Occupation Wage* and *Education Years*. In addition to the six measures of *High-Immigration MSA* discussed earlier, we also tried a dichotomous measure of residence in one of the ''big six'' immigrant states—California, Florida, Illinois, New Jersey, New York, and Texas. We also tried measuring immigration concentration with a continuous variable (the foreign-born share of each area's population) or with *High-Immigration MSA* plus an analogous low-immigration dummy variable. With all these measures we found no evidence of preferences consistent with the area-analysis model.

20. For corroborating evidence on the skills-preferences cleavage from other public opinion surveys, see appendix D.

This finding leads naturally to the question of what sorts of labor-market pressures have been facing different skill groups in the US economy and what role globalization may have played in these pressures. That is the subject of the next chapter.