

Working Paper No 2013/08 | May 2013

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# Ego- vs. Sociotropic: Using Survey Experiments to Understand Individuals' Trade Preferences

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## **Ego- vs. Sociotropic:**

### **Using Survey Experiments to Understand Individuals' Trade Preferences**

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#### **Abstract**

Economic self-interest has been central to explaining individual trade preferences. Depending on the theoretical trade model different variables should influence individuals' attitude towards globalization. Existing research has come to different conclusions as to whether individuals' preferences are dependent on their skills (i.e. their level of education), their income or the sector in which they are employed. Other studies depart from economic self-interest by arguing that it is not economic *self*-interest that motivates individuals to form their preference, but country-level economic factors (sociotropic considerations) instead (Fordham 2008, Mansfield and Mutz 2009). We argue that one needs to approach this empirical incoherence from an information-based perspective, as the predictions of the different trade models are not mutually exclusive. We pick up the informational critique most prominently portrayed in Fordham and Kleinberg (2012), namely we question whether people know that they belong to the category of winners and losers and we test experimentally how people react if they are aware that they personally or nationally will gain or lose from trade and which of the two aspects (personal vs. national gains or losses) are more important. By using survey experiments we are able to differentiate whether a person was triggered by ego- or socio-tropic benefits/costs of free trade. We accordingly conducted several online survey experiments, in which we rely on informational treatments. Overall, our results lend more support to a factor-based reasoning on trade than for the sector-based mechanism. In addition, we do not find much evidence for a sociotropic view of trade openness. These results are bad news for policy makers since their ability to increase support for further trade liberalization by telling citizens that their country will profit from this process seems to be rather limited.

## Introduction

Economic self-interest has been central to explaining individual trade preferences. Standard re-distributional models refer to either factor income or sector belonging being crucial in determining whether an individual will embrace foreign trade or not. Whereas the factor endowment model (Heckscher-Ohlin, HO) highlights both skill level as well as capital ownership as the driving forces behind a person's trade preferences, the specific sector model (Ricardo-Viner, RV) points to sectoral employment as the important explanatory variable. Existing research has come to different conclusions as to whether individuals' trade preferences are dependent on their skills (i.e. their level of education), their income or the sector in which they are employed. Given this lack of coherent findings on which of the theoretical model predictions empirically hold, authors have increasingly proposed alternative explanations of what factors are decisive for individual preference formation on trade policies.

Such explanations depart from economic self-interest by either arguing that the economic part is not the most decisive factor, but claim that individual predispositions, such as gender (Burgoon and Hiscox 2004), needs for security and certainty (Johnston 2013) or other non-economic factors such as their social capital endowment (Spilker et al. 2012), consumer tastes (Baker 2005). Or, studies find that it is not economic *self*-interest that motivates individuals to form their preference, but country level economic factors instead (Fordham 2008, Mansfield and Mutz 2009). Using insights from literature on sociotropic voting (Kinder and Kiewiet 1981, Sears and Funk 1990) and transferring it to the trade preference literature, Mansfield and Mutz (2009) indeed find that sociotropic factors have a larger and more significant effect on trade preference than objective individual self-interest.

Alongside the substantial theory building and the empirical tests to determine the sources of individual trade preferences, however, critical contributions have tackled more fundamental questions of the plausibility of some of the assumptions regarding an individual's capacity to define and act upon its economic self-interest. Within the above-mentioned discussion on the role of economic self-interest in shaping trade preferences, it has been criticized, that it is unrealistic to assume that individual calculations of economic interests lead to trade policy attitudes (Fordham and Kleinberg 2012, Schaffer and Spilker 2012). More specifically, most scholarly contributions explaining individuals' trade preferences by the two

standard trade models (HO and RV). Applying these trade models, authors implicitly<sup>1</sup> assume that citizens when asked for their preference for trade, make a lot of complex calculations given the information they have on their economic situation or job prospect, and will then form a preference that is either based on their factoral endowment, or in which they consider their sectoral belonging to be decisive (Fordham and Kleinberg 2012). Also, scholars such as Baker (2009) have noted that citizens generally have a hard time understanding implications of policies on their livelihood. Furthermore, the trade policy topic is generally considered to be a complex issue about which most respondents are poorly informed (Burgoon and Hiscox 2004<sup>2</sup>) and/or prescribe little salience to (Guisinger 2009). Cobb and Nance (2013) go one step further and claim that due to the lack of meaningful opinions about trade policies, research includes people with weak or no preferences alongside those with strong preferences, which may lead to skewed or at least less precise analyses.

In this paper, we pick up the informational critique most prominently portrayed in Fordham and Kleinberg (2012), namely we question whether people know that they belong to the category of winners and losers and we test experimentally how people react if they are aware that they personally or nationally will gain or lose from trade and which of the two aspects (personal vs. national gains or losses) are more important. In line with Kleinberg and Fordham (2012) we stipulate that the process through which individuals form their trade policy preferences requires more scholarly attention. Such insights are crucial for the ongoing debate regarding the importance of economic self-interest vis-à-vis national (or regional) economic considerations to be solved, as well as the debates whether individuals do consider their factoral endowment more important than their sectoral employment when stating attitudes towards trade or economic openness in general.

Consequently, this project strives to better understand which type of information individuals rely upon when forming their attitude towards globalization: Do individuals focus more on ego- or socio-tropic benefits/costs of free trade? Do they – and if so how - trade off one against the other? Plus, if individuals indeed focus more on their economic self-interest, do they evaluate their trade preference more in a factor-endowments (H-O) reasoning or given sectoral conflict lines as predicted within the specific sectors (RV) framework?

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<sup>1</sup> An exception are Scheve and Slaughter (2001) who explicitly state that they “assume that individuals know with certainty the effects of trade policies on individual incomes and asset holdings”.

<sup>2</sup> For a more general inquiry into citizen's knowledge about politics, see also Carpini and Keeter 1997; Lewis-Beck and Stegmaier 2000; Sears and Funk 1991.

Using existing survey data to empirically test how individuals are processing individual- vs. country-level information when evaluating globalization is hardly possible. Another problematic inherent in the sociotropic argument is the assumption that individuals can clearly distinguish between their own economic situation and the economic situation of the whole country. The difficulty in distinguishing between pure sociotropic-based preferences and self-interest decision making lies in the fact that only in situations in which we can detect a clear deviation of the individual's economic situation from the collective's situation we may be able to discriminate selfish and socio-tropic-based preferences.

This implies that only by using survey experiments are we able to differentiate whether a person was triggered by ego- or socio-tropic benefits/costs of free trade. To analyze our theoretical arguments we accordingly conducted several online survey experiments, in which we rely on informational treatments to resolve this issue. After various rounds of pre-tests both in the ETH laboratory and on a sample that was obtained via the crowd-sourcing platform Amazon Mechanical Turk (AMT) have shown that respondents understand our information treatments, we launched various rounds of experiments via AMT. This online platform allowed us to gather data from individuals in the US and India.

With regard to the discussion between HO and RV theoretical trade models of economic self-interest, our results lend more support to a factor-based reasoning on trade than for the sector-based mechanism. More importantly even, we do not find much evidence for a sociotropic view of trade openness. In the factor-based experiment, individuals never react to country-level information alone and while they sometimes react to country-level information in the sector-based experiment, they do so in a way that differs from the causal mechanism proposed in the existing literature: individuals never seem to reward positive country-level information with higher trade approval rates, as suggested by previous contributions to the literature, they tend to react to negative country-level information with lower trade approval rates. These results are bad news for policy makers since their ability to increase support for further trade liberalization by telling citizens that their country will profit from this process seems to be rather limited. Rather governments should probably think of strategies to compensate the losers from trade in order to safeguard them from the potential negative effects of trade openness.

This study advances upon existing research in a number of important ways. First, one of the two main points of critique in Mansfield and Mutz's (2009) attempt to test whether sociotropic concerns drive individual trade preferences mentioned by Fordham and Kleinberg (2012) is the problem of regressing attitudes on attitudes and the corresponding problem with causality. The same problem arises also in other studies that test sociotropic arguments<sup>3</sup>. This paper now sets out to test the validity of Mansfield and Mutz's claim concerning sociotropic information's effect while being able to circumvent the attitudes on attitudes problem given our research design.

Second, we explicitly distinguish between the standard trade theories' predictions about the sources of economic self-interest. Thus, whether individuals form their opinions towards trade along factoral (HO) or sectoral (RV) lines. While both models have been extensively used in research on individual trade preferences before, we advance upon existing research to the extent that we are able to link an individual's employment sector directly to measures of whether this sector has been hit hard by globalization or not.

Third, systematically varying information about globalization paired with the ambiguity of the concept may lead to biased estimates in survey research. With our design we can prime respondents on the concept of globalization as it relates to employment rather than consumption (Baker 2005) as well as distinguish information on the individual level from information regarding the country level impact of trade.

## **Literature Review**

Economic self-interest has been central to explain individual trade preferences. Standard redistributional models refer to either factor income or sector belonging being crucial in determining whether an individual will embrace foreign trade or not. Depending on the theoretical trade model, factor endowment (Heckscher-Ohlin) versus factor specific trade (Ricardo-Viner) model, different variables should influence individuals' attitude towards globalization. Whereas the factor endowment model highlights both skill level as well as capital ownership as the driving forces behind a person's trade preferences, the specific sector model points to sectoral employment as the important explanatory variable. Existing research

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<sup>3</sup> A recent example is McMann (2012), who finds support for the sociotropic argument by showing that individuals who perceive their national economy to fare better than 12 months before are more pro integration in Latin America, while egotropic perceptions do not seem to matter.

has come to different conclusions as to whether individuals' trade preferences are dependent on their skills (i.e. their level of education), their income or the sector in which they are employed. O'Rourke and Sinnott (2001) find support for the factor endowments model in a cross-national context. Mayda and Rodrik (2005) seek to explain individuals' attitude towards trade by using economic as well as non-economic individual level factors. They find that individuals in sectors with a comparative disadvantage have a negative attitude towards trade whereas individuals with better economic status or those in non-traded sectors are pro-trade. Thus, their finding lends support to both the HO and RV models.

This dichotomy on (economic) winners or losers of the process liking it or not is questioned by various authors from various directions. Some have hinted to the importance of non-economic explanations in forming trade preferences. Research on gender / age / nationalism has found that these are relevant predispositions to determine preference (Mayda and Rodrik (2005). Hainmüller and Hiscox (2006) further argue that education measures something more than skill within in a factor endowments framework and should therefore not be used to test these models. They question that education acts as a self-interest variable in that it determines factor income and thus a higher income for better educated people; but that it rather is the theories and information that people that go to college are exposed to and thus "learn to love globalization". Thus, information (or ideas) on trade's impact obtained during education is determining preferences rather than skill level (Hainmüller and Hiscox 2006).

More recently, scholars have turned to sociotropic or country level information (Fordham 2008 / Mansfield and Mutz 2009 / Fordham and Kleinberg 2012) as a basis for individual trade preferences. Mansfield and Mutz (2009) reject self-interest as the only force determining trade preferences in that they posit that individuals base their opinions on national level / collective information and are sociotropic rather than pocketbook-centered. In their view, persons make their mind up about trade due to information cues on how the nation is faring given international trade rather than making an individual assessment of self-interest on this issue.

Thus, the studies looking at economic information (Hainmüller and Hiscox 2006) and at country level information (Mansfield and Mutz 2009) have already brought valuable insights without explicitly testing the differentiated impact on information on people's trade preferences.



## **Theoretical Argument**

### *Self-interest-based models*

Most theoretical accounts on how individual's trade preferences can be explained start by considering the redistributive effects of trade and how these then shape attitudes. To predict who should be in favor or against trade liberalization, existing research most commonly relies on the two workhorse models of international trade, the factor endowments (or Heckscher-Ohlin) or the specific factors model. By assessing whether a person's economic situation should become better or worse with an increase in trade, these models make clear predictions about who will be a winner or a loser of this process.

In the classical Stolper-Samuelson theorem (as an implication of the Heckscher-Ohlin (HO) model), free trade benefits individuals owning the relatively abundant factor (in the United States, these are the owners of capital or the owners of labor skills, c.f. Oatley 2010), and hence these individuals tend to favor globalization, whereas unskilled and low-skilled labor as the owners of disadvantaged factors see a decline in their real incomes. In contrast to the HO model, the specific factors model, or the Ricardo-Viner (RV) framework, would predict that sectors serve as the conflicting lines concerning preferences toward free trade. Accordingly, individuals who receive their income out of the comparatively advantaged sectors, i.e. sectors that will gain from globalization, will be in favor of trade openness whereas those sectors that are comparatively disadvantaged will oppose trade openness. These two theoretical accounts both view trade's distributional consequences on an individual's material self-interest as the main source for their specific trade preferences. We can thus formulate two conflicting hypotheses:

*H1a: Individuals that are endowed with labor skill and / or are owners of capital are more in favor of trade*

*H1b: Individuals working in sectors that are comparatively advantaged will embrace trade openness*

### *Information-based models models*

As intuitively plausible and theoretically sound these models may be, they rest on several assumptions that scholars have increasingly questioned and we explicitly want to address in

this paper. The first implicit assumption in this kind of research is that individuals can and do assess whether according to the educational qualifications they have obtained and the sector they are working in, they belong to the group of globalization winners or losers. In our view this is a very tough assumption since this requires a strong effort in understanding the economic consequences of trade liberalization from normal citizens/laymen. In order to judge whether one belongs to the category of globalization winners, a person needs to know, depending on the respective theoretical trade model, whether her skill level makes her likely to gain from trade or whether her job is in a sector that is not threatened by globalization.

A further assumption emanating from these standard trade models that has been questioned in the literature is that individuals form their preferences according to material self-interest. Translating insights from the economic voting literature (Kinder and Kiewiet 1981, Sears and Funk 1990, more recently Kayser and Peress 2012), scholars such as Fordham (2008) and most prominently Mansfield and Mutz (2009) have argued that individuals might form their trade preferences given the effect trade liberalization has on the country. Hence instead of (only) considering the self-interested (egotropic) effects of trade (i.e. how a person's economic situation changes with trade openness), individuals might also take into account sociotropic effects of trade. The argument here is that problems such as unemployment on the collective level matter much more for opinion formation than e.g. individual level job losses (Mansfield and Mutz 2009). Here one can imagine a scenario where due to geographical concentration of a certain industry in one state or county, individuals rather fear the negative consequences trade openness may have on local conditions than evaluating their trade preferences based on their own (potentially positive) distributional consequences of trade. Consequently this means that external information on what the impact of trade on the nation or other collective level is or will be constitutes a further avenue to individual trade preference formation. To explicitly account for such pathways, we develop theoretical arguments on the use of given information on trade's impact on the country in trade preference formation.

In accordance with Fordham and Kleinberg (2012) as well as with Mansfield and Mutz (2009) we argue that theoretical accounts dealing with an individual's exposure to information and how this shapes his trade preference are understudied. *We are thus interested, which information is important for people to form their trade preference given that trade consequences are hard to evaluate for individuals both on the personal and on the national*

level (Baker 2005, Fordham and Kleinberg 2012). Also, trade is a low profile issue (Burgoon and Hiscox 2004, Guisinger 2009) for most individuals and media or political parties rarely give cues to citizens on how to perceive trade. Without being presented clearly attributable information on trade's impact on their material self-interest, the calculations or extrapolations people have to make are very complex (Baker 2005). Hence, our substantive interest for this paper is to evaluate the influence of clearly attributable information about an individual's or national consequence of trade on her attitude towards trade and economic openness in general. Put differently, we add to the discussions within the literature in gauging the relative influence of socio- vs. egotropic consequences of trade under circumstances of perfect information. To this end, we differentiate between the content of information on trade and form three hypotheses on the direct effect of information triggering self- interest (given the different distributional assumptions stipulated by the HO and RV model) or giving information on the collective level.

*H3: Individuals' exposure to information on trade's impact on the collective level (e.g. country) has an impact on their trade preference*

*H4a: Individuals' exposure to information on trade's impact on the individual (factor endowments) level has an impact on their trade preference*

*H4b: Individuals' exposure to information on trade's impact on the individual (sector) level has an impact on their trade preference*

Thus alongside with Fordham and Kleinberg (2012), we also think that results found within the literature, namely that individuals do not form their trade opinions on self-interest but on predominantly sociotropic considerations, are exaggerating the influence sociotropic considerations play due to errors in their analysis (regressing attitudes on attitudes, e.g. Mansfield and Mutz 2009, McMann 2012). Given our experimental set up we are able to see whether people differ in their judgement of trade once they have information whether they themselves or their country wins or loses from trade. Accordingly, we would stipulate that given complete information, people will not react to sociotropic information, but be able to act upon their economic self-interest. However, if we should find that people - although equipped with perfect information given individual and national implications of trade - would react to sociotropic framings in a more pronounced way than to egotropic framings, then this

would be a strong confirmatory argument for Mansfield and Mutz (2012). The following paragraphs now introduce our empirical research design in more detail.

### **Research Design**

Understanding how citizens perceive and evaluate international trade and which factors are important in the formation of individual level trade preferences, requires large amounts of systematic data that measures how people think about trade and trade governance. Typically, existing research relies on already available survey data, for instance the American National Election Survey, the Eurobarometer, or the World Values Survey, to obtain such information (e.g. Hainmueller and Hiscox 2006; Hays, Ehrlich, and Peinhardt 2005; Mayda and Rodrik 2005). This approach, however, faces some limitations. First, there are very few surveys that measure trade preferences and many of the existing surveys are rather outdated. Second, most of these very few surveys cover a wide range of topics and include only very few general items (questions) on trade preferences and on the independent variables in question. Finally and most importantly, while standard surveys are useful for gauging public opinion in a descriptive and correlational manner, there are severe limitations if one aims at testing causal relationships (Fordham and Kleinberg 2012).

Survey embedded experiments have in recent years emerged as clearly superior from a methodological viewpoint once we aim at empirical testing of specific causal hypotheses (Morton and Williams 2010; Mutz 2011). In a survey experiment the researcher embeds so-called information treatments (stimuli) in the survey questionnaire. In our study, these stimuli consisted of different types of information regarding the benefits of trade for the individual or for the country. The questionnaire given to the subject was thus identical except for the different types of stimuli (for the treatment vs. control group). The random assignment of respondents to the different treatments ensures that any difference in the response variable – trade preference – between the treatment and control group is solely due to the treatment, and not to confounding variables. This approach therefore allows us to make a causal inference whether individuals evaluate international trade according to an egotropic or a sociotropic logic.

In particular, we have set up two experiments with respondents in the US – one based on the factor-endowment model and one based on the sectoral model of trade – in the following way: first, the respondents are randomly allocated to one of three groups (A, B, C). Individuals in group A and B receive information as to whether trade has positive (group A) or negative (group B) consequences for the country, the US in the case of our experiment,

(see figure 1). Individuals in group C (the control group) merely receive the information that trade has increased in the last decade.

Figure 1 about here

Secondly, two thirds out of each group (A, B and C) receive an additional personal-level informational treatment while the other third does not receive any additional treatment. More precisely, depending on their answers to the socio-economic questions we posed at the beginning of the survey experiment, the respondents that receive an additional treatment are allocated into two groups: globalization winners and globalization losers. This allocation is based on either a respondent's level of education – factor-endowment model – or on the sector she works in – sectoral model of trade. More precisely, the randomization based on the factor-endowment model implies that all respondent with an educational level of complete secondary school (university-preparatory type) and higher were considered to be globalization winners and all respondents with an educational level below this threshold were treated as globalization losers. Concerning the second experiment – sectoral model of trade – we followed the approach by Margalit (2011) to determine which sectors in the US are most vulnerable to trade. Margalit (2011) collected data on the number of workers per industry that were eligible to receive compensation by the government because of trade-related competition. Based on this data, we allocated respondents working in those sectors with the highest share of trade-related compensation to the ego-negative treatment whereas respondents working in sectors with little trade competition received the ego-positive treatment.<sup>4</sup>

Consequently, depending on whether someone – according to two standard trade theory models – can be conceived of as being a globalization winner or a loser she receives a reinforcing informational treatment. This means that the supposed globalization winners receive an encouraging informational treatment potentially reinforcing their belief that they personally profit from free trade. In contrast, the supposed globalization losers receive a discouraging informational treatment potentially reinforcing their belief that they personally lose from free trade. The remaining third in each group (A3, B3 and C3) receives no personal information treatment implying that C3 serves as the ultimate control group in the sense that the respondents in this group do not receive any priming at all.

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<sup>4</sup> Respondents working in the following sectors were treated as globalization losers: agriculture, hunting, forestry and fishing; mining, quarrying and oil and gas extraction; construction; manufacturing; and professional, scientific, and technical services.

Hence for the second treatment it is random whether someone is allocated to a treatment or the control group, however, it is not random what type of information this person receives. We chose this approach since we believe it is not very meaningful to tell someone who should in principle gain from trade that she is a trade loser and vice versa. While we adhere to a randomization process in that we allocate people randomly to either the control or the treatment group in the second stage of the experiment, one might challenge our results if individuals in the two treatment groups differed in how they perceive the treatments. More precisely, our approach could suffer from a selection bias if individuals who receive the ego-positive treatment differed in a systematic way from individuals who receive the ego-negative treatment and if this difference affected the way in which they process the experimental information. While this should not be the case for the experiment that is based on sectoral employment (since we do not believe that sectoral employment correlates with someone's perception of an informational treatment), it could, however, be problematic in the experiment based on education. For the latter experiment we therefore evaluate whether this conditional allocation to experimental groups distorts our results.

The information that the different groups received was the following: The sociotropic positive treatment states that the respective country profits from free-trade due to economic growth and potentially also due to less unemployment, whereas the sociotropic negative treatment specifies that the country loses from trade because it becomes more susceptible to the economic problems of other countries that could have spill-over effects on the domestic economy. The control group simply receives the information that international trade has increased over the last years. With regard to the egotropic treatments that were based on the factor-endowment model, respondents receiving the positive information are told that highly educated individuals profit from free trade since their job security and their income increase, whereas the negative treatment stated that individuals with little education lose from free trade since their job security and their income decrease. The control group did not receive any additional information. In contrast, the egotropic treatments based on the sectoral model tells respondents in the positive group that the specific sector (in which the individual works) profits from free trade and that the consequences are that jobs are not offshored and more revenue is created. In contrast, the negative treatment states that the specific sector loses from free trade with the consequences that jobs are offshored and less revenue is created. Again the control group did not receive any additional information. Table 1 gives a summary of the different treatments.

Table 1 about here

Following the different informational treatments, all respondents answered various questions to capture their attitude towards trade liberalization. These questions correspond to items that are typically used in the literature and thus are also found in other surveys such as the ANES or the Eurobarometer survey. In the remainder of the paper, we use two different questions based on the Eurobarometer surveys as the dependent variables for our analysis. However, the results are very similar if we use any of the other questions on trade attitudes.<sup>5</sup> More precisely, the two items ask respondents whether they tend to agree or disagree with the following statements: “You may have heard of globalization, that is the general opening-up of all economies, which leads to the creation of a world-wide market. For each of the following statements, could you please tell if you tend to agree or if you tend to disagree: (1) Overall, economic globalization is a good thing for the US and (2) overall, economic globalization is a good thing for me personally.”

Both experiments – factor and sectoral model of trade – were conducted online and participants were recruited on the crowd-sourcing platform Amazon Mechanical Turk (AMT). While samples obtained through AMT are no random samples, the socio-demographics of respondents are well identified allowing researchers to evaluate whether their results are generalizable to a wider population (AMT 2012; Berinsky, Huber, and Lenz 2012; Mason and Suri 2012; Ross et al. 2012), see also robustness section below. Before launching the final survey experiments, we ensured that respondents understand our information treatments in various pre-tests that were also conducted through AMT. Our samples consist of 923 respondents for the factor-endowment experiment and 955 respondents for the sectoral experiment. Tables 2 and 3 display summary information for the respondents according to each experiment.

Tables 2 and 3 about here

## Results

We begin the discussion of our results with a model that replicates the typical test found in the literature to evaluate the factor-endowment and sectoral model of trade in order to evaluate our hypothesis 1. For this purpose, we rely on the control groups of the two experiments to avoid any contamination by the various information treatments. We follow as closely as

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<sup>5</sup> Results are available upon request.

possible the modeling strategy typically found in the literature (Mayda and Rodrik 2005; Schaffer and Spilker 2009; Scheve and Slaughter 2001). To test the factor-endowment model we proxy an individual's skill level by her education. More precisely, we use two dummy variables to capture the level of education: *education\_high* takes on the value 1 for those individuals with a college degree and higher whereas *education\_mid* takes on the value 1 for those individuals who have a high school but no college degree. Those individuals with no high school degree serve as the baseline category. We measure capital ownership with a respondent's income (Hays 2009). To test the sectoral model of trade we follow Hays (2009) and collected import and export data for each industry for the year 2011 – the data is from the WTO trade database (WTO 2013). We then classified those industries as import competing (dummy variable), for which imports exceed exports, and those industries as export industries, for which exports exceed imports. As an alternative measure we use the data by Margalit (2011), which we also use to allocate people to the different treatment groups for the sector-based experiment. More precisely, we created a dummy variable that takes the value 1 for those sectors with a relatively high number of applications for trade-related compensation – see explanation above. Furthermore, we follow the existing literature and control for a respondent's age measured in years, her gender and whether she is unemployed.

Table 4 shows the results of three logistic regression models where the dependent variable is whether the respondent in question agrees with the statement that economic openness is a good thing for the US. Model 1 includes the import competition measure that is based on real trade flows whereas model 2 includes the import competition measure that is based on the industry-level application data. Since both measures are not significantly related to individual level trade attitudes model 3 shows a specification without any import competition measure. This implies that our findings do not offer much support for the sector-based model of trade, a result that is in line with most previous research on this topic (Mayda and Rodrik 2005; Scheve and Slaughter 2001; Spilker, Schaffer, and Bernauer 2012). In contrast, the factor-based model of trade receives more support. In all models, better-educated respondents are more likely to see trade as something positive, which is in line with the factor-based model prediction that skilled individuals in developed countries should gain from trade. While a person's income has a positive sign in all models, indicating that capital owners are more favorable towards trade, the variable only reaches standard significance levels in model 3.

Table 4 about here



While these results seem to suggest that a person's skill level seems to be more decisive for her trade attitudes than her sectoral employment, we do not know based on this type of analysis why this is the case. Hence in the next step of our analysis we investigate how people react to information telling them whether their country or they themselves (or both) profit or lose from trade openness. Figure 2 illustrates the results based on the experiment, in which globalization losers and winners are determined based on their educational level, and figure 3 illustrates the results based on the experiment, in which globalization losers and winners are determined based on their sectoral employment. The figures show for all treatments the mean difference between this group and the control group, which did not receive any kind of information, as well as the 95 percent confidence interval. Negative differences imply that the group's mean is more negative in its evaluation of trade openness than the control group. The left panel in each figure shows the results based on the question of whether the respondent considers trade to be good for him- or herself and the right panel shows the results based on the question of whether the respondent considers trade to be good for the US.

Figures 2 and 3 about here

The results of the factor-based experiment (figure 2) clearly show that whereas individuals do not seem to react to country-level information (i.e. they do not seem to be motivated by socio-tropic benefits/costs of free trade), they react significantly to information telling them how their personal economic situation will look like if trade is to increase. This effect of personal level information seems more pronounced if this information is negative. This is a similar finding to the one seen in Hiscox (2006). Hence globalization losers, if they are reinforced in their belief that they indeed do not profit from trade openness, are significantly more likely to state that trade is not good for themselves as well as their country. This is the case as long as the country-level information is not contradictory. Hence if respondents either do not receive any country information (ego negative group) or if they receive corresponding information (ego negative/socio negative group) are they more likely to see trade openness as something negative. However, if they receive positive information for the country-level, this seems to cancel the negative effect of the information on the personal level. The only group who can be framed to think more positively about trade openness consists of those individuals who received information that they belong to the globalization winners while not receiving any country-level information (ego positive). Interestingly, the effects are more pronounced if we consider the question that asks people to evaluate trade for themselves (left panel) than for

the US (right panel). This would be in line with the interpretation that people seem to find it easier to adapt the information to their personal situation than to the situation of their home country.

Turning to the sector-based experiment, we do not observe this effect of personal-level information. Hence respondents do not seem to react at all if they receive the information that their sector will lose from trade openness, which adds to the above evidence not supportive for the sector-based model of trade. In contrast, we see for both the individual level and the country level question that individuals evaluate trade more negatively if they receive the information the US might suffer from trade openness. In this second experiment, we never observe a significant reaction of individuals to positive information be it on the individual or the country level.

Overall, our results therefore lend more support to a factor-based reasoning on trade than for the sector-based mechanism. In addition, we do not find much evidence for a sociotropic view of trade openness. In the factor-based experiment, individuals never react to country-level information alone and while they sometimes react to country-level information in the sector-based experiment, they do so in a way that differs from the causal mechanism proposed in the existing literature: individuals never seem to reward positive country-level information with higher trade approval rates, as suggested by the previous literature, they tend to react to negative country-level information with lower trade approval rates. These results are bad news for policy makers since their ability to increase support for further trade liberalization by telling citizens that their country will profit from this process seems to be rather limited.

### **Robustness Checks**

As discussed above, a potential criticism against our findings from the factor-based experiment could be that while it is random who receives the personal-level treatment it is not random what kind of information this person receives. We try to counter this criticism by applying an analysis that works similar to a regression discontinuity design. By only looking at those individuals who are in the categories right around the cut-off point for our treatment, we consider those individuals who in principle could have made it in either version of the treatment (ego positive or negative). Hence figure 4 shows the results of our factor-based experiment if we limit the analysis to those respondents who fall in the educational categories right before and after our cut point.<sup>6</sup> As can be seen in figure 4, the results are virtually identical to the results shown in figure 2 with the only exception being that the confidence

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<sup>6</sup> These are all individuals with primary education but no high-school degree (lower threshold) and all individuals with complete secondary education.

intervals are larger due to the lower number of observations. This finding therefore strongly reinforces our above made conclusions.

Figure 4 about here

While the randomization of our treatments guarantees that our results are not affected by other factors, we, of course, rely on a sample that is non-representative of the wider US population. Since it is well known in which respects AMT samples are non-representative of the wider US population (AMT 2012; Berinsky, Huber, and Lenz 2012; Mason and Suri 2012; Ross et al. 2012), we evaluated the different treatment effects conditional on those factors for which our samples are not representative. We further evaluate our results conditional on those factors that might influence whether a person already has a lot of information on trade openness. The idea here is to see whether individuals who potentially already have good knowledge on trade questions might react differently to the provided information than those individuals with less existing knowledge. In particular, we evaluated our results conditional on partisanship, gender, sector of work (for the factor-based experiment), education (for the sector-based experiment), interest in politics, education in economics, and interest in media coverage of the economy. The various figures can be found in the appendix.

## **Conclusion**

In this paper we set out to test which information is important for people to form their trade preference given that trade consequences are hard to evaluate for individuals both on the personal and on the national level. We wanted to better understand which type of information individuals rely upon when forming their attitude towards trade and globalization: Do individuals focus more on ego- or sociotropic benefits/costs of free trade? Do they – and if so how - trade off one against the other? Plus, if individuals indeed focus more on their economic self-interest, do they evaluate their trade preference more in a factor-endowments (H-O) reasoning or given sectoral conflict lines as predicted within the specific sectors (RV) framework? We argue that research so far has not come with clear results because they either neglect the issue of information and the difficulty for individuals to evaluate whether they will personally lose or gain from trade altogether; or, they do not pay attention to problems arising from methodological issues such as predicting one attitude (towards trade) with another. In

our paper we thus substantively add to the literature by explicitly testing whether people differ in their judgement of trade once they have information on themselves or their country winning or losing from trade and increased economic openness in general. Also, we can also test whether information on sectoral gains or losses (RV) or an individual's own factoral endowment (HO) are more important for the formation of trade policy preferences.

Overall, our results lend more support to a factor-based reasoning on trade than for the sector-based mechanism. In addition, we do not find much evidence for a sociotropic view of trade openness. In the factor-based experiment, individuals never react to country-level information alone and while they sometimes react to country-level information in the sector-based experiment, they do so in a way that differs from the causal mechanism proposed in the existing literature: individuals never seem to reward positive country-level information with higher trade approval rates, as suggested by the previous literature, they tend to react to negative country-level information with lower trade approval rates. These results are bad news for policy makers since their ability to increase support for further trade liberalization by telling citizens that their country will profit from this process seems to be rather limited.

While these results are interesting in their own right, they also allow for important conclusions on trade governance more generally and thus for policy advice on how governments can or rather cannot sell trade liberalization to their constituency. Since especially in democracies elected leaders need to ensure public support for their policies, it is important to understand which strategies should work when trying to increase public support for trade governance. In this respect, our results clearly show that telling citizens that further trade liberalization will have benefits for the respective country such as an increase in employment might not be too successful. Rather governments should probably think of strategies to compensate the losers from trade in order to safeguard them from the potential negative effects of trade openness.

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Table 1: Overview of treatments

Sociotropic treatments	Positive	country profits from free-trade due to economic growth and potentially due to less unemployment
	Negative	country loses from trade because it becomes more susceptible to the economic problems of other countries that could have spill-over effects on own country
	Control	International trade has increased over the last years
Egotropic treatments	Positive (factor-endowment model)	highly educated individuals profit from free trade since their job security and their income increase
	Positive (sectoral model)	the specific sector (in which the individual works) profits from free trade, consequences are: jobs not offshored and more revenue
	Negative (factor-endowment model)	individuals with little education lose from free trade since their job security and their income decrease
	Negative (sectoral model)	the specific sector loses from free trade, consequences are: jobs being offshored and less revenue
	Control	No additional information

Table 2: Summary statistics

	Factor-endowment model	Sectoral Model
Gender	Female: 486 Male: 411	Female: 402 Male: 552
Party identification	Democrat: 367 Republican: 166 Independent: 274	Democrat: 400 Republican: 136 Independent: 292
Mean age	34	31
Education	High: 428 Middle: 338 Low: 151	High: 464 Middle: 357 Low: 119
Income	High: 278 Middle: 382 Low: 198	High: 317 Middle: 412 Low: 162
Import-competing sector	299	186
Trade good for country	Yes: 497 No: 312	Yes: 622 No: 262
Trade good for oneself	Yes: 379 No: 311	Yes: 498 No: 257

Table 3: Number of respondents per treatment

Sociotropic treatment	Egotropic treatment	Factor-endowment model	Sectoral Model
Positive	Positive	155	173
	Negative	47	32
	Control	99	117
Negative	Positive	166	175
	Negative	39	40
	Control	101	95
Control	Positive	156	174
	Negative	54	38
	Control	97	104



Table 4: Test of factor-endowment and sectoral model of trade (dependent variable: trade openness good for the US)

	(1)	(2)	(3)
age	-0.03** (0.015)	-0.03** (0.015)	-0.03** (0.015)
income	0.08 (0.062)	0.08 (0.061)	0.09* (0.056)
Import competition: trade flows	-0.08 (0.414)		
Import competition: compensation		-0.12 (0.430)	
gender	0.31 (0.365)	0.32 (0.367)	0.39 (0.345)
Education: high	1.46*** (0.566)	1.44** (0.581)	1.52*** (0.539)
Education: middle	1.20** (0.554)	1.18** (0.564)	1.14** (0.522)
Constant	-0.23 (1.001)	-0.22 (1.001)	-0.57 (0.946)
Observations	166	166	181
Log Likelihood	-94.43	-94.42	-104.83

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

Figure 1: Experimental Design

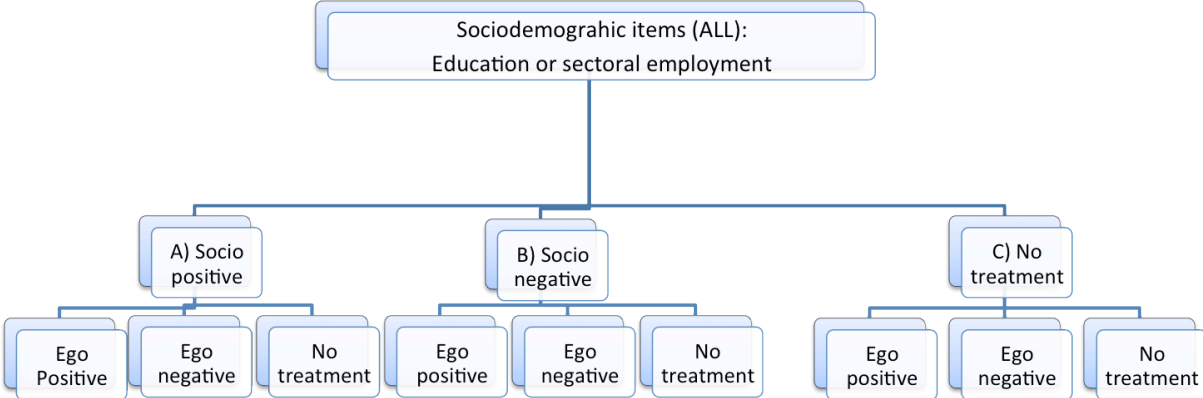


Figure 2: Results for experiment with factor-based globalization winners/losers.

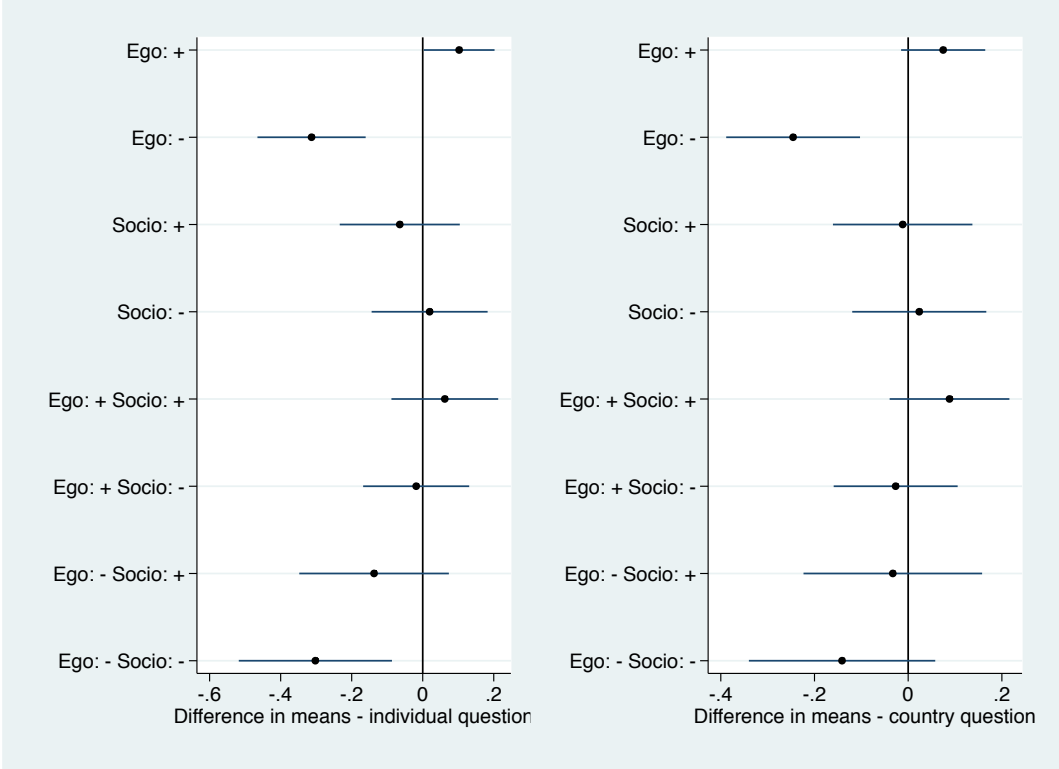


Figure shows for all treatment groups the mean difference to the control group (no information) and the 95 percent confidence interval. Negative differences imply that the group’s mean is more negative in its evaluation of trade openness than the control group.

Figure 3: Results for experiment with sector-based globalization winners/losers

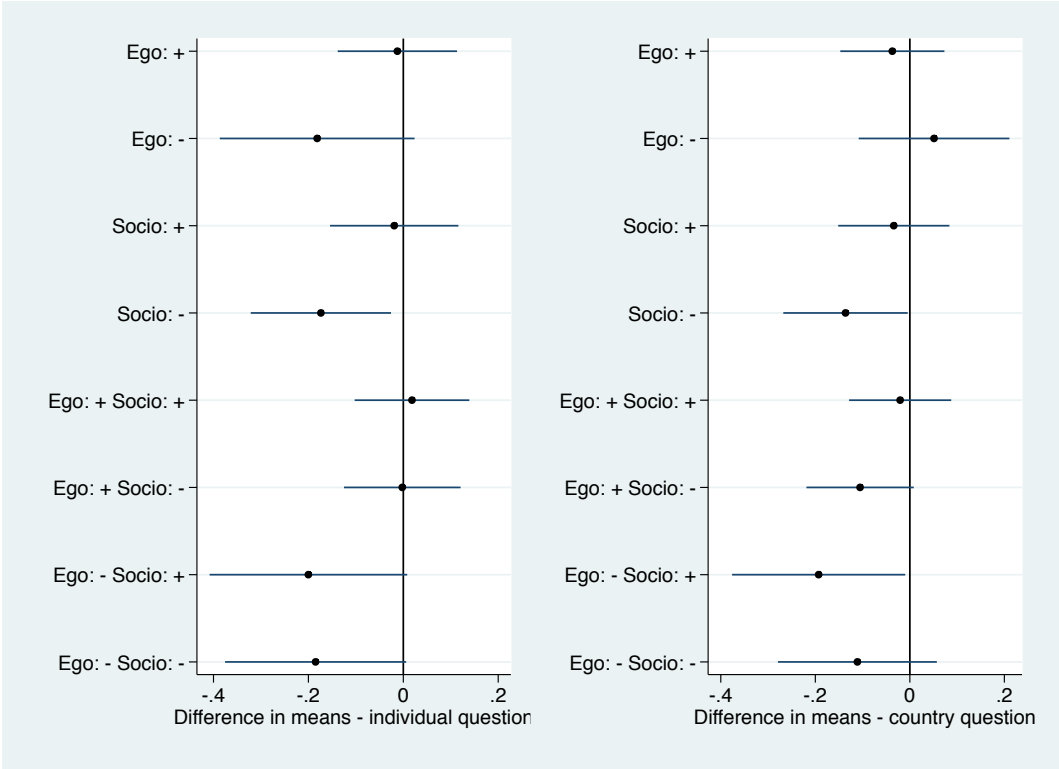


Figure shows for all treatment groups the mean difference to the control group (no information) and the 95 percent confidence interval. Negative differences imply that the group’s mean is more negative in its evaluation of trade openness than the control group.

Figure 4: Results for experiment with factor-based globalization winners/losers based on only those categories of education that are close to the cut-off point for experimental treatment

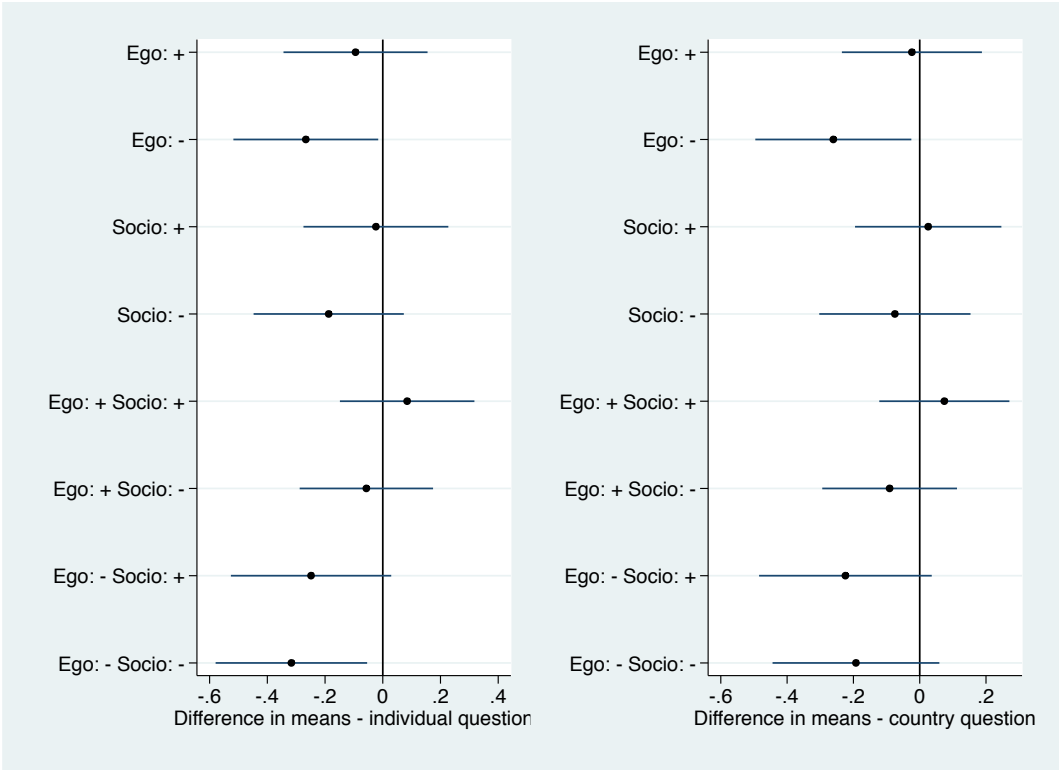


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