

Industry, Self-Interest, and Individual Preferences over Trade Policy

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April 2015

Abstract: Do voters have economically self-interested preferences about trade policy? Despite considerable research on this question, no consensus has emerged. We argue that scholars can gain new insight by analyzing attitudes toward protectionism for specific industries, rather than sentiment toward free trade in general. Accordingly, we develop industry-specific measures of protectionism, incorporate them into original public opinion polls, and use the data to test several economic theories. We find surprisingly little evidence that the preferences of citizens fit the predictions of standard models, including Stolper-Samuelson, Ricardo-Viner, and “new new” models of trade with heterogeneous firms. These findings compel us to rethink the sources of public opinion about trade policy.

1. Introduction

A large body of research examines why some individuals favor free trade whereas others support protectionism. The central controversy in this literature concerns the explanatory power of economic self-interest. To what extent do citizens have economically self-interested preferences about trade?

Most studies on this topic have considered two economic theories. The first predicts that attitudes toward trade reflect whichever factors of production the individual owns; the second assigns greater importance to the individual's industry of employment. These theories often go by the names Stolper-Samuelson and Ricardo-Viner, in recognition of the economists who contributed to their development. Because these theories generate distinct hypotheses about who would gain or lose from trade, researchers have asked how well each theory explains existing patterns of public opinion.

Despite considerable effort, though, no scholarly consensus has emerged. Some analyses of polling data from the U.S. and other countries find support for both theories, others conclude in favor of one theory, and still others reject both.¹ Thus, it remains unclear whether and under what conditions we can connect the trade preferences of individuals with their economic interests.

¹ Scheve and Slaughter 2001; Beaulieu 2002; O'Rourke and Sinnott 2002; Mayda and Rodrik 2005; Hainmueller and Hiscox 2006; Mansfield and Mutz 2009; Fordham and Kleinberg 2012; Ardanaz, Murillo, and Pinto 2013; Hicks, Milner, and Tingley 2014. For an excellent review see Kuo and Naoi 2015.

Moreover, while numerous studies have focused on Stolper-Samuelson and Ricardo-Viner, they have devoted little attention to other economic theories, including “new-new trade” theory, which emphasizes that highly productive firms stand to gain from international trade, whereas less productive firms would wither without protection.²

We argue that scholars can gain new insight about all these theories by analyzing public attitudes toward protectionism for specific industries, instead of sentiment toward free trade in general. Accordingly, we develop industry-specific measures of protectionism, incorporate them into original public opinion polls, and use the data to test the explanatory power of the Stolper-Samuelson, Ricardo-Viner, and new-new trade theories. We find surprisingly little evidence that these theories explain public opinion about free trade.

2. Three Theories about Economic Self-Interest and Trade

The Stolper-Samuelson theorem posits that an increase in the relative price of a product will increase the real returns to the factor used most intensively to make that product, while decreasing the real returns of other factors of production. Suppose, for example, that a country put new limits on imports of capital-intensive products, thereby raising their relative price. According to Stolper-Samuelson, the new laws would increase the real earnings of the country’s capitalists while depressing the real wages of its workers. Limiting labor-intensive imports would have the opposite effect: raising workers’ wages while lowering capitalists’ earnings.

If people follow their own economic interests as defined by Stolper-Samuelson, then capitalists should aim to block capital-intensive imports while allowing labor-intensive products

² Bernard et al. 2003; Melitz 2003.

to enter freely. Workers should have the opposite policy preferences. Michael Mussa provides an illustration.

The [Stolper-Samuelson] theory suggests that if automobile manufacturing is capital intensive, then General Motors will favor increases in the tariff on automobiles and the United Auto Workers will oppose such increases; and, if textile manufacturing is labor intensive, then textile workers will favor quotas on textile imports, and domestic textile manufacturers will oppose them.³

Stolper-Samuelson assumes that factors of production are mobile across industries. Ricardo-Viner, in contrast, posits that at least one factor is immobile. Under Ricardo-Viner, an increase in the relative price of a product increases returns to immobile factors that are needed to make that product, while decreasing returns to immobile factors that are used in other products.

Ricardo-Viner can be used to predict preferences over trade policy. If capital is immobile (unable to switch easily from one industry to another), capitalists should seek to protect their own industry while opposing protective measures for other industries. And if labor is immobile, workers should strive to safeguard their own industry, while opposing tariffs and non-tariff barriers for other industries.

Finally, new-new trade (NNT) theories emphasize differences across firms. The theories predict that trade policy liberalization induces highly productive firms to export, less productive

³ Mussa 1974, 1191–92.

firms to produce only for the domestic market, and the least productive firms to exit the industry.⁴ Trade liberalization can, therefore, create winning and losing firms *within an industry*.

Based on the logic of NNT, highly productive firms should favor free trade, whereas less productive firms should seek protectionism. Consistent with this prediction, recent studies have found that productive firms want trade liberalization and lobby strongly for it.⁵ Applying a similar logic to the mass public, an individual's desire to protect his or her own industry should be negatively correlated with the productivity of the firm where the individual works.⁶

3. Measuring Preferences for Protection

With few exceptions, previous studies have examined attitudes toward trade in general instead of measuring protectionist sentiments about specific industries. This focus reflects the limitations of available datasets. The most commonly used surveys, including the American National Election Survey (NES), the World Values Survey, and the International Social Survey Program ask only about commerce in the abstract, using broad terms such as "free trade." Research based on these datasets has produced no consensus about whether the trade policy preferences of ordinary citizens are consistent with economic self-interest.

⁴ Melitz 2003. Evidence for NNT has begun to accumulate. Consistent with NNT, exporting firms are more productive, larger in size, and more capital and skill intensive than other firms in the same industry. See Bernard et al 2007; Eaton, Kortum and Kramarz 2011.

⁵ Plouffe 2012a, 2012b; Kim 2013.

⁶ This hypothesis assumes that workers cannot transition easily from failing firms to highly productive firms in their own industry or other industries.

We advance the debate by developing industry-specific measures of support for protectionism and using them to test three leading theories about trade preferences. Our approach parallels recent work by other scholars. Naoi and Kume investigated why Japanese citizens were especially willing to protect agriculture, and Lü, Scheve, and Slaughter studied whether people were more willing to protect low-wage industries than high-wage ones.⁷ We expand upon these studies by using industry-specific measures to assess the explanatory power of the Stolper-Samuelson, Ricardo-Viner, and NNT frameworks.

Sample Characteristics

We designed and fielded an original survey about U.S. public attitudes toward protectionism. The survey was fielded in two waves. The first, in August 2011, involved 496 respondents; the second, in November 2012, involved an additional 649 respondents. Both waves were administered over the Internet to a diverse sample of U.S. adults, who were recruited via Amazon Mechanical Turk (MTurk).

Validation studies show that, for many research topics, surveys fielded through MTurk yield approximately the same findings as surveys on nationally representative samples.⁸ Of special relevance for research about trade, Huff and Tingley find that “the percentage of MTurk respondents employed in specific industries is strikingly similar” to data from the Cooperative Congressional Election Study, a nationally representative survey supported by the National

⁷ Naoi and Kume 2011; Lü, Scheve, and Slaughter 2012.

⁸ Buhrmester, Kwang, and Gosling 2011; Berinsky, Huber, and Lenz 2012; author 2013. For a recent example in this journal, see Chaudoin 2014.

Science Foundation.⁹ This proved true for our study, as well. Notwithstanding some demographic differences between MTurk subscribers and the national population¹⁰, we successfully replicated several key findings in the trade literature.

Measuring Industry-Specific Preferences

In both waves we asked whether respondents supported or opposed protection for specific types of industries. We took care not to “frame” the issue by asserting that protection would save jobs, raise prices, or affect respondents in other ways. Instead, our prologue simply stated that “U.S. businesses and consumers buy many products that are made in foreign countries. The products from foreign countries are called ‘imports.’ There is much debate about whether the U.S. government should use laws to limit imports by U.S. businesses and consumers.”

We then subdivided the economic landscape in several ways and included questions about each subdivision. First, we classified businesses based on the factors of production they employ. Following a tradition that began with Scheve and Slaughter, we treated labor as a heterogeneous input and distinguished several levels of education, or skill intensity, in the production process.¹¹ Respondents read that “Foreign countries have many types of businesses, which vary in their use of workers with college degrees.” We mentioned three categories of foreign businesses—those employing a low, medium, or high percentage of workers with college

⁹ Huff and Tingley 2014.

¹⁰ Members of MTurk are younger, more likely to be female, more highly educated, and more liberal than the national population.

¹¹ Scheve and Slaughter 2001.

degrees—and asked whether the U.S. government should limit imports from each type of business.

Second, we classified business according to their output. We gave wave-one participants a list of seven product categories: cars, cell phones, clothing, computers and software, fruits and vegetables, furniture, and medicines. We selected these products not only because of their importance for the economy, but also because they require different levels of education to produce. For example, fruits and vegetables can be grown and processed by workers with little education, whereas computers, software, and pharmaceuticals require highly educated workforces. We listed the categories in random order and asked: “in general, please say whether the U.S. government should or should not limit imports of each of these types of products.” Wave-two participants considered the same seven goods, plus four types of services: business consulting, customer service, data entry, and typing services.

Finally, we included a branched series of questions to discern whether respondents wanted protection for their own industry. The series began by asking whether the respondent was currently employed or had ever been employed. Those with current or previous jobs were instructed to describe, in no more than two words, the type of product or service offered by the place they worked most recently. Later, they were reminded: “You said that the business where you work now [or where you worked most recently] sells X,” where we replaced X with the pithy description the respondent had supplied. “Could U.S. businesses or consumers import that kind of product or service from foreign countries?” Those who answered “yes” were asked whether the U.S. government should use laws to limit imports of X.

In summary, we measured each person’s preference about protection for various industries, disaggregated in three ways: by inputs (level of education needed for production),

outputs (the type of good or service produced), and employment (whether the respondent worked in that industry). Below, we use these measures to test whether respondents have economically self-interested preferences over trade.

Measuring General Preferences

For comparability with previous research, we also included two generic questions that tapped sentiment about trade in general, without referring to particular products or industries. Our first generic question measured support for new limits on imports. “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, analyzed by Scheve and Slaughter, comes from the U.S. National Election Study.¹² We created a variable called *limit imports* that was coded 1 if the respondent favored new limits on imports, 0 if they opposed new limits on imports, and was missing if they had not thought much about the issue.

The second generic question asked whether the U.S. should encourage or discourage international trade. “As you may know, international trade has increased substantially in recent years. This increase is due to the lowering of trade barriers between countries, that is, tariffs or taxes that make it more difficult or more expensive to buy and sell things across international borders. Do you think the government should try to encourage international trade or to discourage international trade? Do you think the government should encourage/discourage international trade a lot, or only a little?” Mansfield and Mutz used this item when comparing the

¹² Scheve and Slaughter 2001.

explanatory power of self-interest versus sociotropic and cultural variables.¹³ Based on this question, we created an ordinal variable called *discourage trade* that was 1 if the government should encourage trade a lot, 2 if it should encourage trade a little, 3 if it should discourage trade a little, and 4 if it should discourage trade a lot.

4. An Analysis of General Attitudes toward Trade

To validate our sample and set the stage for subsequent analysis, we investigated how closely we could reproduce major findings in the literature. Many authors have found a positive relationship between education and support for free trade.¹⁴ We checked this by regressing protectionism on a unit variable, *education*, which was 0 if the respondent had not gone to college, 1/3 if they had some college education, 2/3 if they had earned a college degree, and 1 if they had attained an advanced degree. In some analyses we replaced *education* with dummy variables for *some college*, *college degree*, and *advanced degree*, while treating *no college* as the reference category.

Gender, union membership, employment status, and party affiliation have also been associated with attitudes toward trade. Consequently, we included dummy variables for whether the respondent was *female*, belonged to a *union*, or was *unemployed*, and included a *party identification* scale that ranged from 0 (strong Democrat) to 1 (strong Republican). We also

¹³ Mansfield and Mutz 2009.

¹⁴ Scheve and Slaughter 2001; Mayda and Rodrik 2005; Hainmueller and Hiscox 2006.

included three cultural variables, *isolationism*, *nationalism*, and *ethnocentrism*, as in Mansfield and Mutz.¹⁵ Finally, we controlled for the respondent's *age* and household *income*.

The results, shown in Table 1, are consistent with previous research. Columns (1) and (2) present logistic regressions in which the explanandum was *limit imports*, a binary dependent variable. Columns (3) and (4) present ordered logit models in which the attitude of interest, *discourage trade*, had four levels. All four columns confirm that protectionism declined with education. When we measured education as a continuous variable, the estimated coefficient was negative and several times larger than its standard error. When we replaced the continuous measure of education with a series of dummy variables, we again found negative effects, which were most pronounced among respondents with college and advanced degrees.

Several other variables in the model performed as expected. As in previous studies, support for protectionism was higher among females than among males, and higher among isolationist respondents than among people who thought the U.S. should play an active role in world affairs. Protectionist sentiment also increased with age and was stronger among members of labor unions. The remaining variables in Table 1 had insignificant or unstable effects. Income had no impact on the desire to *limit imports* (columns 1 and 2) but did suppress the tendency to *discourage trade* (columns 3 and 4). Neither nationalism nor party identification was statistically significant at conventional levels. Finally, when we included ethnocentrism in the model,

¹⁵ Mansfield and Mutz 2009.

Table 1: Multivariate Analysis of General Protectionist Sentiment

Characteristics of U.S. respondents	Favor new limits on imports		Should discourage international trade	
	(1)	(2)	(3)	(4)
Education	-1.08 (0.29)		-1.24 (0.20)	
Some college		-0.18 (0.25)		-0.38 (0.18)
College degree		-0.53 (0.27)		-0.87 (0.19)
Advanced degree		-1.07 (0.32)		-1.18 (0.22)
Female	0.60 (0.16)	0.60 (0.16)	0.81 (0.12)	0.81 (0.12)
Age	0.22 (0.07)	0.22 (0.07)	0.12 (0.05)	0.12 (0.05)
Income	0.03 (0.20)	0.04 (0.21)	-0.32 (0.15)	-0.32 (0.15)
Union member	1.05 (0.35)	1.07 (0.35)	0.54 (0.22)	0.54 (0.22)
Unemployed	-0.01 (0.21)	0.01 (0.21)	0.12 (0.14)	0.12 (0.15)
Party ID	-0.17 (0.26)	-0.18 (0.26)	0.11 (0.19)	0.11 (0.19)
Isolationism	0.29 (0.11)	0.29 (0.11)	0.58 (0.08)	0.57 (0.08)
Nationalism	0.09 (0.10)	0.09 (0.10)	0.01 (0.07)	0.01 (0.07)
Sample size	719	719	1145	1145
Estimator	Logit	Logit	Ologit	Ologit

Note: Standard errors appear in parentheses. To save space we do not list the intercept in models 1–2 and the ancillary cutpoints in models 3–4.

the effect was statistically indistinguishable from zero.¹⁶

5. Using Industry-Specific Measures to Test Stolper-Samuelson

In the previous section we analyzed public sentiment about trade in general. Consistent with earlier work, we found a negative correlation between the education of respondents and their desire to discourage trade. Authors have interpreted this correlation as evidence that citizens have economically self-interested preferences a la Stolper-Samuelson. We now use industry-specific data to assess the accuracy of that interpretation.

Do Citizens Want Protection for their Factor of Production?

To the extent that educated labor is a key factor of production, U.S. adults who never attended or completed college should be most enthusiastic about limiting imports from industries that rely on low-educated workers. In contrast, respondents with college or advanced degrees should prefer to restrict imports in sectors that employ a high proportion of college graduates.

We tested these predictions by dividing respondents into four educational categories: no college (13% of the sample), some college (40%), college degree (32%), and advanced degree (14%). Within each subgroup we noted how many respondents wanted to restrict imports from foreign companies that employ a low share of workers with college degrees, and compared the number who wanted to restrict imports from firms with medium or high shares of college-educated workers.

¹⁶ Ethnocentrism was observed only for white, black, and Hispanic respondents. Including ethnocentrism reduced the sample size without increasing our explanatory power or altering the other key estimates. For these reasons we omitted ethnocentrism from Table 1.

Table 2 presents the results. The first column summarizes the preferences of respondents who never attended college. Within that group, 64.1% wanted to limit imports made by low-educated foreign workers, whereas only 42.5% wanted to restrict imports made by highly educated foreign workers. The difference was nearly 22 percentage points, and the low/high gradient (the ratio of protectionist sentiment for low-education versus high-education industries) was 1.5. The pattern seems consistent with Stolper-Samuelson: low-educated workers apparently promoted their own interests by disproportionately blocking imports from foreign firms that use their own factor of production.

Table 2: Desire to Limit Imports, by Education of U.S. Respondent and Education Level in Foreign Industry

Education level in the foreign industry	Education of U.S. respondent			
	No college	Some college	College degree	Advanced degree
Low	64.1	59.2	52.4	45.1
Medium	52.3	42.8	41.9	32.9
High	42.5	37.7	34.4	28.7
Low – High	21.6 (10.7 to 32.5)	21.5 (15.2 to 27.8)	18.0 (11.0 to 25.0)	16.5 (6.2 to 26.8)
Low/High	1.5 (1.2 to 1.9)	1.6 (1.4 to 1.8)	1.5 (1.3 to 1.8)	1.6 (1.2 to 2.1)
Observations	153	456	372	164

Note: Table gives the percentage of respondents who wanted to limit imports from foreign industries that utilize low, medium, or high levels of education. 95% confidence intervals appear in parentheses.

The remaining columns of Table 2, however, contradict the hypothesis that Americans are protecting their own educational group. *All* types of U.S. citizens, including those with college and advanced degrees, wanted considerably more protection for low-education industries than for high-education ones. In all four columns, the difference exceeded 16 percentage points and the low/high gradient was at least 1.5. Moreover, the differences and gradients did not vary significantly by the education of the respondent. It would be difficult to reconcile this pattern with the Stolper-Samuelson framework.

Multivariate analyses produced the same conclusion. Table 3 analyzes the desire to limit imports from three types of foreign firms: those employing a low, medium, or high percentage of workers with college degrees. Even after controlling for the same factors as in Table 1, the coefficient on education was negative and highly significant in all three logit models. Thus, other factors equal, educated Americans preferred free entry not only for products made by low-educated foreigners, but also for products made by highly educated foreigners. In summary, previous researchers correctly identified a negative correlation between education and protectionism. However, this correlation does not seem inspired by a desire to maximize returns to one's own factor of production.

Table 3: Multivariate Analysis of the Desire to Limit Imports from Three Types of Foreign Industries

Characteristics of U.S. respondents	Education level in the foreign industry		
	Low	Medium	High
Education	-0.76 (0.22)	-0.75 (0.22)	-0.60 (0.23)
Female	0.31 (0.12)	0.64 (0.13)	0.39 (0.13)
Age	0.03 (0.05)	0.13 (0.06)	0.14 (0.06)
Income	-0.20 (0.16)	0.10 (0.16)	-0.08 (0.17)
Union member	0.52 (0.26)	0.51 (0.25)	0.38 (0.25)
Unemployed	-0.15 (0.15)	-0.02 (0.16)	-0.08 (0.16)
Party ID	-0.37 (0.21)	0.03 (0.21)	0.18 (0.21)
Isolationism	0.14 (0.09)	0.22 (0.09)	0.26 (0.09)
Nationalism	0.06 (0.08)	0.13 (0.08)	0.05 (0.08)
Sample size	1145	1145	1145
Estimator	Logit	Logit	Logit

Note: Parameter estimates and standard errors from three logistic regressions, each with 1,145 observations.

Do Citizens Have Different Preferences for Different Industries?

Under Stolper-Samuelson, respondents should not want free trade or protectionism across the board. Instead, recognizing that different products require different skills, each respondent should favor protection for some industries while opposing protection for others.

Do the data support this prediction? Recall that respondents were asked whether the U.S. should limit imports from three types of foreign businesses: those employing a low, medium, or high share of workers with college degrees. Fifty-seven percent gave identical answers to all three questions: 24% felt the government should block all three types of imports, and 33% wanted all three to enter the U.S. without restrictions. Only a minority, 43%, said the U.S. should limit imports from some educational categories but not from others. Thus, most respondents failed to discriminate based on the skill intensity of foreign products.

We next examined the 43% who expressed differentiated policy preferences. Within this group, did college graduates oppose imports from high-education firms but not low-education firms, and did people without college degrees voice the opposite preferences? Here, too, theory and data diverged. Only 55% of respondents with differentiated preferences sought protection for products in their own educational category while opposing protection for products at the opposite end of the educational spectrum. Putting these facts together, $1 - .43 \times .55 = 76\%$ did not exhibit the nuanced preferences one would expect under Stolper-Samuelson.

For additional insight we tested whether respondents expressed consistent policy preferences regarding products with similar factor inputs. If, for example, respondents wanted free trade for some educationally intensive products, they should have preferred free trade for other educationally intensive products, as well. We checked this prediction by analyzing attitudes toward seven products—cars, cell phones, clothing, computers, fruits and vegetables, furniture, and medicine—that varied in their reliance on college-educated workers.¹⁷

¹⁷ According to the U.S. Current Population Survey, the share of college-educated workers was lowest in furniture (13%), fruits and vegetables (15%), and clothing (17%). Reliance on college-

We found high levels of inconsistency. For each respondent, we sorted the products in three groups, based on whether the respondent thought that U.S. producers of the item employed a low, medium, or high percentage of workers with college degrees. We then checked consistency within categories. Roughly half of the respondents wanted to protect some low-education products while allowing free trade for others. Likewise, around one-third wanted protection for some but not all medium-education products, and nearly 40% wanted protection for some but not all high-education products.

In summary, when we asked about protection for various types of industries, some respondents failed to differentiate; others differentiated in favor of the wrong factor of production; and still others differentiated too much. We tallied the number of respondents who displayed any of the following deviations from theory: (1) when asked about foreign businesses that employed low, medium, or high levels of education, the respondent preferred a uniform trade policy for all three categories; (2) the respondent expressed differentiated policy preferences but did not protect their own factor while leaving the opposite factor unprotected; or (3) having classified seven products according to their educational requirements, the respondent expressed inconsistent preferences about products within in a single educational bin. Based on these criteria, 96% of respondents did not fit the Stolper-Samuelson model.

Despite the striking nature of these findings, it may be premature to dismiss factor-based accounts of individual preferences about trade policy. Perhaps the opinions of individuals reflect

educated workers was higher in automotives (20%) and cell phones (43%), and highest in computers (57%) and medicines (61%). Together, these seven categories represent 22 percent of all U.S. employees in agriculture, mining, and manufacturing.

many considerations, in addition to the distributional consequences of trade. Or perhaps ordinary citizens (and the politicians and interest groups who help shape their opinions) think about many factors of production, not just education. At a minimum, though, the data suggest that preferences about trade policy are not driven primarily by concerns about how free trade would affect the economic welfare of one's own educational group.

6. Using Industry-Specific Measures to Assess Ricardo-Viner

We also tested whether Americans disproportionately seek protection for their own industry. Table 4 summarizes the protectionist attitudes of the 558 respondents who said they were in the tradeables sector, and were therefore asked whether the government should limit imports of whatever their firm made. Nearly 42 percent wanted protection for their own industry, but respondents were at least as willing to block other goods and services.

Table 4: Support for Protecting Specific Industries

<u>Industry</u>	<u>Percent</u>
Customer service	66.0
Fruits and vegetables	57.5
Data entry	57.4
Typing services	56.2
Business consulting	53.1
Medicines	52.0
Own industry	41.9
Furniture	41.6
Clothing	40.7
Computers and software	38.9
Cars	38.5
Cell phones	34.1

Note: Table pertains to the 558 respondents who said they worked in a tradable industry. Four industries in the table—customer service, data entry, typing, and business consulting—appeared only in the second wave of the study; statistics for those industries are based on 324 respondents, rather than 558.

In fact, six sectors—customer service, fruits and vegetables, data entry, typing services, business consulting, and medicines—attracted substantially more protectionist sentiment than respondent’s own industry. The differences were large (11-24 points) and almost certainly did not arise by chance ($p < .0001$). Moreover, although “own industry” ranked seventh in Table 5, the gaps between “own industry” and the next four sectors—furniture, clothing, computers and software, and cars—were neither substantively nor statistically significant. Only one sector, cell

phones, attracted substantially less protectionism than the respondent's own industry. Overall, we found no evidence that people systematically privileged their own industry over others.¹⁸

We also checked whether anyone wanted to protect their own industry while preferring free trade for all industries. Only 2% of respondents exhibited this pattern. They were counterbalanced by another group, comprising 3% of the sample, who wanted to protect all industries except their own!

We next tested whether the desire to protect one's own industry was conditional on job mobility. Respondents were asked: "Suppose you lost your job and could not get another job at a company that sells *X*. Would it be easy or hard for you to get a job at a business that does not sell *X*, but pays as well as the job you currently have?" As in other parts of the survey, we replaced *X* with the respondent's two-word description of their own industry.

Table 5 summarizes the preferences of people who said they worked in a tradable industry and indicated that it would be somewhat hard (30%) or very hard (9%) to get a job in another industry. Even within this fairly immobile subgroup, we found no clear tendency to protect one's own industry. Protectionism was significantly more popular in customer service, fruits and vegetables, data entry, typing services, and medicines. (Protectionist sentiment was also higher for business consulting, but the difference was not significant at the .05 level.) We found no significant difference between "own industry" and the next four groups, ranging from clothing to computers and software. Respondents favored their own industry only in comparison

¹⁸ As a robustness check, we reviewed how each respondent described their job/industry, discarded any respondents who—in our judgment—were not working in the tradables sector, and recomputed Table 4. Our conclusions remained the same.

to cell phones. Interestingly, Tables 4 and 5 also show high enthusiasm for protecting service industries. We are not aware of other studies that compare individual preferences toward trade in goods versus services, but this would be an interesting area for future research.

**Table 5: Support for Protecting Specific Industries,
Among Respondents with Low Job Mobility**

<u>Industry</u>	<u>Percent</u>
Customer service	71.9
Fruits and vegetables	64.5
Data entry	64.0
Typing services	62.6
Medicines	59.9
Business consulting	57.6
Own industry	48.8
Clothing	47.5
Furniture	44.7
Cars	44.2
Computers and software	42.9
Cell phones	40.1

Note: Table pertains to the 217 respondents who said they worked in a tradable industry and indicated that it would be “somewhat hard” or “very hard” to get a job in another industry. Four of the industries—customer service, data entry, typing, and business consulting—appeared only in the second wave of the study, so the statistics for those industries are based on 139 respondents, rather than 217.

In summary, respondents did not systematically privilege their own industry over other industries. This finding was evident not only in the sample as a whole, but also for the subset

who might struggle to find jobs in other industries. Our data therefore undercut the idea Americans are pursuing their narrow economic interest by protecting their own jobs at the expense of other industries.

7. Using Industry-Specific Measures to Test NNT

Finally, we tested whether the trade preferences of individuals depend on the productivity of their own firm. If highly productive firms perform well under free trade, whereas less productive firms need protection, then the desire for protection should be most evident among workers at relatively unproductive firms. The first wave of our survey did not measure productivity, but the second wave included several relevant questions.

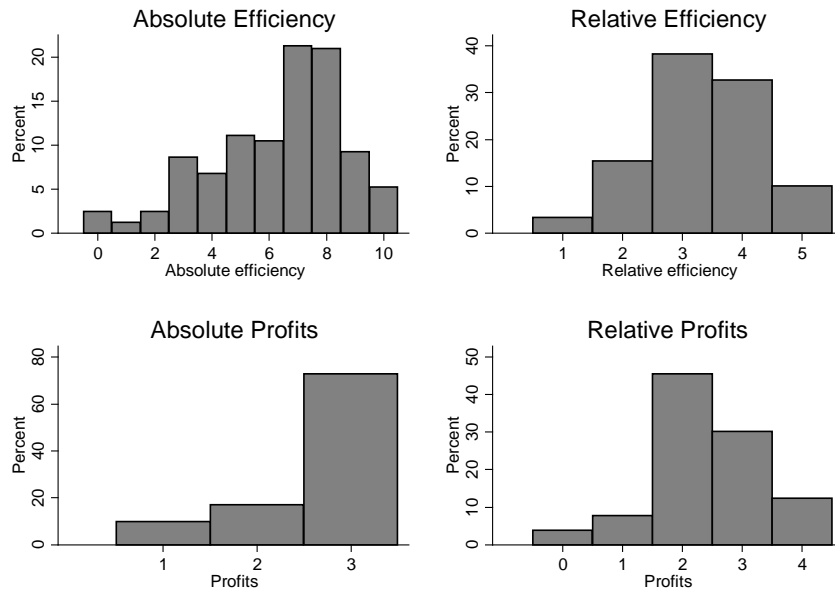
In particular, we asked respondents about the efficiency of their firm. We elicited perceptions of absolute efficiency by explaining: “Efficiency means making things quickly, without sacrificing quality or wasting materials. How would you rate the place where you work on a scale from 0 to 10, where 0 is extremely inefficient and 10 is extremely efficient?” We also inquired about relative efficiency, by asking whether the place where they worked was more or less efficient than other businesses that made similar products.¹⁹

For further insight, we asked employees at private, for-profit companies to comment on their firm’s profitability. “Some businesses make money, some businesses lose money, and some businesses break even,” we explained. “Which phrase best describes the business where you work now or worked most recently?” The choices were “losing money,” “breaking even,” or

¹⁹ Relative efficiency was measured in five levels, ranging from “much less efficient” to “much more efficient” than other firms that make similar products.

“making money.” We also asked about relative profitability. “When it comes to making money, is your business doing better or worse than other businesses that make similar products?”²⁰ As Figure 1 shows, our sample contained good variation on both efficiency and profits.

Figure 1: Perceptions about the Efficiency and Profitability of One’s Own Firm



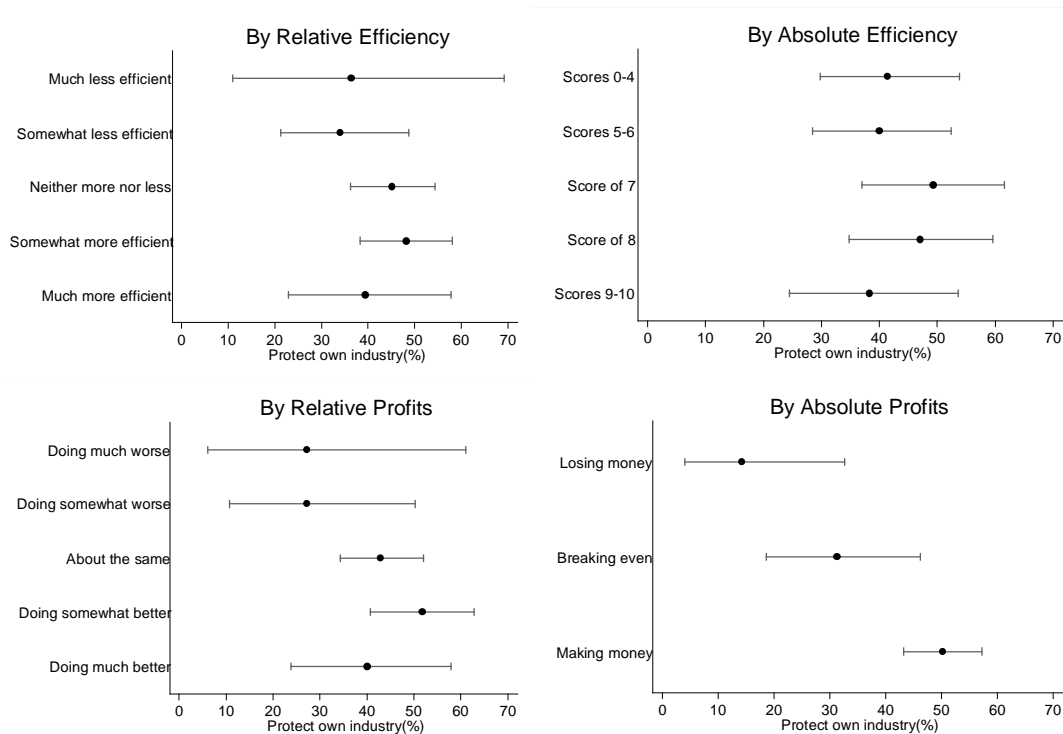
Note: Based on 324 respondents who participated in the second wave of the survey and said their current or most recent job was in the tradeables sector.

We found no systematic relationship between these measures and the respondent’s desire to protect their own industry. The top left panel of Figure 2 splits the sample into five groups, based on whether the respondent thought their firm was more or less efficient than other

²⁰ Relative profitability was measured in five levels, ranging from “doing a lot worse” to “doing a lot better” than other businesses that make similar products.

businesses that make similar products. For each group, the dot indicates the percentage of respondents who favored protection for their own industry, and the line represents the 95% confidence interval around that percentage. The figure shows that respondents from relatively efficient firms favored protection at least as much as people from relatively inefficient firms.

Figure 2: Desire to Protect Own Industry, By Efficiency or Profitability of Own Firm



Note: Based on 324 respondents who participated in the second wave of the survey and said their current or most recent job was in the tradeables sector.

In the bottom left panel we sliced the sample according to perceptions of relative profitability. Once again, the data confounded expectations. The preference for protection was at least as strong when the respondent's firm was outperforming its peers, as when the firm was

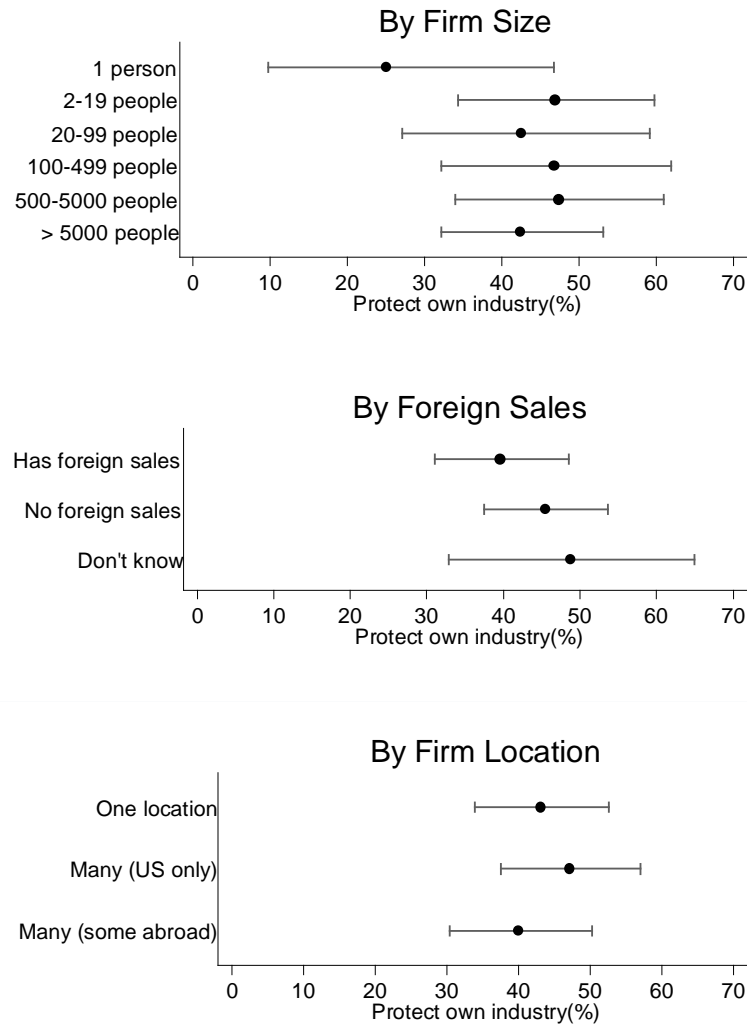
underperforming its peers. Together, these plots undermine the hypothesis that employees at relatively efficient or profitable firms want less protection than employees at other firms.

The right side of Figure 2 presents similar analyses using absolute rather than relative measures. In the top right corner, we split the sample into quintiles based on the absolute efficiency of the respondent's firm. The desire to protect one's own industry was highest in the third and fourth efficiency quintiles (scores of 7 and 8), and lower but roughly similar in the other three efficiency quintiles. Overall, we found no systematic relationship between absolute efficiency and protectionist tendencies. Finally, the bottom right corner distinguishes respondents whose firms were losing money, breaking even, or making money. Here, the pattern ran exactly contrary to theory: respondents who worked at profitable firms were more protectionist than respondents from firms that were not making money.

Our survey included three additional measures of relevance to NNT theory. We asked respondents how many employees their company had in all its geographic locations, because firms with more employees are more likely to participate in international trade.²¹ In addition, respondents indicated whether their firm sold products or services in foreign countries; and whether it had employees in one domestic location, in many domestic locations, or in many sites including other countries.

²¹ Bernard and Jensen 2004.

Figure 3: Desire to Protect Own Industry, By Firm Size, Foreign Sales, and Firm Location



Note: Based on 324 respondents who participated in the second wave of the survey and said their current or most recent job was in the tradeables sector.

These firm characteristics did not predict the desire for own-industry protection, however. The top panel of Figure 3 shows that protectionist sentiment did not vary systematically with size of the firm. The middle panel suggests that employees of export-oriented firms were a bit less protectionist than peers at other firms, but the gap was substantively small

and statistically insignificant.²² The bottom panel tells a similar story: employees of multinational firms were somewhat less protectionist, but the differences were small and not statistically distinguishable from zero.

For robustness, we tested whether attributes of the firm would be more consequential among people who said it would be hard to get a new job in the same industry or a different one. We also considered how characteristics of the firm affected sentiment toward trade in general, rather than trade in the respondent's own industry. None of these additional tests yielded a significant relationship between attributes of the respondent's firm and his or her desire for protection.

8. Conclusion

What determines individual preferences about protectionism versus free trade? Previous research about the connection between economic interests and public support for protection has been inconclusive. In this paper we advanced the debate by developing new industry-specific measures of protectionism and using them to test three theories about the economic roots of individual preferences.

Consistent with previous research, we found that protectionist attitudes in the United States were negatively correlated with education. Contrary to previous claims, though, this pattern probably did not arise because citizens were thinking about the distributional effects of trade as predicted by Stolper-Samuelson. Respondents, regardless of their level of education,

²² Naoi and Urata 2013 find, however, that the Japanese citizens whose firms exported, imported, or invested abroad were more likely to support the Trans-Pacific Partnership Agreement.

were more willing to protect low-skilled industries than to protect high-skilled ones. Moreover, respondents generally did not exhibit the nuanced preferences one would expect if they were maximizing returns to their own factor of production.

Ricardo-Viner fared just as poorly in our analyses. Americans did not disproportionately seek protection for their own industry, even when they believed it would be hard to get a job in a different industry. Finally, although new-new trade theories emphasize that productive firms stand to gain the most from trade, we found no relationship between the productivity of a respondent's firm and his or her attitudes toward protection.

We conclude by suggesting two implications for future research. Methodologically, future surveys about international trade should incorporate the kinds of industry-specific questions that we developed for this study. Those measures will allow researchers to test economic and cultural theories more rigorously than was possible in the past, when the only available measures were about foreign trade in general.

Substantively, scholars should redouble their efforts to assess other explanations for trade policy preferences. It is too early to rule out economic self-interest as a partial guide to individual preferences about trade. Perhaps other economic theories—especially ones that focus on the individual's role as a consumer rather than a worker—may shed more light on attitudes toward specific industries and trade in general.²³ Nevertheless, our research raises serious questions about the economic theories that have guided research about public opinion and trade for more than a decade.

²³ Baker 2003, 2005; Naoi and Kume forthcoming.

Future research should continue to probe the cultural and psychological sources of trade policies. Already, several pioneering studies have attributed trade preferences to altruism, cosmopolitanism, ethnocentrism, ideology, morality, risk orientation, and social identity.²⁴ These studies are part of a behavioral revolution that is unfolding in the field of international relations.²⁵ We believe that behavioral approaches, developed and tested alongside traditional economic models, will yield more realistic and insightful theories of individual preferences and government policy.

²⁴ Herrmann, Tetlock, and Diascro 2001; Rankin 2001; Kaltenthaler, Gelleny, and Ceccoli 2004; Ehrlich and Maestas 2010; Milner and Tingley 2011; Lü., Scheve, and Slaughter 2012; Margalit 2012; Kaltenthaler and Miller 2013; Guisinger 2014; Lindsey and Lake 2014; Sabet 2014; Rathbun *forthcoming*.

²⁵ Hafner-Burton et al. 2015.

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