Does Compensating the Losers Increase Support for Trade?
An Experimental Test of the Embedded Liberalism Thesis

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Abstract: The political economy of trade literature argues that compensating those who lose from trade is an important component of maintaining public support for free trade, a linkage known as the compensation hypothesis or embedded liberalism thesis. Previous research has found support for many elements of the causal chain underlying embedded liberalism: increased exposure to risk increases opposition to trade and those harmed by trade support compensation policies. However, there has been little research on the most crucial element of the causal chain—compensation policies lead to increased support for trade—and what research does exist only provides indirect evidence of the effect. This paper provides a direct test of the compensation hypothesis using a survey-based experiment conducted in the U.S. The experiment exposes half of the respondents to information about Trade Adjustment Assistance, the primary U.S. program that compensates those harmed by trade by providing expanded unemployment insurance and job retraining. If the compensation hypothesis is correct, then the experimental group that receives this information should be more supportive of free trade as they will be more likely to believe that they will receive compensation if they are harmed. The paper will further investigate whether this effect is uniform or depends on whether the individual is exposed to the risks of trade. The paper, thus, provides a crucial test of the embedded liberalism thesis as well as an estimate of just how effective compensation policies can be in increasing support for trade.

It is widely accepted that trade has significant distributional consequences within a country. While economic theory suggests that free trade is beneficial for a country as a whole, it will hurt many individuals who face the risk of job or income loss because of increased imports. In the United States and other advanced industrial countries, theory tends to focus on low-skilled workers as the most likely to be harmed by free trade. Because these costs are concentrated while the gains of free trade—namely lower consumer prices—are dispersed and, thus, opponents to trade are better able to overcome the collective action problem, the typical result of the trade policy process has tended to be some level of protectionism, as has been argued by the endogenous tariff literature.

So how has the world economy steadily moved closer towards free trade since the end of World War II? One popular explanation is the Embedded Liberalism Thesis, first offered by Ruggie (1982),[1] which suggests that if policymakers compensate individuals for the potential losses due to trade, they can demobilize opponents to trade. Thus, policymakers should embed liberal trade policies within a larger welfare state: by linking free trade to expanded unemployment or job retraining programs, those who fear that trade will lead to job loss will have some confidence that they will be taken care of in this eventuality.

There have been many academic studies of the Embedded Liberalism Thesis, but most have been at the aggregate level. Typically, they have sought a link between government size and economic openness with inconsistent results (Rodrik 1997, Rodrik 1998, Adsera and Boix 2002, Swank 2002, Iversen and Cusack 2000). Recently, some

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[1] See also Ruggie (2008) for a recent restatement of the embedded liberalism thesis and a number of empirical tests and extensions. See also Cameron (1978) for the first suggestion of a link between economic openness and welfare state spending which has become known in the political economy literatures as "the compensation hypothesis."

research has been conducted at the individual level: Hays, Ehrlich, and Peinhardt (2005), for instance, find that individuals who will receive higher levels of unemployment compensation are less likely to oppose trade. Mayda, O'Rourke and Sinnott (2007) similarly argue that greater levels of government spending reduce anti-trade attitudes. While this work suggests that there is a link between compensatory programs and trade policy preferences, it only demonstrates correlation rather than causation. Although reverse causation is unlikely in this case, it is quite possible that some other factor influences both expected level of compensation and trade policy preferences. In particular, because compensation varies so much from country to country, and because certain groups of countries with similar political cultures tend to have similar levels of compensation, as discussed in more detail below, it is possible that country- or region-level effects are at least partially driving the results. Previous work also examines broad measures of welfare spending and not the specific trade-related compensation measures that are common in some countries, leaving unclear how effective these targeted policies are in increasing support for free trade.

This article solves both of these problems by conducting an experimental test of the Embedded Liberalism Thesis to determine whether compensatory mechanisms can increase support for trade, both amongst those likely to lose from trade and more generally. This U.S.-survey-based experiment will provide a clearer test of the causal mechanisms underlying the Embedded Liberalism Thesis and will examine the effect of specific, trade-related compensation mechanisms, namely Trade Adjustment Assistance (TAA), the major federal program in the United States that compensates those harmed by trade. The rest of the article will be organized as follows: after briefly reviewing the

Embedded Liberalism Thesis and compensatory hypothesis literatures and detailing the

specific compensation policies in the United States, the second section of the article

provides hypotheses drawn from these literatures about the effects of compensation on

individual-level trade policy preferences. The third section then describes the survey-

based experiment designed to test these hypotheses and explains the methods used to

conduct this test. The fourth section presents the results of the test. The final section

concludes by discussing both the broader academic and the policy implications of these

results.

Embedded Liberalism and Compensation Policies

Cameron (1978) investigates the relationship between economic exposure to

international markets and the role of government. Cameron's article first demonstrates

the link between government spending and trade. This finding may seem counter-

intuitive given the common conception that increased openness decreases the efficiency

of government intervention (Rodrik 1997). The increase in government spending is

commonly attributed with mitigating the risk associated with the distributional effects of

trade liberalization (Cameron 1978; Rodrik 1998). Rodrik (1998) contends that

"societies seem to demand (and receive) an expanded government role as the price for

accepting larger doses of external risks (999)."[2] Following the compensation hypothesis,

government spending provides insurance for likely losers of liberal policies, reducing the

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[2] Cameron (1978) argues that open economies have higher industrial concentration which leads to stronger unionization and labor confederations, more effective collective bargaining, and more organized labor parties. This stronger organization of labor leads to more demands for compensation. This compensation, however, is to mitigate the risk of trade exposure.

adjustment and social costs created by increased exposure to the international

marketplace.

Ruggie (1982) further expands upon the relationship between government size

and trade by proposing the Embedded Liberalism Thesis. Ruggie argues that the

expansion of free trade following World War II can largely be attributed to governments'

commitment to compensate those harmed by trade liberalization. Ruggie notes that prior

to World War II many governments pursued liberal policies with little regard to the

distributional consequences of globalization. Such policies inevitably increased social

instability and generated support for protectionist governments. Enacting liberal social

policies to defray the cost of trade liberalization provides governments with the capability

to pursue liberal trade while maintaining public support. Following World War II

governments began to embed liberal trade policies within welfare policies that provided a

safety net and compensation for those harmed by trade liberalization.

The majority of empirical research examining the compensation hypothesis has

compared levels of government spending or consumption to trade exposure. Cross

national studies examining the link between government spending and trade have

produced mixed empirical results. Hicks and Swank (1992), Rodrik (1997, 1998),

Adsera and Boix (2002), and Swank (2002) have all found that open economies have

larger governments. On the other hand, several studies have challenged the finding that

increased trade is associated with government spending.[3] Garrett and Mitchell (2001),

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3 Iversen and Cusack (2000) contend that advancements in technology have created structural
transformations in national labor markets. Changes in consumption patterns, the saturation of the market
with manufactured and agricultural products, and increasing productivity have generated the majority of
employment risk. These transformations, not trade, have led to public demands for compensation. Hays,
Ehrlich, and Peinhardt (2005) provide evidence that both deindustrialization and exposure from trade have
had an effect on government spending and unemployment. Furthermore, Rudra (2002) argues that the link
between globalization and welfare spending only exists in the developed world.

for example, argue that government spending is driven by the structure of the economy and history of unionization in individual countries, not to compensate would be losers of trade. The authors contend that the relationship between trade and spending is sensitive to time and country effects.

Traditionally, less attention has been given to the causal mechanisms purported to link spending with openness.[4] A growing number of individual level studies have begun to explore the causal connection between government size and trade as predicted by the embedded liberalism thesis. These studies have focused on three main links in the causal chain, namely the relationship between risk and globalization, the malleability of trade attitudes, and the supply and demand for compensation. If the Embedded Liberalism Thesis provides an accurate account of the post World War II compromise between governments and workers, we would expect that increased economic risks and uncertainty leads some members of society to oppose liberal policies; losers of trade demand compensation and governments supply compensation to gain support for liberal policies; and compensation mitigates fears created by open trade and increases support for globalization.

The relationship between exposure to employment risk and trade attitude has received much of the individual-level examination. The predictions of the Ricardo-Viner and Stolper-Samuelson models have been tested in a number of studies often finding that either factor endowment or employment sector is a predictor of trade opinion (Scheve and Slaughter 2001, O'Rourke and Sinnott 2002, Hays, Ehrlich and Peinhardt 2005,

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[4] See Walter (2010) for the most in-depth examination of the causal mechanisms of the compensation hypothesis.

Mayda and Rodrik 2005).[5] More generally, Ehrlich et al (2010) show that concerns of employment loss lead to lower support for free trade. Likewise, risk-averse individuals have been shown to be more likely to oppose free trade (Mayda, O'Rourke, and Sinnott 2007 and Ehrlich and Maestas 2010). Exposure to employment risk (whether objective or perceived) and risk aversion both suggests that the increased risk associated with globalization may lead some individuals to oppose liberal policies.[6]

On the demand side of compensation, Ehrlich (2010) shows that individuals likely to experience loss as a result of trade are more likely to support compensation policies while those who are likely to gain from trade are actually more likely to oppose compensation. Rickard (2008) examines the supply of compensation and confirms that political elites provide compensation as a means for buying support for liberal trade policies. By examining roll call votes, Rickard shows that legislators in the U.S. who support free trade likewise support compensation programs such as the TAA. Elected official seem to utilize spending to increase approval of liberal policies. This provides evidence that trade losers demand and governments in fact supply compensation to gain support for free trade.

Following the predictions of the Embedded Liberalism Thesis, this compensation should mitigate fears created by increased openness and enhance public opinion towards free trade. Hays, Ehrlich, and Peinhardt (2005) show that individuals who are expected to receive more compensation express higher support for free trade even if they are at risk of losing their jobs due to trade. Similarly, Scheve and Slaughter (2004) find that government spending on labor markets decreases opposition to liberal trade policies.

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[5] See Mansfield and Mutz (2009) for a dissenting view of these findings.
[6] Kim (2007) and Down (2007) both question the relationship between openness and volatility.

Mayda, O'Rourke, and Sinnott (2007) further show that the effect of risk is mitigated by government spending. These findings suggest that the causal story in the Embedded Liberalism Thesis is correct. Opinions concerning trade are malleable and affected by risk and government policies that reduce risk exposure.

These studies, however, only demonstrate a correlation between welfare policies and trade attitudes; they do not test the micro foundations of the Embedded Liberalism Thesis. Exposure to trade and compensation tends to vary more across countries (or groups of countries) than over time within specific countries. Cameron (1978) notes that in the early 20th century production in small European countries was concentrated in a few specific sectors. This concentration led to relatively organized and powerful unions. Unionization in turn affected the political process by encouraging the growth of pro-labor political parties who in turn favored the expansion of the welfare state. Historical factors affecting political ideology, exposure to trade, and industrial concentration may be driving macro level results. To address this shortcoming, this study provides an experimental test of the micro foundations of the embedded liberalism thesis and attempts to answer the question: does increased compensation lead to greater general support for free trade?

To determine the effect of compensation on trade attitudes, this study utilizes an experimental design that tests whether or not knowledge of Trade Adjustment Assistance (TAA) increases general support for free trade. The TAA is the primary government program for assisting individuals experiencing employment loss as a result of trade. The TAA was enacted in 1962 as part of the Trade Expansion Act. While the specifications of TAA have expanded, declined, and evolved over time, TAA generally provides cash

assistance, job retraining, and allowances for job relocation to individuals who have lost

their job as a result of globalization (Drezner 2006).

Previous studies have examined aggregate welfare spending or total government

consumption to estimate compensation levels.[7] This article focuses exclusively on TAA

for several reasons. First, TAA provides compensation to trade losers in an attempt to

minimize their losses as a result of globalization. This is precisely the type of

compensation policy predicted by the Embedded Liberalism Thesis. Secondly, while

general welfare spending and government consumption may provide compensation to

those displaced by trade, these policies are not necessarily thought of as compensation for

trade displacement. The experimental design of the study requires that individuals

associate the compensation policy with globalization. Thirdly, focusing on TAA allows

us to consider the effectiveness of such specific compensation programs. Examining

only TAA, however, diminishes the amount of compensation a trade loser is likely to

receive, making the experiment a conservative test of embedded liberalism (Rickard

2008).

Embedded Liberalism and Individual-Level Trade Policy Preferences

This section derives hypotheses concerning whose trade attitudes will be affected

by compensation. If Ruggie's argument provides an accurate account, compensation

programs successfully encourage support for free trade. But whose trade attitudes should

be affected by these programs?

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[7] Cao et al (2007) argue that some types of government prefer to provide compensation indirectly through industrial subsidies.

Compensation programs are intended to provide insurance to those individuals who are uncomfortable with trade which, in turn, should increase support for trade. This suggests that would-be winners of open trade should tolerate compensation programs to ensure liberal policies, but it is not necessary that such programs alter their policy preferences as they should already support these policies. On the other hand, since compensation programs should limit the extent of the losses from trade to those who expect to be hurt by these policies, these programs should ameliorate the opposition to trade (and, thus, increase the support for trade) amongst those who expect to be hurt by trade.

Who will expect to be hurt by trade? The theoretical distributional effects of trade are well known. While open trade creates aggregate gains, the benefits and risks of trade are distributed unevenly in society. The Stolper-Samuelson theory is a commonly used economic model for predicting the likely losers of globalization. The Stolper-Samuelson model assumes relative mobility between industries and thus emphasizes the importance of factors of production, such as skill and capital. The Stolper-Samuelson model is grounded in the Heckschler-Ohlin theorem, which states that countries export goods that make use of its abundant factor and import goods that make intensive use of its scarce factor. As a result, individuals who possess relatively scarce factors of production, such as unskilled workers in advanced industrialized nations, face expected increases in competition and decreases in income and employment security as a result of barrier free trade while individuals who possess relatively abundant factors of production, such as high skilled workers and holders of capital, should see increases in income and employment security due to an expansion in opportunities to export products made with

their factor. The literature typically measures skill and capital using demographic proxies such as income and education, although these measures are not without controversy, as discussed below. As a result, we would predict those with high levels of income and education to expect to benefit from trade and those with low levels of income and education to expect to be hurt by trade. Thus, the basic hypothesis derived from embedded liberalism about the effect of compensation on trade policy preferences is as follows:

Hypothesis 1: Compensation should increase support for trade amongst low skilled workers while having no effect on preferences amongst high-skilled workers and holders of capital.

Recent research on trade policy preferences, though, suggests that these effects might be more complicated. First, there is reason to believe that those who expect to win from trade might actually be more opposed to trade if they are aware of compensation programs. If embedded liberalism is correct, then even the trade winners should support compensation as this compensation is necessary for them to continue to enjoy the benefits of international trade. However, Ehrlich (2010), examining public opinion in the U.S. on compensation programs, finds that those who expect to gain from trade actually oppose compensation, relative to those who do not expect to be affected by trade at all (and those who expect to lose from trade are, as expected, supportive of compensation.) Similarly, Rickard (2008), examining legislative voting on compensation, finds that representative from districts that should benefit from trade vote against compensation. Both authors suggest that this opposition to compensation is caused by the fact that those who expect to gain only a little from trade may believe that these gains are more than offset by the

costs of compensation programs[8] If true, then only those who expect to gain a lot from trade may support compensation. If this is true, then knowledge of the existence of compensation programs may decrease support for trade amongst some trade winners as they may not be willing to exchange the benefits of free trade for the costs of compensation. Thus, depending on the relative number of those who expect to gain a little and those who expect to gain a lot, this research suggests the following hypothesis:

Hypothesis 2: Compensation should increase support for trade amongst low skilled workers while decreasing support for trade amongst high-skilled workers and holders of capital.

Second, previous experimental work suggests possible mechanisms whereby the expected winners from trade might be even more supportive of trade if they are aware of compensation mechanisms. For instance, Lu, Scheve, and Slaughter (2010) find that many voters tend to be altruistic in their trade policy preferences: if they believe that trade will harm those who make less than they do, they are more likely to oppose trade even if they themselves will benefit from trade. Knowing that those harmed will be compensated should alleviate the concerns of these altruists. Similar, Hearn (2010) argues that trade policy preferences are influenced by reluctance to harm others. Individuals have a status quo bias and, thus, avoid actions that create a reduction from the status quo for others. Since trade will harm some, individuals will be reluctant to support free trade if they focus on the "fairness" element of open trade. Given that compensation will reduce the distributional effects of open trade, knowing about compensation should

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[8] This does not completely explain why trade winners are more opposed to compensation than those who expect no effect from trade, as the latter would pay the costs of compensation without any benefit whatsoever.

increase support for trade amongst "fair" traders. From these considerations, we can

derive the following hypothesis:

Hypothesis 3: Compensation should unconditionally increase support for trade.

An Experimental Test of Embedded Liberalism

This paper tests the above hypotheses with a survey-based experiment conducted

on 1000 respondents in the United States in 2008.[9] The experiment provides information

on the Trade Adjustment Assistance (TAA) program to half of the respondents and

provides no such information to the other half of the respondents. Respondents are

randomly selected into each treatment with .5 probability. Specifically, the experimental

group (those provided the information) receives a question that describes the TAA

program and asks whether they favor expanding the program, cutting back the program,

or keeping it the same. The experimental group is then asked their opinion on whether the

government should limit trade to protect jobs. The control group (those not provided the

information) is only asked the question on limiting trade. The exact wordings of the

questions are as follows:

> 1. *Trade Adjustment Assistance is a federal government program which provides*
> *expanded unemployment insurance and job retraining programs to workers who*
> *lose their jobs as a result of increased imports or from outsourcing. The program*
> *costs about one billion dollars. Do you think the program should be expanded,*
> *cut back, or kept the same?*

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[9] The survey data were collected as part of the 2008 Cooperative Congressional Elections Survey (CCES).
The survey was administered via internet to a randomly selected 1000 person sub-sample from the 31,000
panel respondents who participated in the CCES. Details of the study can be found at
http://web.mit.edu/polisci/portl/cces/index.html.

2. *How much do you agree or disagree with each of the following statements?*
The United States should limit the imports of foreign products in order to protect
the U.S. national economy.

The treatment question is designed to inform the respondents that compensation in the

form of unemployment insurance and job retraining exists for those who lose their job

because of imports and that this program is fairly well-funded. The second question is a

standard measure in the public opinion on trade literature used to gauge support for free

trade or protection.[10] Responses range from *agree strongly* to *disagree strongly*. The

variable *Trade Support* is created with higher scores indicating higher support for trade

and lower scores indicating increased support for protection.

How does this experiment test the above hypotheses? The design assumes that

not all respondents are previously aware that a compensation program exists in the

United States. The TAA question, thus, informs some portion of the respondents about

this program. If the experiment is properly randomized, then a higher percentage of the

experimental group than the control group will be aware of compensation. If the

experimental group is more supportive of free trade than the control group, then we can

conclude that it is knowledge of TAA that causes this difference as this is the only

dimension on which the experimental and control groups differ. Thus, what this

experimental design tests is the hypothesis that knowledge about compensation and not

the actual receipt of compensation affects trade policy opinion.[11] However, strictly

speaking, embedded liberalism suggests that it is the expectation of the receipt of

compensation if one were to lose one's job that will increase support of trade. Further,

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[10] This question mirrors the measures used in a multitudes of recent trade attitudes studies such as Mayda
and Rodrik (2005), O'Rourke and Sinnott (2002), Hays, Ehrlich and Peinhardt (2005), Ehrlich and Maestas
(2010).
[11] This is not to say that receipt does not affect opinion, just that this hypothesis is not tested here.

knowing that a compensation program exists should increase the probability that one will expect to receive such compensation. As a result, testing whether knowledge of compensation programs increases support for free trade is a good test for the causal underpinnings of the embedded liberalism thesis.

To test the above hypotheses, we need information concerning who is likely to win from trade and who is likely to lose. Following the Stolper-Samuelson individuals possessing scarce factors are considered to face greater employment risk while individuals who possess abundant factors are expected to derive benefits from trade. Because the abundant factors in the US are often considered to be capital and skill, individuals lacking capital and skill should expect losses from trade while those possessing capital and skill should expect gains. Following previous literature, family income can be considered a proxy for capital endowment, while education and income can be considered proxies for skill.

Respondents are asked which of 14 categories their income falls. Categories range from 1, less than $10,000, to 14, more than $150,000. The variable *Income* is created ranging from 1 to 14 with higher numbers indicating a higher family income. Most of the above hypotheses, though, suggest a non-linear effect of income; thus, we construct two sets of dummy variables. *Low Income 2* is a dummy variable for those with below-average income, while *Low Income* 3 is a dummy variable for all those with income one standard-deviation below the median (less than $30,000) and *High Income 3* is a dummy variable for all those with incomes one standard deviation above the median ($100,000 or more) To measure education, *College Graduate* is a dummy variable equal to 1 for individuals with a 4 year college degree or graduate degree and 0 for all others.

The dependent variable *Trade Support* is an ordered variable with 5 possible

responses ranging from strongly support trade to strongly oppose trade. To consider

variation in the strengths of opinions, an ordered probit is used.[12]   The following model

is estimated to examine the main hypothesis:

Trade Support $= \beta_0 + \beta_1$ TAA (Treatment) $+ \beta_2$ Exposure $+ \beta_3$TAA*Exposure $+$
B_4Age $+ \beta_5$Female$+ \beta_6$Married $+ \beta_7$Conservative $+ \beta_8$UE $+ \beta_9$Risk Aversion $+ \varepsilon$

Because education and income are highly collinear (and because income and

education are both often used as proxies for skill), the results below always include only

one of these variables as a measure of risk *Exposure*, though the basic results are the

same if both are included. A number of control variables suggested by the existing

literature are also included.[13] Following Scheve and Slaughter (2001), Mayda and

Rodrik (2005), Hay, Ehrlich, and Peinhardt (2005), and other empirical studies, the

following controls are included: *Female* is a dummy variable equal to 1 if respondents are

female, as women have consistently been found to be more protectionist; *Age* equals the

age in years of the respondents, as older respondents tend to be more protectionist;

Married is equal to 1 for married respondents as they tend to be more protectionist;[14]

Unemployed is equal to 1 if the respondent is unemployed, as unemployed workers tend

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[12] Non constant variance in the error term presents a problem for discrete choice models. Heterogeneity in
trade opinion may arise as a result of different levels of information and knowledge of economics between
college grads and non college grads, variations in risk exposure, purchasing power, socialization or any
number of factors directly related to risk orientation, education level, income, and job security (Keele and
Park 2004). To account for this, all models were also conducted using a heterogeneous choice model.
These models produced statistically and substantively identical results and are not reported.
[13] Because the experimental treatment variable is interacted with either income or education in almost all of
the models below, we need to include the controls or risk suffering from omitted variable bias. If the
treatment variable were not interacted, then controls would be unnecessary as (assuming the samples were
properly randomized) then omitted variable bias would not be a concern as the omitted variables would be
uncorrelated with the treatment. If we expect the omitted variables to be correlated with education or
income, though, then we must include them in the interacted models.
[14] The theoretical reasons for these effects are unclear, but they are consistent. Further, each of these
demographic variables is likely correlated with income or education.

to support protection given that trade may be a contributing factor to their unemployment. Finally, *Risk Averse* is a 7-point scale based on the measure discussed in Ehrlich and Maestas (2010). It measures how averse to risk the respondent is: more risk-averse individuals are expected to be more opposed to trade as trade opens workers up to more risk.[15]

Results

The results of the analysis are presented in Table 1. Model 1 tests the hypothesis that compensation increases support for trade among both winners and losers, i.e. Hypothesis 3. Only the treatment variable is included in this model, as it should be uncorrelated with all of the control variables: if knowledge of compensation increases support unconditionally, we would expect this variable to be positive and significant. We fail to find support for this hypothesis; although the treatment has a positive affect on trade attitudes as predicted, this effect is not statistically significant. We therefore cannot conclude that the treatment has a positive affect on trade attitudes in general. However, this does not mean that compensation has no effect on trade policy preferences, just that this effect is likely to be conditional, as suggested in Hypotheses 1 and 2.

The first step in testing these hypotheses is to interact the treatment variable with the full income scale, as is done in Model 2. In this and all subsequent models, we include the control variables as discussed above. Higher income is associated with greater support for trade. Furthermore, the treatment has a significant negative affect on

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[15] Ehrlich and Maestas (2010) suggest that this effect should be limited to only those who are averse to risk *and* exposed to this risk due to low levels of education or income.

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support for free trade. As income decreases (increases) exposure to the treatment leads to

higher (lower) levels of support for open trade. The results from Model 2 indicate that

the effect of compensation is conditional upon income.

The negative and significant result on the interaction term in Model 2 could

results from a number of different possibilities. Low income respondents might be more

supportive of trade if they know about compensation; high income respondents might be

less supportive of trade; or both. In other words, Model 2 is unable to differentiate

between Hypotheses 1 and 2. To examine the possible non-linear effects, Model 3

replaces the income variable with the dichotomous measure of income. It is found that

low-income individuals are less likely to support trade. As predicted by both Hypotheses

1 and 2, exposure to information about TAA significantly increases support for trade

among low-income respondents. The TAA treatment, however, has no affect among

high-income earners. While the coefficient for TAA is negative as predicted by Model 2,

it fails to reach statistical significance. These findings lend support to Hypothesis 1.

Compensation increases support for trade among low-income earners but has no effect on

high-income respondents.

Model 4 replaces the income variable with education variable.[16] Here, we find

that more educated respondents are more likely to support trade but that the treatment has

no effect, i.e. knowledge of compensation does not change trade policy preferences either

for those who are college graduates or those who are not. This is a consistent finding:

regardless of specification, the treatment has no effect when interacted with education

while the results for income are very robust. What explains why one measure of risk

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[16] Given that the standard in the literature is to use a dummy variable for college graduation, we do not
replicate the analysis in Model 2 with the full education scale. The results are similar to the results here,
though.

exposure provides the expected results and the other does not? Possibly, education is also measuring pre-existing knowledge of compensation, i.e. more educated respondents are more likely to already know about TAA or similar programs. As a result, the treatment does not increase knowledge and, therefore, should not have an effect. This is an admittedly tentative and post-hoc explanation that future research, perhaps examining the influence of hypothetical compensation programs, should explore.

To explore the possibility raised by Ehrlich (2010) and Rickard (2008) that trade winners might be particularly hostile to compensation, Model 5 substitutes in the trichotomous income variable. This model makes the arbitrary assumption that while low-income workers will be hurt by trade and high-income workers will be helped by trade, medium-income workers will expect no effect from trade. Obviously, this is an ad hoc measurement not well-grounded in economic theory, but it is plausible that if income is measuring capital and skill, that more income will be associated with even greater benefits to trade and that, at the least, medium-income respondents will expect only slight benefits to trade. However, the results from Model 5 should be viewed as suggestive only. High income is not found to affect general support for free trade. The interaction between high income and the treatment, however, is significant and negative. This indicates that compensation reduces support for trade among likely trade winners and further collaborates the findings of Ehrlich (2010) and Rickard (2008). As expected, low income leads to decreased support for open trade but this opposition is reduced by compensation, the coefficient on the interaction between low income and TAA is positive and statistically significant. The treatment has a positive effect on medium-income earners, but this effect fails to reach statistical significance. These findings suggest that

while compensation can demobilize opposition to trade among probable losers of liberal policies, compensation programs are also capable of mobilizing opposition to trade among likely winners.

To consider the substantive effects of the treatment predicted probabilities are calculated with the estimates from Model 2 using Clarify (King et al 2001). Table 2 provides the predicted probability of a low-income individual supporting trade when all other variables are set to their median values. As shown in the table, an average low-income individual in the control group has a .36 predicted probability of strongly opposing trade. Exposure to the treatment reduces this prediction by about .1. Low-income individuals in the treatment group have only a .27 predicted probability of strongly opposing trade. Knowledge of compensation has a large and statistically significant substantive effect on low-income earners.

Table 3, again using simulation, examines the substantive effect of the treatment on high-income individuals. As shown in the table, high-income earners in the control group have a .22 predicted probability of strongly opposing trade. Exposure to the treatment increases this prediction by about .04. High-income individuals in the treatment group have a .27 predicted probability of strongly opposing trade. This difference, however, fails to reach statistical significance. Knowledge of compensation has no substantively meaningful affect on the trade attitudes of individuals with high incomes.

Conclusion

This article has endeavored to test the underlying causal mechanism of the Embedded Liberalism Thesis by answering the question: does compensation increase support for free trade? We find that in certain individuals, those with low incomes, knowledge of TAA leads to higher support for free trade. The results indicate, however, that the effect of compensation may not be as large as supporters of embedded liberalism hoped. TAA is also associated with lowering support for trade among individuals with high incomes. Studies have shown that some individuals have a preference for efficiency; some high income earners may not expect many gains from increased globalization and believe such redistribution policies are inefficient or costly. Policy makers may face a trade-off between gaining support from some while alienating others.

Policy implications of this study should be considered with caution. Although we find support for the Embedded Liberalism Thesis, compensation programs may actually have a much larger effect on trade attitudes. First, we only consider TAA, many other compensation policies exist. Second the design of the experiment assumes that some individuals were previously unaware that compensation for displacement from globalization exists. This is specifically problematic if you consider, those who are most likely to be affected by such knowledge (individuals at risk of employment loss) also have a greater incentive to learn about such policies, are perhaps more likely to discuss such policies within their networks, and are more likely to have been informed of such policies by employers. Considering this, the strength of the treatment may in fact be quite weak. Further examination of the effectiveness of both targeted compensation programs such as the TAA and general welfare policy to manage trade opinions is warranted. These results suggest that targeted programs do in fact help garner support for

free trade among likely trade losers, but this effect may be off-set by increased opposition to trade among likely trade winners.

In conclusion, the findings presented in this article indicate that there is support for the causal mechanisms of the Embedded Liberalism Thesis. Risk and risk mitigation play important roles in the formation and management of trade attitudes. Whether or not compensation can be credited with creating the move towards free trade following World War II, however, remains an interesting question. This article demonstrates that compensation can increase support for liberal policies among likely losers. How effective such policies are at managing public opinion concerning trade remains a question for future research.

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Table 1: Effect of TAA Treatment on Support for Free Trade.

	Model 1	Model 2	Model 3	Model 4	Model 5
TAA	.026	.797***	-.150	.048	.096
	(.075)	(.225)	(.112)	(.094)	(.113)
Income		.075***	_	_	_
		(.018)			
TAA X Income		-.086***	_	_	_
		(.025)			
Low Income(2)			-428***	_	_
			(.117)		
TAA X Low Income(2)			.428***	_	_
			(.162)		
College Grad.			_	.485	_
				(.118)***	
TAA X Coll. Grad.			_	-.031	_
				(.167)	
Control Variables					
Age		.001	.002	.001	.001
		(.003)	(.003)	(.003)	(.003)
Female		-.444***	-.451***	-.451***	-.457***
		(.085)	(.086)	(.082)	(.086)
Married		-.116	-.113	-.033	-.087
		(.091)	(.090)	(.082)	(.089)
Conservative		.001	.001	.002*	.001
		(.002)	(.002)	(.001)	(.002)
Unemployed		-.086	-.104	-.110	-.097
		(.092)	(.091)	(.087)	(.092)
Risk Aversion		-.037	-.045*	-.033	-.039
		(.025)	(.025)	(.024)	(.025)
Trichotomous Income					
High Income(3)					.200
					(.130)
TAA X High Income(3)					-.325*
					(.184)
Low Income(3)					-.354**
					(.156)
TAA X Low Income(3)					.366*
					(.222)
Observations	791	694	694	744	694
Psuedo-R2	.000	.033	.031	.039	.030
Chi-Squared	.12	68.33	63.23	82.82	61.42

Notes: ***p<.01; **p<.05; *p<.1

Standard Errors in Parenthesis; Cut-point estimates not reported

Dependent Variable = Support for Free Trade

Table 2: Predicted Probability of Supporting Free Trade

Probability of Supporting Trade
(Low Income)

Trade Support	Control	Treatment	Difference
Strongly Oppose	.364	.265	-.099***
			(.039)
Oppose	.363	.362	-.001
			(.010)
Neutral	.189	.237	.048***
			(.019)
Support	.075	.022	.042***
			(.018)
Strongly Support	.009	.018	.009***
			(.005)
Observations			

Notes: ***p<.01; **p<.05; *p<.1. Standard Errors in Parentheses
Low Income(2) = 1; Control indicates TAA = 0; Treatment indicates TAA = 1.
All other variables set to median value.

Table 3: Predicted Probability of Supporting Free Trade

Probability of Supporting Trade
(High Income)

Trade Support	Control	Treatment	Difference
Strongly Oppose	.220	.267	.046
			(.035)
Oppose	.352	.363	.011
			(.010)
Neutral	.259	.236	-.023
			(.017)
Support	.143	.116	-.027
			(.021)
Strongly Support	.026	.018	-.008
			(.006)
Observations			

Notes: ***p<.01; **p<.05; *p<.1. Standard Errors in Parentheses
Low Income(2) = 0; Control indicates TAA = 0; Treatment indicates TAA = 1.
All other variables set to median value.