Sensitivity to Issue Framing on Trade Policy Preferences:
Evidence from a survey experiment

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ABSTRACT

We explore the impact of issue framing on individual attitudes toward international trade. Based on a survey experiment fielded in Argentina during 2007, which reproduces the setup of earlier studies in the United States, we show that individuals' position in the economy and material concerns define the strength of priors about international trade, and thereby mitigate their sensitivity to the new dimensions introduced in informational cues. Extending the analysis beyond the United States to a country with different skill endowments allows us to better explore the role of material and non-material attributes on individual attitudes towards trade. We find that skill is a central predictor of support for openness. The effect is strongest for individuals in the service sector and in cities that cater to the producers of agricultural commodities. Our findings suggest that the pattern of support for economic integration reflects the predictions from the recent literature in international economics, which emphasizes trade's impact on the relative demand for skilled labor regardless of factor endowments. Our findings also amend recent empirical contributions which suggest that socialization is the main factor explaining individual sensitivity to issue framing on trade preferences. We suggest that material conditions associated with income and price effects are crucial, both in shaping trade preferences and in affecting the malleability of attitudes to issue framing. Hence, our results provide a crucial contribution to our general understanding of the attributes shaping susceptibility to political framing in policy debates.

Recent empirical work on the determinants of trade policy preferences based on the United States reveals that individuals' responses to survey questions are susceptible to *framing effects*, the strength of which usually covaries with respondents' level of education, as shown by Hiscox.[1] That is, more educated individuals are more likely to appreciate the benefits of integration—especially those who have been exposed to trade theory and the principle of comparative advantage– and to have a cosmopolitan outlook, and hence greater tolerance towards foreigners and their products. For these reasons the educated are less sensitive to framing effects in defining their views on trade policy.[2] This conjecture seems to be borne out in studies using survey data for advanced economies and supported by experimental surveys in the US. Yet it has not been duly tested beyond the US and other developed economies with similar endowments of skill, which is correlated with educational attainment and socialization, hence masking the confounding effect of trade on the relative demand for skill.

The interpretation of Hiscox's findings for the United States points to the cognitive effects of education, rather than to the expected material impact of trade on the demand for the labor market skills that the more educated are likely to possess. Building on the pioneering work of Bauer et al.[3], Mansfield and Mutz argue that sociotropic motivations and foreign policy stances dominate individual self-interest in

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[1] Hiscox 2006.

[2] Hiscox 2006; Hainmueller and Hiscox 2006.

[3] Bauer et al. 1963.

shaping attitudes towards trade and economic integration. [4] The emphasis on socialization, ideological leanings, education and sociotropic perceptions has relegated material interests to a secondary role in the most recent literature on trade policy preferences.[5] This paper aims at bringing material interests back into the academic debate by focusing on material motivations as an alternative process affecting the susceptibility of individuals to framing effects in public opinion surveys.

Understanding the determinants of trade policy preferences and the impact of issue framing on shaping such preferences is central to explaining changes in public support for different trade (and other economic policies) in democratic polities. Yet disentangling the role of material incentives from cognitive and informational determinants of individual responses to public opinion survey questions is a daunting task. Cognitive abilities are collinear with education and skill, and skill plays a central role in most theories of international trade, including factor content explanations of the direction and distributional consequences of trade [6]; theories of comparative advantage[7]; and the *new new trade theory* about skill premia generated by trade.[8] Hence exploring the relationship between skill and trade attitudes, and the mitigating

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[4] Mansfield and Mutz 2009.

[5] Mansfield and Mutz 2009, Hainmuller and Hiscox 2006.

[6] Stolper and Samuelson 1941; Rogowski 1989.

[7] Dornbusch et al. 1977; Davis 1995.

[8] Melitz 2003; Helpman 2006; Verhoogen 2008; Goldberg and Pavcnik 2007.

effect of education and socialization, requires sampling beyond the set of countries with similar relative endowments of skill.

In order to explore these determinants we conducted an original survey experiment in Argentina, which has different skill endowments than the United States and allows us to better explore the role of material and non-material attributes on individual attitudes towards trade. The survey instrument reproduces the issue framing design introduced by Hiscox in his study of trade policy preferences in the US.[9] The instrument randomly exposes different groups of individuals to alternative frames linking trade policy to employment and price effects, which are pervasive in political discourses on trade politics.

The results of our experiment show that material concerns are crucial in defining the strength of individuals' priors regarding international trade, and thereby their sensitivity to framing effects. Indeed, we show that the expected consequences of trade on an individual's well-being are not only associated with preferences over trade, but systematically affect an individual's sensitivity to the new dimensions introduced by question frames. We find that skill is a central predictor of support for openness, especially for individuals in the service sector and those in cities that cater to producers of agricultural commodities. By contrast, support for trade is lowest among the less skilled, those employed in the manufacturing sector, and those who reside in large cities where the import-competing industries tend to cluster. Our findings suggest that preferences for trade are associated to its expected effect on the relative demand for

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[9] Hiscox 2006.

skills even in a country where skilled labor is relatively scarce. We also show that when

the expected negative distributive consequences of integration are salient enough,

individuals are likely to hold stronger priors, which make them less susceptible to

change their views once subjected to framing effects. Moreover, we find this effect even

after controlling for respondents' level of education, a finding that cannot be explained

by theories that emphasize the role of socialization. Our results, thus, qualify the view

that socialization is the main factor explaining permeability to issue framing. Individuals

who are not clearly and directly affected by openness are more likely to hold diffuse

priors over trade policy, and hence more likely to update their opinion on the

desirability of trade when exposed to frames that emphasize its price and employment

effects, even after conditioning on respondents' educational level. This novel result has

important implications for our understanding of the politics of trade. It also serves as a

cautionary note to researchers using framing experiments embedded in surveys about

the need to take into account the sources of individuals' priors when assessing the

effect of informational cues.

I. The Impact of Issue Framing on Individual Attitudes Towards Trade

In exploring the determinants of trade policy preferences, scholars have focused on

the expected effect of trade on the well-being of individuals, firms and interest groups.[10]

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[10] On individual preferences see Balistreri 1997; Scheve and Slaughter 2001; Mayda and

Rodrik 2005; O'Rourke and Sinnott 2001; Hainmueller and Hiscox 2006; Mansfield and

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Most of this literature draws on workhorse models of international trade to derive predictions about the distributional consequences of trade opening on individuals and groups as a function of their position in the economic division of labor. The predictions are grounded in two strands of economic theory, which suggest that support for free trade is a function of the expected effects of trade on the return to the factors of production or the assets owned by the respondent as proposed by the Hecksher-Ohlin (and the Stolper-Samuelson theorem) or the specific factor (or Ricardo-Viner) models of trade, respectively.[11] Whether the fault line arises across factor ownership or sector of employment depends on the underlying assumptions about the determinants of trade flows—either the relative abundance of a factor in a country or the degree of exposure of a particular sector to trade competition—and the level of inter-sectoral factor mobility.[12]

Scheve and Slaughter, O'Rourke and Sinott, and Mayda and Rodrik find that skill levels, measured as either educational attainment or occupation, dominate sector of employment as a determinant of trade policy preferences at the individual level.[13] The findings are consistent with factor content models of trade and Stolper-Samuelson

Mutz 2009. On factor and sector-level preferences, see Rogowski 1989, Hiscox 2002, and Frieden 1991, and on firm-level preferences, see Milner 1988.

[11] Stolper and Samuelson 1941; Jones 1971; Samuelson 1971; Mussa 1974.

[12] Alt and Gilligan 1994; Hiscox 2006.

[13] Scheve and Slaughter 2001; O'Rourke and Sinott 2001; Mayda and Rodrik 2005.

effects: the skilled in skill abundant countries are likely to benefit from the rise in prices of exports, which are likely to be skill intensive.[14] Scheve and Slaughter also note that American homeowners in areas that are negatively impacted by trade are less likely to support openness than would be predicted by their skill endowment, showing that an indirect material effect of trade also shapes individual preferences.[15]

Yet skilled individuals are also more supportive of trade in countries that are relatively better endowed with unskilled labor. While potentially refuting the Stolper-Samuelson theorem, this finding is still consistent with the predictions derived from recent developments in trade theory: increasing economic integration through trade can result in a rising skill premium. Given that not all firms have the potential to engage in trade, the ones that do are more likely to produce higher quality goods resulting in higher demand for skills, and hence an increase in the skill premium.[16] These firms are also likely to demand skill intensive services from the non-tradable sector, which has the potential to increase the relative demand for skilled labor in all countries irrespective of their relative endowments.

In contrast to the literature on trade, public opinion scholars emphasize how framing effects can shape the perception of individual utility, thus calling into question the material origins of individual policy preferences, and focusing instead on how

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[14] Leamer 1984.

[15] Scheve and Slaughter 2001.

[16] Melitz 2003, Verhoogen 2008; Galiani and Porto 2010.

socialization, ideological bias, and elite consensus shape the way in which individuals process policy preferences.[17] Several studies show that the sensitivity of individuals to issue framing depends on their priors, which are generated by their strongly held values and cognitive abilities.[18] Hiscox provides a crucial contribution to this literature with path-breaking insights on the effects of issue framing on trade policy preferences.[19] Using a survey experiment, Hiscox finds that the wording of survey questions has a sizeable effect on attitudes towards trade; he also finds that framing effects are weaker among individuals with higher education—who are more supportive of trade. Based on those results, he suggests that socialization shapes the impact of issue framing on responses to public opinion surveys.

Hiscox acknowledges, but does not explore, the potential effect that material interests could have on individuals' priors and how these interests could affect individual response to framing effects. This is our central point of departure with Hiscox: we argue that the incentive to obtain information about an issue is as much related to an individual's education and sophistication as it is to the expected effect on the individual's material well-being. For material self-interest to affect public opinion, the

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[17] Chong and Druckman 2007b; Tversky and Kahneman 1979.

[18] Druckman 2001; Stanovich and West 1998; Levin, Schneider and Gaeth 1998; Miller and Fagley 1991; Fagley and Miller 1997; Sieck and Yates 1997, Druckman and Chong 2007a.

[19] Hiscox 2006.

policy issue must be tangible and immediate so that its material effects can be identified by individuals.[20] In particular, when individuals can clearly discern the material consequences of a policy, they have more incentives to obtain information that generates stronger priors before being exposed to the survey experiment, thereby making them less susceptible to issue framing.[21]

II. The Argentine Survey Experiment: background and expectations

In order to explore the influence of material self-interest—rooted in the expected distributive consequences of trade—on the formation of trade policy preferences and on individuals' sensitivity to issue framing we fielded a survey experiment in Argentina during 2007. The survey experiment reproduces Hiscox's design, fielded in the United States in 2003, to allow for a better comparison across cases.[22] We chose Argentina for a variety of reasons. First, the difference in skill endowments and educational attainment—its relative endowment of skill is low—in comparison to the United States allows for a better assessment of predictions based on socialization and material interests. Second, Argentina has recently experienced high levels of trade policy volatility, which is reflected in the political elite's efforts to frame political debates on the expected consequences of economic integration.

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[20] Sears and Funk 1991; Taber 2003, 448.

[21] Taber 2003; Lodge and Taber 2000.

[22] Hiscox 2006.

Argentina experienced high levels of protectionism in the post-war era. During this period, the main political divisions were based on a strong urban-rural cleavage, with exporters of agricultural commodities promoting trade liberalization and industrialists and workers supporting import-substitution and protectionism. [23] Average tariffs hovered around one hundred percent until the mid-1970s when the last military rulers (1976-83) dramatically reduced them.[24] Facing hyperinflation after his election in 1989, President Carlos Menem broke with the traditional protectionist stance of his party (the Peronist Party or Partido Justicialista) and embraced trade liberalization. Tariffs declined from an average of 39% to 10% in 1992.[25] Menem's trade reforms were explicitly framed as necessary to control hyperinflation, as eloquently explained by Menem's Finance Minister Domingo Cavallo:

As a political strategy when I was appointed Secretary of economic affairs, I merged the Ministry of Public Works into a single Ministry of Economy and Public Works to link convertibility with privatization, economic liberalization, and improvements in economic efficiency. That is, all the reforms were linked to inflation, and this link facilitated the support of public opinion and Congress.[26]

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[23]O'Donnell 1978.

[24] Galiani and Porto 2008, 6.

[25] Gerchunoff and Torre 1996.

[26] Domingo Cavallo, personal interview, May 6, 2003.

Argentine trade policy, however, took another sharp turn at the onset of the 21st century. In December 2001, a dramatic economic and political crisis led to a three-fold devaluation of the local currency, providing a boost to the tradable sectors by simultaneously protecting import-competing firms while making exports more competitive in foreign markets. Moreover, the sharp increase in the price of commodities in the 2000s was favorable to Argentina because about two-thirds of its exports are primary products or manufactured goods of primary origin, while most of the imports are industrial, intermediate and capital goods.[27]

These favorable terms of trade on agricultural products fed increases in the domestic price of food beginning in 2006, when food prices started growing faster than the general inflation rate and reversed the positive relationship between trade openness and prices experienced under Menem.[28] The mounting domestic price of foodstuffs in general, and particularly the price of meat (a main staple in Argentine diet), became a sensitive political issue. In 2006 President Néstor Kirchner—who also belonged to the Peronist Party—faced his first public conflict with agricultural producers, which eventually resulted in the imposition of both import and export restrictions. In a public speech of February 2006, Kirchner stated:

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[27] CEP 2008.

[28] Analítica Consultora; URL: http://econserialcronico.blogspot.com/2010/08/la-comida-por-sobre-todas-la-cosas.html>. Accessed 7 November 2011.

We want the price of beef to come down, but we want it to come down due to the

consciousness and responsibility of the production and processing sectors, and we

do not want them to subject the domestic price of beef to that of exports.[29]

In March 2006, he decreed export restrictions and price controls for meat. The saliency of the conflict is reflected in a public opinion survey from the last quarter of 2006, where respondents estimated that meat constituted more than two thirds of the country's exports when in fact it was only 2.4%.[30] Moreover, by January 2007 the saliency of the conflict over food prices was clear: 90% of Argentines perceived inflation as growing when its annual level reached ten percent.[31] The growing inflationary perception held by the public in a country that had recently experienced hyperinflation encouraged the government to impinge on the technical autonomy of the INDEC, the national statistical office. The technicians in charge of measuring the consumer price index were fired, and the administration devised a distorted index (much lower than those prepared by private and provincial agencies), which lacks credibility among the general population. Hence, when we fielded our survey experiment in March-April 2007, the rising price of food was already a salient and sensitive issue. Moreover, inflation was

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[29] *La Nación*, February 10, 2006, "No nos alegra de ninguna manera que haya un foco de aftosa."

[30] Knack 2007, INDEC 2007.

[31] Poliarquía 2011.

linked to trade in the political discourse of a popular president—whose wife would be elected as his successor a few months later.

The Argentine public, however, was divided in its perception of the material effects of trade on another dimension: the demand for their services, including the indirect effect of demand for labor services in the non-tradable sector, which constitutes the majority of employment. The rising price of commodity exports resulted in a sharp increase in the demand for services in the cities of the Argentine hinterland, which benefitted from the multiplying effect of the expansion of agricultural production stimulated by the export boom.[32] By contrast, the demand for services in metropolitan areas was offset by the negative effect of trade on the import competing industries, which cluster around the large cities. That is, the export-oriented coalition, which benefits from the positive spillovers of trade, is based in the hinterland and the protectionist coalition, which emerged around import-competing interests, is based in the major industrial cities of Buenos Aires, Córdoba, Rosario and La Plata. This urban-rural cleavage, which had dominated Argentine politics since the early 1900s, was exacerbated by the improvement in agricultural terms of trade. Moreover, in the 2000s, agricultural producers are backed by the growing service sector that caters to them in the interior of the country. Hence, we use the region of the respondent (either import-competing or not) as a proxy for the impact of trade on the relative demand for their services.

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[32] Bisang et al. 2009.

Given our prior discussion, we expect stronger priors and weaker sensitivity to issue framing among the losers from trade, or those in the protectionist coalition, because the distributive consequences of trade are clearer for them. These respondents are net losers given the expected negative effects of trade both on the demand for their services and on their income, through the impact of rising food prices, which they consume but do not produce. By contrast, those in the non-import competing hinterland, even in non-tradable sectors, will be positively affected by the (indirect) income effect created by trade on the demand for their services due to the positive spillover effects of higher activity in agriculture. However, the distributive effects of trade are less clear for them because they suffer both the positive impact on the demand for their services and the negative impact of higher prices, thereby generating weaker priors and making them more susceptible to framing effects. Therefore, we expect both lower support for trade opening and weaker framing effects across individuals located in import competing regions relative to respondents in non-import competing regions.

The impact of education, which is crucial for Hiscox, can reflect both socialization and material effects associated with the demand for skilled labor, given that trade openness increased the demand for skilled labor and the wages of skilled workers in Argentina.[33] Both interpretations of education should thereby lead us to expect it to be correlated it with support for trade opening. However, each of these interpretations—

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[33] Galiani and Porto 2010; Bustos 2011.

socialization and skill formation—leads to different expectations regarding the formation of priors and sensitivity to framing effects. According to Hiscox, the socializing effect of education strengthens priors regarding trade and reduces sensitivity to issue framing regardless of material effects derived from region location. By contrast, if the effect of education is through skill formation, we should observe regional differences among skilled workers. The positive impact of trade on the demand for and wages of the more skilled workers in the hinterland, along with the negative income effects of higher prices, should generate weaker priors for educated respondents in the non-import competing regions and make them more sensitive to issue framing. By contrast, in the import competing regions, skilled workers suffer both from the negative effect of trade derived from a decrease in the (indirect) demand for their services as well as the negative effect of higher food prices. These skilled workers should have stronger priors, and therefore be less sensitive to issue framing.

Alternatively, we look at the differences among those employed in manufacturing, a sector of revealed comparative disadvantage in Argentina, and those in services. We expect the former to hold stronger priors and be less susceptible to framing effects given the direct effect of trade on their well-being, while the effect of trade on the latter is likely to be more diffused and hence results in weaker priors and greater responsiveness to issue framing.

III. Results from a Survey Experiment

The experiment was conducted in a face-to-face national survey using a

nationally representative sample of 2,793 individuals during April 2007.[34] For the experiment, respondents were randomly assigned to four groups, with each group receiving different introductions to the survey question about international trade.[35] These introductions, which reproduce the Hiscox setup, mentioned some possible benefits of trade, some possible costs, or both types of potential effects, while the fourth group received no introduction at all. The exact wordings are shown below, with percentages indicating the size of the group in relation to the entire sample.

• Group 1 (25 percent)—pro-trade introduction: "Some people believe that increasing trade with other nations creates jobs and allows you to buy goods and services at lower prices."

• Group 2 (25 percent)—anti-trade introduction: "Some people believe that increasing trade with other nations causes unemployment and hurts Argentine producers."

• Group 3 (25 percent)—both introductions.

• Group 4 (25 percent)—no introduction.

To proxy for the regional effects that were identified in our first two hypotheses, we use the location of individuals, classifying them as belonging to an import competing region if they lived in the Metropolitan Area of Buenos Aires (AMBA), La Plata, Rosario,

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[34] See Appendix (A.1) for more information about the survey experiment.

[35] The survey question asks "Do you agree or disagree with Argentina increasing its commerce with other nations? Responses 1: Strongly agree; 2: Somewhat agree; 3: Somewhat disagree; 4: Strongly disagree; 5: Indifferent; 8: DK; 9: NA.

or Córdoba, which are the main industrial regions of the country where more than half of the national population lives. [36] The agricultural production is concentrated in the non-import competing region. Yet, because agriculture is capital intensive in Argentina, it involves 1.54% of employment in that region (as opposed to 0.48% in the import competing region). Manufacturing comprises 16% of employment in the import competing region as opposed to 10% in the non-import competing region. Additionally, public employment (including education) is 16% of employment in the import competing region and 19% in the non-import competing region. This difference generates a bias against our argument due to the dependence of the Treasury on export taxes.[37]

We define an individual as educated if he/she completed high school (12 years of education). Defined this way, the sample is split in half between less educated (50.29%) and more educated (49.71%) respondents. Education and region do not overlap, as shown in Table 1.

<Table 1 here>

High skilled services and high technology industry constituted 19.5% of employment in the import competing region, but only 12% in the non-import competing region. This variation suggests different material effects derived from region and

[36] The import competing region constitutes 55% of our sample.

[37] All the employment data is from the INDEC, Permanent Survey of Households 2007, First Quarter.

education interpreted as skill formation—that is, that the skilled workers would suffer from a negative effect on the demand for their services in the import competing region. To tease out whether the effect of education is due to socialization or skill distribution, we both control for the area of residency and use an occupational score as a measure of skills. The latter score assigns higher values to occupations that involve larger numbers of subordinate employees (for employers/managers) and, in the case of employees, higher qualifications and job types, whereas white-collar workers are assigned a higher score than blue-collar workers.

Table 2 reports the simple frequency distribution of responses in each of the four experimental groups. The Table shows that all groups express strong overall support for trade and that issue framing has, in general, negative effects on responses. In particular, there are statistically significant differences between Group 4 (no introduction) and the rest of the respondents, while differences among groups with different framing types are not statistically discernible from zero.

<Table 2 here>

In line with the results reported by Hiscox, we find that the anti-trade and the combined introductions reduced support for trade. We also find that even when respondents receiving the pro-trade frame were more likely to support trade than those who receive the anti-trade frame, they were not more likely to express support for opening trade than those who received no introduction—and the effect was negative.

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It is remarkable that we find the same result as Hiscox given the notable differences in contemporaneous growth rates in the United States in 2003 (no growth) and Argentina in 2007 (8% growth). Differences in economic conditions are likely reflected in the emphasis on the consequences of trade in policy debates in both countries: in the United States the issue was framed in terms of employment effects[38]; in Argentina, the debate underlines the effects of expanding trade on prices of food. Hiscox explains this result by pointing to the failure of pro-trade rhetoric focused on job creation in export industries and lower prices for consumers due to the weaker effect of potential gains vis-à-vis potential losses posited by prospect theory.   We believe that since the wording of the frame in all its forms alludes to price effects, it introduces a new dimension that resonates well with the daily experience of Argentine respondents. Hence, only individuals in the treatment group should report a lower support rate for trade liberalization because they are exposed to the price dimension in the question frame. In other words, respondents' everyday experience trumps the hypothetically positive effect on prices mentioned in the pro-trade framing vignette.[39]

Based on the information presented in Table 2, we calculate marginal effects on the probability of trade support for the different treatment groups using logistic

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[38] Slaughter 2001.

[39] This is an interesting effect to be considered when using survey experiments. Hiscox (2006) could have suffered from a similar effect because in 2003 the US was undergoing almost null growth and trade competition was associated with job losses.

regression on Table 3.   We follow Druckman in using the "no introduction" treatment as the excluded category to estimate the effects of each introduction on the probability for supporting trade.[40] The general effect of the anti-trade introduction is to reduce support for trade by 12%. The magnitudes of the effect produced by the mixed and pro-trade introductions are 10 and 9 percent, respectively.

<Table 3 here>

Individual's sensitivity to framing effects

We now turn to the individual attributes that make respondents more susceptible to framing effects. Consistent with the findings in Hiscox, we find that less educated respondents are less favorable to trade and more sensitive to framing. As shown in table 4, less educated individuals are less likely to support trade for every one of our four categories. Additionally, the differences between the "no introduction" group and each of the other groups are consistently larger for the less educated respondents.

<Table 4 here>

Our initial findings show that issue framing does impact public perception of trade, as support for trade is higher among those that receive no frame (given the inclusion of the price dimension in all framing clauses).   That is, we find that framing moves respondents in all educational categories to respond more negatively to the

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[40] Druckman 2001.

trade question. And, like Hiscox, we find that higher education is associated with stronger priors and weaker framing effects. The mitigating effects of education on issue framing could result from sophistication that reduces sensitivity to political discourse, but it could also reflect labor market skills of individuals and their capacity to benefit from the gains of trade.

Disaggregating framing effects across individuals with different educational attainment and region of residence reveals an interesting empirical pattern that cannot be explained by socialization and education: framing effects are indeed smaller among the more skilled in the population, as the conventional wisdom posits. Yet, we show framing effects are stronger in non-import competing areas across education levels. That is, when *controlling for the effect of education*, the indirect distributive effect of trade shapes the impact of framing on the preferences of respondents. In essence, it is harder to shift the views of those living in import-competing areas than of those living otherwise. The basic intuition is that trade affects income through the demand of services and increases in the price of foodstuffs, but only in the import-competing regions do both effects move in the same negative direction—making it easier for respondents to perceive the distributive effects of trade and making them less sensitive to framing effects.

We start by reporting the responses to each of the four different groups divided by region on Table 5. In every group, support for openness is higher among respondents in the non-import competing region than in the import competing region and the effect of all three introductions is weaker for respondents in the import competing region than

in the non-import competing region. That is, respondents in the non-import competing region were more sensitive to framing effects as our hypothesis about material effects suggests.

<Table 5 here>

Using logistic regression we test for the impact of region on support for trade openness and sensitivity to framing effects in Table 6.[41] To assess the direct effect on support for trade opening, we focus on individuals who were not treated with any frame in Model 1.[42] Column 1 presents results from a simple logistic model on that subsample in which the dependent variable, trade support, is regressed on our two main independent variables: a dummy variable indicating whether the respondent finished high school (*education*), and a dummy indicating residence in the import competing region.[43] Following Hainmueller and Hiscox, we control for the working status of the respondents with a dummy variable (*employed*) that reflects whether he or she is on

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[41] The distribution of covariates is balanced between the treated (framing) and control (no framing) groups (see Appendix, A.3).

[42] The model was estimated for individuals in the control group of our experiment -- those that received no introduction to the question on trade -- thus the smaller sample size.

[43] Results using an ordered dependent variable are substantively identical to those using the dummy variable, and were thus excluded to avoid clutter.

paid work to assess the impact of education for individuals who are using their skills in the workforce.[44]

<center><Table 6 here></center>

As expected, Model 1 confirms that individuals living in import-competing districts are significantly less likely to support trade integration. In terms of marginal effects, the probability of trade support is reduced by 6 percent for individuals in import-competing regions. Model 1 also confirms that more educated respondents express greater support for trade opening, controlling for working status as in Hiscox. In terms of marginal effects, having completed high school increases support for openness by 10 percentage points. Like Hiscox, we also find that women are significantly more protectionist than men. We find no significant effect for the working status of respondents.

To explore framing effects, Model 2 analyzes the responses of all four groups (including the three groups exposed to framing vignettes) and introduces an interaction term between "framing" and "import-competing region." The effect of the interaction is positive; based on this model in Table 7 we compute predicted probabilities of trade support for individuals in import-competing and non-import-competing regions and compare framing effects for both groups.[45] The overlap in the confidence intervals (first

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[44] Hainmueller and Hiscox 2006.

[45] In particular, these are predicted probabilities for a 43-year old male who completed high school and has paid work.

data column) tells us that in import-competing regions the effects of framing are not statistically different from zero for our representative respondent, thereby suggesting stronger priors and weaker sensitivity to framing effects, and giving support to our hypotheses about material effects.

<Table 7 here>

To contrast the impact of education with the material effects captured by region, we proceed to assess how individuals with relatively similar education levels react to framing effects conditional on their geographic location. Thus, we add to the simple models introduced above a triple interaction term between education, framing, and region. Table 8 (Model 1) presents the results from this model.

<Table 8 here>

To further assess the different interpretations of education as socialization versus skill development, we introduce a dummy variable (occupation) that provides an occupational measure of skill as an alternative to education (Model 2). This dummy variable takes a value of one if the occupational score for the head of household is above the median of the sample (high skill), and zero otherwise (low skill). The scoring is explained in Appendix A.2. The models on Table 8 are therefore run both with education and with occupation as a proxy for skill. Although education is significant and occupation is not, the results are robust to the change of education for occupation as a proxy for skills. Given the difficulties in interpreting the triple interactions, we simulate the predicted probability of trade support for different groups of respondents, while keeping the rest of the variables constant at their means and the binary variables at

their modal value. The substantive meaning of our results can thus be interpreted on Figures 1 and 2.

<Figures 1 here>

Figure 1 shows that the impact of framing is higher in both regions for the less educated respondents, whereas support for trade is higher across education levels in the non-import competing region. However, Figure 1 also demonstrates that for individuals with similar education, the difference in the predicted probability is affected by framing to a much larger extent in the non-import-competing region, where the difference is nine percentage points and statistically significant—than in the import-competing region, where the difference is only three percentage points and not statistically significant—as predicted from the stronger priors that the clearer material effects of trade should have generated. Although framing effects impact less educated individuals in both regions, these effects are stronger in non-import-competing regions, where framing produces a difference of 0.17, as opposed to 0.08 in the import competing locations. For educated individuals, we can only identify framing effects in the non-import-competing region where the distributive impact of trade is less clear. We therefore find stronger empirical support for our interpretation of material effects than for purely socialization effects derived from education. That is, the effect of education on weakening framing effects does not hold across regions and it is less clear for the non-import competing region. However, both effects may be at work since the weakest impact of framing is on highly educated respondents in the import competing region, where material effects are clearer.

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When we replace education for occupation and simulate the predicted probabilities of trade support for different groups of respondents in Figure 2, we find similar results in terms of the direction and the magnitude of effects. Whereas the low skilled are affected by stronger framing effects than the high skilled workers in both regions, framing effects are only significant in the non-import competing region for both the high and low skilled respondents. The lack of significant effect among the low skilled in the import competing region, in particular, gives further support to our hypothesis about material effects.

<Figure 2 here>

To further probe the argument that material incentives are likely to affect the susceptibility to issue framing, we analyze whether the pattern of responses varies between individuals in manufacturing, the comparative disadvantage sector of the Argentine economy, and those in services. We would expect that those in manufacturing are less likely to support openness than those in services, and that they are also less likely to be affected by the frame in the survey.[46] The last two columns in Table 8 reproduce Models 1 and 2 for sample reduced to individuals in the service sector. The results remain robust and Table A.4 (Appendix) includes the simulation of

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[46] The number of individuals directly involved in agricultural production in our survey is only 2.5% of the sample, so we cannot systematically analyze their pattern of support for trade. Unfortunately we do not have data that would allow us to classify individuals by industry beyond the broad categories of service and manufacturing.

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predicted probabilities, showing stronger regional than skill level differences on sensitivity to framing effects. Moreover, Table 9 provides a comparison of mean levels of trade support in the manufacturing and service sectors, while controlling for education and skill levels. It shows that differences in education or skill have little impact on defining sensitivity to issue framing for individuals in the manufacturing sector. Yet, these differences are substantial in the service sector, where the effect is indirect, especially for those with lower education or skill levels.

<TABLE 9 HERE>

Summing up:

We find different framing effects for different levels of educational attainment in Argentina. These results are identical to those reported by Hiscox. Yet we also find support for our hypothesis about the impact of material effects on the intensity of preferences and their sensitivity to framing effects. Individuals in import-competing regions are less sensitive to framing effects across educational or skill levels; we also find that framing effects are weaker among individuals employed in manufacturing than among those in the service sector, in line with our predictions. Our results cast doubt on the interpretation of prior education effects on framing as originated solely by the impact of socialization. Indeed, the ambiguous effects we find in import-competing regions are more in line with the interpretation of education reflecting skill differentials rather than socialization, although they are not definitive. Therefore, we suggest that analyzing material effects is crucial not only for understanding trade preferences, but

also for understanding the incentives of individuals to inform themselves and adopt stronger priors, and hence, their sensitivity to issue framing.

IV- Conclusion

This article brings material interests back into the debate around the origin of trade policy preferences and the impact of framing effects in public opinion surveys. Using a survey experiment we find strong evidence that material concerns not only have the potential to shape individuals' trade preferences, but also to affect respondents' sensitivity to framing effects. Our results suggest that when assessing the role of framing effects on individual preferences over trade policy it is not enough to look at education and socialization effects.   Indeed, it is also crucial to analyze how the expected distributive effects of trade influences individuals' priors on the issue and, hence, mitigates the effects of the frames. Moreover, our results suggest that the positive correlation between education and support for trade -- found in the United States and reproduced in the Argentine case -- may in fact capture skill effects associated with the material distributive effects of trade. These findings are in line with the recent literature on trade, which suggests gains for skilled workers not only in countries where they are abundant, as in the United States, but also in countries where they are scarcer, as in Argentina.

This paper underscores the importance of understanding how material concerns impact framing effects by showing that stronger priors rooted in the distributive consequences of trade can mitigate the expected effects of issue framing. It is thus

important to investigate how these different effects shape the impact of framing to better assess the evolution of public opinion and the role of political discourse in framing public policy views. These effects have been ignored in the literature to date, which has focused on the mitigating effects of socialization and education.

Our findings, though tentative, have important implications for political discourse. We suggest that politicians should have an easier time shifting public views on trade among those citizens for whom the impact of trade is more ambiguous. Moreover, it also points to the importance of emphasizing elements of the trade debate that resonate with citizens when seeking to shape the political agenda. Indeed, the Argentine presidents Nestor Kirchner and his wife and successor Cristina Fernandez de Kirchner explicitly highlight the deleterious price consequence of exporting food staples in justifying both price controls and trade restrictions. These measures should have been popular in the import competing regions where their core constituencies were located. Yet, both presidents were able to frame these policies so that they also resonated with residents of the non-import competing regions, for whom the effects of trade were more ambiguous, especially those in the service sector for which the positive spillovers of trade were indirect.

We conclude by emphasizing the need to bring material concerns back into the study of individual preferences towards globalization more generally and trade policy in particular. Our results suggest that, in order to understand political coalitions and the role of political discourse and persuasion on the formation of support of policy choices in democratic polities, it is incumbent upon scholars to blend trade theory with political

psychology. In particular, our findings show that material concerns have as much bearing on identifying the strength of support for openness as they do on affecting the formation of priors that determine how sensitive individuals are to framing effects and thereby to public discourses that are used in the formation of policy coalitions.

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Table 1. Distribution of respondents by education level and region

	Non-Import Competing	Import Competing	Total
Low skill	650	752	1,402
	46.36	*53.64*	
	52.04	**48.86**	50.29
High skill	599	787	1,386
	43.22	*56.78*	
	47.96	**51.14**	49.71
Total	1,249	1,539	2,788
	44.8	55.2	

Note: Frequency, *Row,* **Column** percentages

Table 2. Percentages of respondents who favor increasing trade (% who strongly agree and somewhat agree with the question)

	Question: Do you agree or disagree with Argentina increasing its commerce with other nations?
All respondents (N=2729)	71.31
Pro-trade introduction (N=687)	69.43
Anti-trade introduction (N=674)	67.95
Both introductions (N=687)	69.29
No introduction (Group 4: N=673)	78.46

Table 3. Impact of Frames on individual support for trade (logistic regression)

PRO-TRADE INTRO	-0.457***
	(0.128)
ANTI-TRADE INTRO	-0.562***
	(0.128)
MIXED INTRO	-0.504***
	(0.128)
Constant	1.356***
	(0.0962)
Observations	2,679

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4. Sensitivity to Framing by Education Level

Frame	More education (completed high-school and beyond)	Less education (did not complete high-school or less)
Pro-trade introduction	78.45%	62.81%
	N=348	N=320
Anti-trade introduction	75.47%	62.61%
	N=318	N=345
Both introductions	77.68%	61.82%
	N=345	N=330
No introduction (Group 4)	83.58%	75.38%
	N=335	N=325

Table 5: Sensitivity to Framing Effects by Region

Frame	Import-Competing	Non-Import Competing
Pro-trade introduction	70.51%	71.81%
	N=263	N=214
Anti-trade introduction	71.12%	66.11%
	N=261	N=197
Both introductions	70.90%	69.10%
	N=268	N=208
No introduction	76.65%	83.0%
(Group 4)	N=279	N=249

Table 6: Individual support for trade (logistic regression)

	1	2
EDUCATION	0.663***	0.743***
	(0.211)	(0.0941)
IMPORT COMPETING REGION	-0.431**	-0.426**
	(0.201)	(0.200)
FRAMING		-0.785***
		(0.172)
IMPORT COMPETING REGION X FRAMING		0.468**
		(0.224)
EMPLOYED	-0.00549	-0.0229
	(0.208)	(0.0949)
AGE	0.0150**	0.00707***
	(0.00613)	(0.00272)
FEMALE	-0.523**	-0.243**
	(0.217)	(0.0957)
Constant	0.981***	1.107***
	(0.375)	(0.221)
Observations	656	2,650

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Probability of Trade Support: Framing and Region

	Predicted Probability of Trade Support	
	Import Competing Regions	Non-import Competing Regions
Framing	0.80 (0.76-0.83)	0.79 (0.75-0.83)
No Framing	0.84 (0.80-0.88)	0.89 (0.86-0.92)
Difference	0.04	0.10

Predicted probabilities derived from coefficients reported in Table 6; 95% confidence intervals in parentheses.

Table 8: Individual support for trade (logistic regression)

	1	2	3	4
	Full Sample		Services only	
IMPORT COMPETING REGION	-0.424	-0.445*	-0.495*	-0.469
	(0.264)	(0.268)	(0.293)	(0.304)
EDUCATION	0.591*		0.457	
	(0.316)		(0.356)	
OCCUPATION		0.264		0.450
		(0.320)		(0.356)
EDUCATION X IMPORT COMPETING REGION	0.175		0.0910	
	(0.277)		(0.308)	
OCCUPATION X IMPORT COMPETING REGION		-0.144		-0.00305
		(0.267)		(0.295)
FRAMING	-0.866***	-0.843***	-0.929***	-0.842***
	(0.224)	(0.221)	(0.253)	(0.257)
FRAMING X IMPORT COMPETING REGION	-0.818***	-0.915***	-0.849***	-0.812***
	(0.222)	(0.220)	(0.250)	(0.254)
FRAMING X EDUCATION	-0.0758		-0.235	
	(0.234)		(0.264)	
FRAMING X OCCUPATION		-0.496**		-0.384
		(0.229)		(0.259)
FRAMING X EDUCATION X IMPORT COMPETING REGION	-0.0440		-0.0726	
	(0.227)		(0.256)	
FRAMING X OCCUPATION X IMPORT COMPETING REGION		-0.311		-0.159
		(0.222)		(0.253)
EMPLOYED	-0.0213	0.0165	0.00386	-0.0221
	(0.0950)	(0.095)	(0.105)	(0.106)
AGE	0.007***	0.004*	0.00738**	0.00521*
	(0.002)	(0.002)	(0.00308)	(0.00301)
FEMALE	-0.242**	-0.190**	-0.210**	-0.183*
	(0.095)	(0.094)	(0.106)	(0.105)
Constant	1.165***	1.397***	1.147***	1.218***
	(0.254)	(0.251)	(0.285)	(0.283)
Observations	2,650	2632	2,093	2090

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Framing effects on individual support for trade: manufacturing versus services

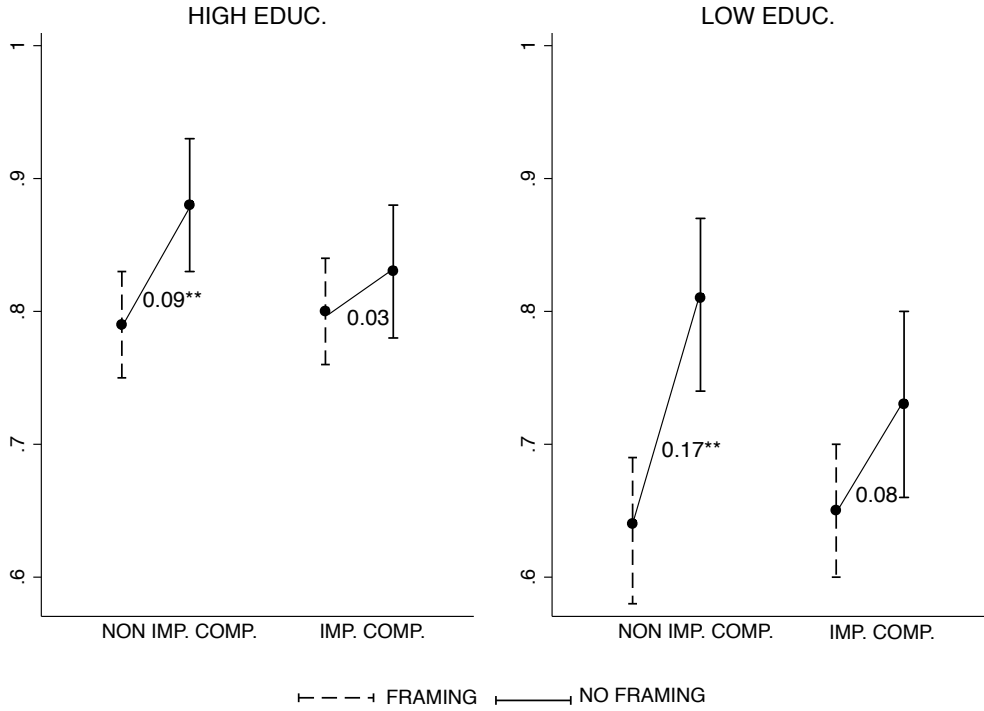|	MANUFACTURING			SERVICES		
	Low Educ	High Educ	Difference	Low Educ	High Educ	Difference
Framing	68.89	69.81	0.92	61.79	76.21	14.42
No Framing	76.47	70.00	6.47	74.72	82.38	7.66
Difference	7.58	0.19		12.93**	6.17	

	Low Occup.	High Occup.	Difference	Low Occup.	High Occup.	Difference
Framing	65.33	74.63	9.30	62.35	74.21	11.86
No Framing	69.23	78.26	9.03	74.90	81.18	6.28
Difference	3.90	3.63		12.55**	6.97	

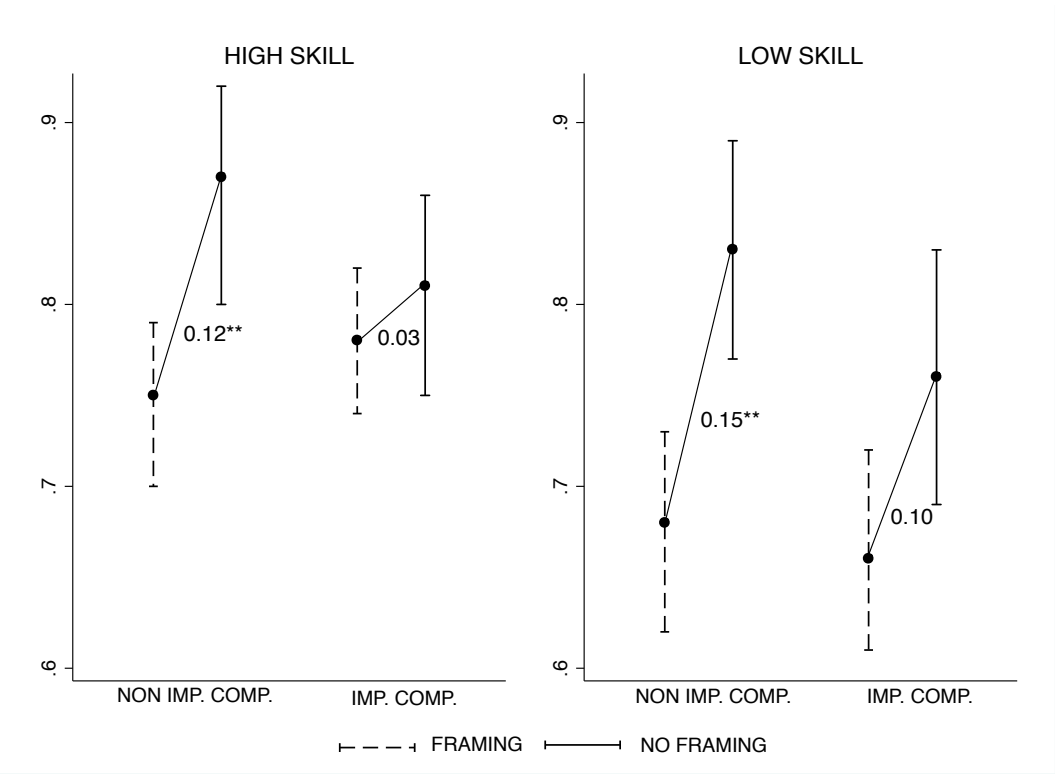**Significant at 95% confidence level

Figure 1. Probability of trade support: framing effects across education and region

Predicted probabilities and 95% confidence intervals derived from coefficients reported in Table 8 (Model 1); High education=1 if education greater than or equal to completed high school. **Denotes statistically significant differences (5% alpha level)

Figure 2. Probability of trade support: framing effects across occupation levels and region

Predicted probabilities and 95% confidence intervals derived from coefficients reported in Table 8 (Model 2); High skill=1 if occupational score greater than median. **Denotes statistically significant differences (5% alpha level)

APPENDIX

A.1. Survey Description

The public opinion survey was fielded in Argentina in March and April of 2007. The subjects are a drawn from a stratified random sample of adult population residing in cities of over 10,000 (excluding the 4 scarcely populated provinces in the Patagonia region). The breakdown of the number of subjects in each city and district is the following:

Region	City	District	PMS	Cases
Cuyo	Tunuyán	Tunuyán	6	30
Cuyo	San Martín - La Colonia	Various	4	20
Cuyo	San Rafael	San Rafael	5	25
Cuyo	Gran San Luis	La Capital	7	35
Cuyo	Gran Mendoza	Various	38	190
Northeast	Saladas	Saladas	5	25
Northeast	General José de San Martín	Libertador General San Martín	12	60
Northeast	Goya	Goya	10	50
Northeast	Gran Posadas	Capital	14	70
Northeast	Gran Resistencia	San Fernando	19	95
Northwest	Joaquín V. González	Anta	8	40
Northwest	Tafí Viejo	Tafí Viejo	10	50
Northwest	Gran San Fernando del Valle de Catamarca	Various	4	20
Northwest	Santiago del Estero - La Banda	Various	8	40
Northwest	Gran Salta	Various	12	60
Northwest	Gran San Miguel de Tucumán	Various	18	90
Pampeana	Frontera	Castellanos	8	40
Pampeana	Sunchales	Castellanos	9	45
Pampeana	Miramar - El Marquesado	Various	10	50
Pampeana	Balcarce	Balcarce	6	30
Pampeana	San Francisco	San Justo	9	45
Pampeana	Junín	Junín	3	15
Pampeana	San Nicolás de los Arroyos	San Nicolás	4	20
Pampeana	Bahía Blanca	Bahía Blanca	8	40
Pampeana	Gran Santa Fe	Santa Fe Capital	13	65
Industrial/Metrop.	Gran La Plata	Various	20	100
Industrial/Metrop.	Gran Rosario	Various	23	115
Industrial/Metrop.	Gran Córdoba	Various	27	135
Metropolitan	Ciudad de Buenos Aires	Ciudad de Buenos Aires	55	275
Metropolitan	Gran Buenos Aires	Various	185	925
	Total		560	2800

A.2. Indicator of Occupation

We measure the skill level of individuals with an occupational dummy variable (*occupation*), that takes a value of 1 if the occupational score for the head of household is above the median of the sample (high skill), and 0 otherwise (low skill). Occupational scores are based on the following classification table:

OCCUPATION TYPES & SCORES (IN PARENTHESIS)
FREE LANCE

FREE LANCE

- Stockers (4)……………………………………………
- Non-specialized labor (11)…………………………
- Shopkeeper without personnel (18)………………………
- Arts/Technician/Specialized labor (24)………………………
- Independent Professional (30)………………………
- Other (17)……………………………………

EMPLOYER

- Employer 1-5 employees (30)……………………………
- Employer 6-20 employees (36)…………………………..
- Employer 21-+ employees (40)………………………

SALARIED WORK

- Housekeeper (7)………………………………..
- Non-skilled worker (9)……………………………
- Skill worker (17)……………………………………
- Technician (23)………………………………..

EMPLOYEES (NO HIERARCHY)

- Government employees (12)………………………
- Private sector employees (17)…………………….

MID LEVEL MANAGEMENT

- Government Sector (19)…………………………
- Private Sector (24)…………………………

GRAL MANAGEMENT
- Government Sector (26)………………………………
- Private Sector (30)………………………………

HIGH MANAGEMENT

- Government Sector (28)…………………………….
- Private Sector (37)…………………
- Renter (20)……………………………………………

A.3. Distribution of covariates: treatment and control groups

Covariates	No Framing	Framing	Difference	t-value
Import competing region dummy	.550	.554	-.003	-0.179
	(.018)	(.010)	(.021)	
High education dummy	.503	.494	.008	0.393
	(.019)	(.010)	(.022)	
High occupation dummy	.490	.505	-.015	-0.68
	(.019)	(.010)	(.022)	
Employment dummy	.478	.441	.037	1.69
	(.019)	(.010)	(.021)	
Age	43.88	44.03	-.143	-0.191
	(.651)	(.372)	(.750)	
Female dummy	.615	.628	-.012	-0.58
	(.018)	(.010)	(.021)	

A4. Robustness checks: Restricting sample to service sector

Probability of trade support in the service sector: framing effects across education levels and region

High education, Non-import competing regions	Predicted Probability	Low education, Non-import competing regions	Predicted Probability
Framing	0.77 (.72, .82)	Framing	0.63 (.56, .73)
No framing	0.87 (.81, .93)	No framing	0.81 (.74, .88)
Difference	0.10	Difference	0.18**
High education, Import competing regions	Predicted Probability	Low education, Import competing regions	Predicted Probability
Framing	0.80 (.76, 88)	Framing	0.64 (.59, .70)
No framing	0.82 (.75, .84)	No framing	0.72 (.64, .80)
Difference	0.02	Difference	0.08

Predicted probabilities derived from coefficients reported in Table 8 (Model 3); High education=1 if competed high school (95% confidence intervals in parentheses)

Probability of trade support in the service sector: framing effects across occupation levels and region

High skill, Non-import competing regions	Predicted Probability	Low skill, Non-import competing regions	Predicted Probability
Framing	0.73 (.68 .78)	Framing	0.64 (.57, .70)
No framing	0.86 (.80, .93)	No framing	0.80 (.73, .87)
Difference	0.13**	Difference	0.17**
High skill, Import competing regions	Predicted Probability	Low skill, Import competing regions	Predicted Probability
Framing	0.77 (.73, .82)	Framing	0.64 (.58, .70)
No framing	0.80 (.74, .86)	No framing	0.72 (.63, .80)
Difference	0.03	Difference	0.08

Predicted probabilities derived from coefficients reported in Table 8 (Model 4); High skill=1 if occupational score greater than median.