

A Re-Examination of Gender, Descriptive Representation, and Trade Policy

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April 8, 2021

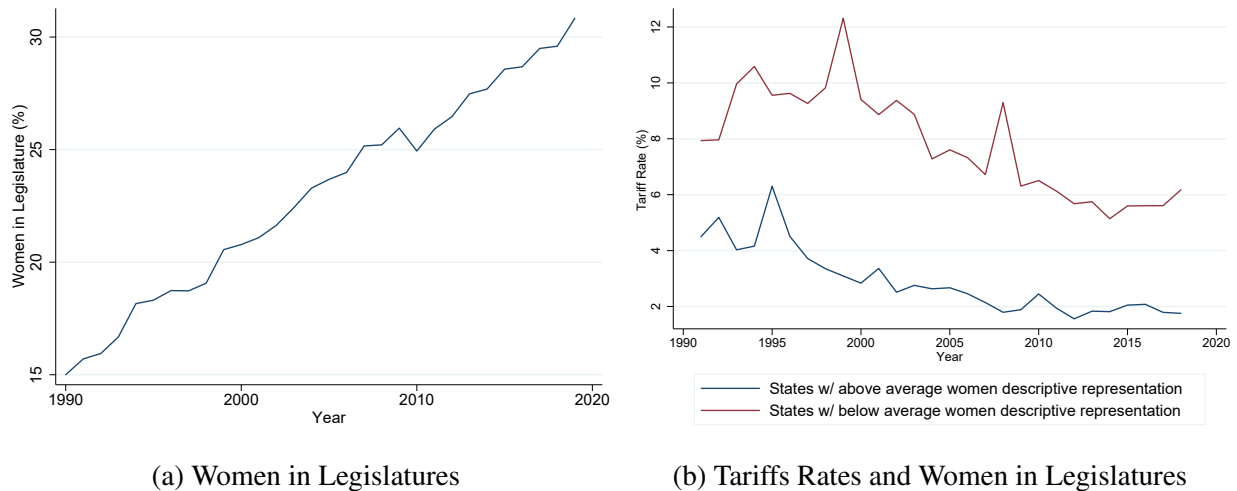
Abstract

To reconcile the discrepancy between survey research and policy outcomes related to gender and trade, we argue that women legislators are more likely to perceive trade liberalization as a foreign policy instrument to improve the living conditions of women abroad. Hence, as more women gain legislative seats in developed countries, tariff levels towards developing countries will fall. We analyze our explanation using four empirical strategies: a panel of developed countries from 1990-2019; an instrumental variable approach; third, U.S. Congressional roll call votes on trade bills; and an experimental survey. We find that women are more likely to support trade liberalization when it is perceived to improve the living conditions of women abroad. We also find that women with higher tolerance for risk are more likely to support free trade. Our findings have implications for studies of women's descriptive representation and the determinants of foreign policy.

Introduction

Figure 1 illustrates two recent trends: first, women’s descriptive representation increased in national legislatures in OECD states (World Bank 2016, Paxton, Green and Hughes 2008), and second, most OECD countries have liberalized trade (World Bank 2016). Are trade policies reflective of the impact of increased presence of women in legislatures? Ample survey-based evidence suggest that women favor protectionism.¹ If we take this individual level evidence at face value, we would predict a positive correlation between rising woman presence in legislatures and protectionist trade policy. Figure 1b clearly shows that this is not the case: most countries around the world have swiftly liberalized trade. Moreover, while OECD (non-EU) tariffs are generally trending downward, we observe a tariff rate gap between states that have more than the average percentage of women in legislatures and those where the woman share of legislative seats is less than average.²

Figure 1: OECD countries, 1990–2018



How do we reconcile this apparent difference between the results from survey research and policy outcomes related to gender and trade? Building off of research in American politics, we

¹See O’Rourke and Sinnott (2001), Scheve and Slaughter (2001), Burgoon and Hiscox (2008), Mayda and Rodrik (2005), Mansfield and Mutz (2009), Ardanaz, Murillo and Pinto (2013), Mansfield, Mutz and Silver (2014), Guisinger (2016).

²The average percentage of women in legislatures is evaluated at each year, and a country is either above or below that global average for a given year. Though not the focus of this study, possible reasons for observing the general decline in tariffs could be attributed to democratization (Milner and Kubota 2005), increased literacy (Hainmueller and Hiscox 2006), and international institutions (Tomz, Goldstein and Rivers 2007).

argue that women legislators and women in general are different in important ways (Schneider and Bos 2014). First, women legislators are more likely to feel responsibility for advancing women's issues, even when those issues affect non-constituents. As a result, when enacting trade policy woman legislators – unlike voters or survey respondents – internalize material and non-material consequences of trade protectionism at home and abroad. When voting to change tariffs on foreign goods, women legislators are likely to weigh the economic and social effects of their choices on the well-being of women in other countries more heavily than men. Importantly, women legislators are likely to value trade openness as an effective means to improve the living conditions of women and promote development abroad. These surrogate responsibility considerations usually do not arise in survey questions, which often ask respondents about their support for increasing or decreasing trade (Mansfield, Mutz and Silver 2014).

Moreover, not only do women legislators and women in general think about trade benefits in different ways, they have different risk preferences. Trade is beneficial to economies, but can be disruptive in terms of obsoleting some jobs while creating new jobs. Individuals who hold more risk averse preferences tend to prefer the safer status-quo than the disruptive consequences of trade, even as trade increases aggregate welfare. However, we suspect that women legislators are more risk acceptant than the average woman survey respondent: women legislators have selected themselves into a career requiring some tolerance of risk (Maestas et al. 2006, Sweet-Cushman 2016). Specifically, the uncertainty surrounding election outcomes suggests that women legislators are risk takers. If women survey respondents tolerate risk, then we expect them to also favor free trade openness. In sum, women legislators are more risk acceptant than women in general, leading women legislators to be more favorable of free trade.

Because of these differences between women legislators and women in general, we expect lower tariffs as more women gain legislative seats. While women's descriptive representation does not necessarily lead to substantive representation, it is more likely to (Mansbridge 2005). Moreover, the impact of increased women's descriptive representation on trade policy should be strongest in developed countries. Opening up trade in developed countries will impact economic

activity in developing countries, especially those integrating in global markets.

Figure 1b provides suggestive evidence that variation in descriptive women representation is associated with differences in tariff rates. We develop four additional rigorous tests of our argument and of alternative explanations. First, we analyze data on tariff rates for (non-EU) developed countries from 1990-2019 using an autoregressive distributed lag model. Second, we account for confounding variables and endogeneity concerns using an instrumental variable approach. In these first two tests, we consistently find that higher levels of women representation in legislatures lead to lower tariffs; we also find these effects persist in the long run. While these tests do not directly test our assumption that women legislators take into account the impact of lowering tariffs on women abroad, we demonstrate that the impact of higher presence of women in legislative bodies on trade policy directly counters the protectionist bias identified in survey-based research on individual attitudes towards trade.

Our next analyses more directly examine the proposed mechanism, which aims to reconcile the apparently contradictory results between public opinion and legislative activity on trade. A third test examines U.S. Congressional roll call data on tariff bills aimed at liberalizing access to the U.S. market for goods and services originating in less developed countries, without requesting reciprocal liberalization from developing countries. We find that woman legislators are more likely to vote for these free trade bills, controlling for partisanship, ideology and other observable confounders. Finally, we conduct an original survey experiment. While we cannot directly measure women legislators attitudes in the surveys, we can prime respondents to think about trade in ways we assume women legislators are forced to when making their trade policy choices. We find that women respondents' support for trade openness is conditional on whether trade is framed as being beneficial for women abroad. We also find that the gender bias on trade policy preferences is a function of respondents' risk aversion. Altogether, these findings help reconcile the results from our analysis of gendered patterns in trade policymaking with existing survey-based research identifying gender gap in trade attitudes.

Given that women representation is increasing in governments across the world, our results

have implications on the future of national trade policy outcomes. This is especially true in contemporary politics, as the United States and other countries have brought trade policy to the forefront of their states' agendas. Recent research on trade politics has focused on changing domestic preferences related to populism, economic nationalism, and support for radical political parties (Colantone and Stanig 2018, Margalit 2019, Hafner-Burton, Narang and Rathbun 2019). Our analysis focuses on an alternative political dynamic: changes in descriptive representation of women. Our study builds off of previous research that demonstrates that descriptive representation may result in changes in substantive representation, reflected in policies related to women at home and abroad (Swers 2013, Wängnerud 2000, 2009). However, this line of research often focuses on domestic policy outcomes rather than foreign policy. We argue that foreign policy analysis is general, and trade policy specifically, would benefit from considering the implications of women's descriptive representation.

In the ensuing sections we review the literature on why trade is a gendered issue and on the impact of woman representation on policy outcomes. We develop our argument on why we should expect women legislators to support lower trade tariffs. We then explain our four empirical strategies, present our findings, and discuss the implications of our study.

Why Trade is a Gendered Issue

Survey research focused on preferences towards globalization suggest that women are less supportive of free trade than men (O'Rourke and Sinnott 2001, Scheve and Slaughter 2001, Burgoon and Hiscox 2008, Mayda and Rodrik 2005, Mansfield and Mutz 2009, Ardanaz, Murillo and Pinto 2013, Mansfield, Mutz and Silver 2014, Guisinger 2016). Some have attributed the trade gender gap to differences in skill endowment, educational attainment, and economic knowledge (Burgoon and Hiscox 2008); mobility constraints (Cooke and Bailey 1996, Mckinnish 2008); or preferences towards lower involvement in foreign affairs (Mansfield and Mutz 2009, Mansfield, Mutz and Silver 2014). Others have found that women perceive more risk to their own employment as a result

of trade openness than men (Guisinger 2016).

Integration into the global economy through trade not only affects economic activities at home; trade affects economic and political conditions abroad. For instance, the reduction of tariffs changes the production strategies of both exporting and import competing firms. To remain competitive, firms facing decreased import tariffs usually invest in cost-saving technology and machinery (Juhn, Ujhelyi and Villegas-Sanchez 2013, 2014). This investment in technology decreases the demand for physically demanding labor, which then makes female labor more substitutable with male labor (Weinberg 2000). Consistent with this prediction, Black and Brainerd (2004) find that industries in the United States that faced more competition as a result of trade liberalization saw a reduction in the gender wage gap.

Juhn, Ujhelyi and Villegas-Sanchez (2013) further explore this relationship by considering expectations of new technology investments. They find that blue-collar women that worked in export competitive firms experienced higher employment and wages as a result of the North American Free Trade Agreement (NAFTA). As a comparison, white-collar women workers did not see the same wage increase, which is expected given that the demand for physically demanding skills should remain unchanged as a result of trade competition (Juhn, Ujhelyi and Villegas-Sanchez 2013, 2014).

Firms utilize men and women workers in different ways. Hiring practices usually benefit men. Increased trade liberalization, however, is likely to effect investments in technology and cost-saving changes in labor demand shifting benefits towards women workers. As countries engage in the global economy, women employed in exporting firms should expect higher employment and wages because of reduced tariffs. Tariffs reductions abroad should expand production for exporting firms, which increases the general demand for labor. The prospect of increased production should attract investment resulting in new technologies that benefit the relative demand of women workers. Consistent with this, Aguayo-Tellez et al. (2010) find increased employment in women-intensive industries in Mexico after the implementation of NAFTA. Trade liberalization is also likely to reduce gender discrimination in hiring because of increased competition and demands

from the importing state (Becker 2010, Krueger 1996).

Given that reduced trade tariffs can help women's wages and employment, we expect improvements in women's overall welfare as a result of trade liberalization. Wages and employment not only increase market and bargaining power for women at the macro-level; at a micro-level they increase women's bargaining position within households. As evidence of this, Aguayo-Tellez et al. (2010) find that household expenditures shift from men's preferences (i.e. alcohol and tobacco) to women's preferences (i.e. education) following trade liberalization. This not only signifies that trade can empower women, but that women empowerment can help improve the overall utility of the household and the well-being of the country. Women legislators in developed countries seem to be well aware of these patterns. For example, U.S. Congresswomen Jackson Lee in her speech supporting the passage of AGOA bill, stated "Our Growth and Opportunity trade bill seeks to uplift the women entrepreneurs and provide business and employment opportunities that will guarantee a better quality of life."³

These positive consequences of openness are not obvious to respondents to public opinion surveys, who do not have direct responsibility in enacting policy. However, the consequences of trade should be apparent to legislators, especially those who value peace and prosperity abroad, but favor less interventionism to attain these goals.⁴ Hence, we could expect that gender, development, and peace issues surrounding trade relations will increase legislative support for free trade, particularly among women legislators.

Impact of women legislators on policy outcomes

Previous empirical work demonstrates that woman politicians in legislative bodies are strong advocates on issues related to women. For example, eight-five percent of woman representatives in U.S. state legislatures stated in a 2001 survey that they agreed that "women legislators have a spe-

³From the Congressional Record Online <https://www.congress.gov/congressional-record/1999/7/16/house-section/article/H5699-2>.

⁴The Generalized System of Preferences (GSP) promoted United Nations Conference on Trade and Development (UNCTAD) in the 1960s and adopted by GATT in the 1970s, and the African Growth and Opportunity Act (AGOA) passed by the US Congress in 2000, are rooted in a similar rationale.

cial responsibility to represent women's concerns within the legislature." Two-thirds of the same sample reported they directly worked on women's issue legislation (Center for American Women and Politics 2001). Cross-nationally, this relationship holds. Woman representatives vote more for legislation aimed at promoting foreign women's rights (Swers 2006). Women legislators, across party lines, are more likely to debate women's interests during the legislative process (Pearson and Dancey 2011), and women are more likely to vote as a coalition on these issues (Swers 1998, 2002, Dolan 1997). Related to foreign policies, more women in legislatures leads to increased development assistance and humanitarian interventions that are thought to help women (Breuning 2001, Shea and Christian 2016). However, the existing literature has not considered the impact of women's descriptive representation on other foreign policies, specifically trade.

Women are not a monolithic political coalition with uniform preferences. While women's interests are varied, there are common experiences of being women. A woman legislator will feel responsibility for women's issues, even when those issues affect non-constituents, when the representative has shared similar experiences with the surrogate constituents (Mansbridge 2003). This "surrogate responsibility" is more likely to manifest when women legislators identify with potential surrogates (Angevine 2017). We argue that gender discrimination in the workforce is such a shared experience. Women legislators, for instance, are likely to experience discrimination from both voters and from their political colleagues, which discourages many capable women from running for office in the first place (Anzia and Berry 2011). While men can have empathy for gender discrimination, men are less likely to be politically motivated by this empathy than women legislators.

Women legislators and trade policy

As discussed above, trade liberalization is likely to benefit women within a country, as well as in trade partners, especially when women are employed – or potentially will work – in an industry which expands because of liberalization. The expansion of trade related activities also results

in greater bargaining power for women, better educational and social outcomes, and accelerated development (Duflo 2012). Women legislators are more likely to act as surrogate representatives for women in their constituency and act as transnational surrogate representatives for other women beyond their constituency.⁵ Hence, we argue that women legislators will be more supportive of reduced tariffs.

We expect that women legislators not only prefer reduced tariffs, they are also likely to be more effective at lowering tariffs. Consequently, greater women presence in legislative bodies will lead to lower tariffs on trade. There are three reasons why more women legislators lead to lower tariffs. First, women as a strategic voting coalition will grow more influential with increased members. Growing strategic women coalitions should also influence men legislators on trade policy, and we expect that the likelihood that men legislators are influenced increases as the number of woman legislators increases. Though there is risk of backlash from men as more women enter office (Childs and Krook 2009), this potential resistance is unlikely to occur over trade liberalization. Trade is not normally framed as a women's issue, nor does it undermine men's positions in government. If the politics surrounding tariff reduction are not undermining men's position of political dominance, we expect that men legislators will be less likely to oppose lower tariffs *because* they are a women's issue. Related, men legislators will be more likely to be influenced by women legislators if tariff reduction policies are not perceived as women issues or framed as such. Instead, trade is usually framed around broader issues of economic growth and prosperity.

The second reason why we expect women legislators to impact trade policy is the shared experience of gender discrimination. Gender discrimination motivates women legislators to mobilize and overcome the constraints placed by their minority status. We expect that identity issues and shared experiences will motivate women legislators to assume the role of critical actors in the legislature.⁶ Critical actors on issues surrounding women's employment status do not necessarily have to be woman. Men may experience similar empathy as woman legislators, however, we expect

⁵See Mansbridge (2003), Angevine (2014), and Angevine (2017) for a more in-depth discussion on surrogate representation.

⁶Critical actors on woman issues are those "who act individually or collectively to bring about women-friendly policy change." (Childs and Krook 2009, 127).

some divergence on how much men are willing to advocate for trade policies based on gender motivations. More women legislators increase the likelihood that a woman critical actor materializes. For example, the more women legislators, the greater the supply to fill important ministry positions (Krook and O'Brien 2012, Barnes and O'Brien 2018). Related to trade policy, we expect women to emerge as critical actors as a result of the importance of gender discrimination, and the impact of trade on women empowerment and development abroad. The quote below from the Representative Eddie Bernice Johnson supports this expectation:

“I rise in support of H.R. 434, hoping that many of my colleagues will answer the call from African leaders, and specifically women who are eager to possess the means to fully engage the global economy, becoming economically self-reliant. This bill helps the economic standing of women in Africa and well as in the U.S... Currently, women in Africa head about 40 percent of African households and supply a significant percentage of the African workforce in the following industries: food processing, agricultural workforce, marketing and domestic food shortage. This shows that they are already proving their ability to work to take advantage of the benefits that would be provided by the passage of H.R. 434. Economic growth provided under AGOA also benefits women by generating increased resources for critical health care and educational needs.”⁷

Finally, we expect women to be more effective in legislating on trade issues specifically, and policy in general. Gender bias in the electoral process leads to a selection effect: only more capable women candidates succeed in elections. Thus, the women we observe in office will perform their job better than the average male legislator (Anzia and Berry 2011). While gender bias in American electoral system may be declining (Hayes and Lawless 2016), previous research finds that women U.S. representatives deliver more federal spending to their districts (Anzia and Berry 2011) and sponsor more successful legislation (Wiseman, Volden and Wittmer 2013). Mendelberg,

⁷Congressional Record Proceedings and Debates of the 106th United States Congress, First session. <https://www.congress.gov/crec/1999/07/16/CREC-1999-07-16.pdf>

Karpowitz and Goedert (2014) demonstrate more women representation leads to higher advocacy on issues related to women. In addition, legislatures with more women representatives pass more laws related to women's issues (Bratton 2005, Thomas 1991, 1994, Wängnerud 2000, 2009). The gender bias prevalent in many countries' electoral institutions suggests that research in American politics on political representation has broader empirical implications. Thus, we expect that women in legislatures across countries are highly effective in advocating on women issues. Also, we expect that if women legislators do not advocate on behalf of other women, it will be less likely that anyone will. This statement from Republican U.S. representative Marge Roukema is consistent with our expectation:

“I didn't really want to be stereotyped as the woman legislator... I wanted to deal with things like banking and finance. But I learned very quickly that if the women like me in Congress were not going to attend to some of these family concerns, whether it was for jobs or children, pension equity, or whatever, then they weren't going to be attended to. So I quickly shed those biases that I had and said ‘Well nobody else is going to do it; I'm going to do it.’ ”⁸

Woman legislators are well-positioned to advocate for trade policies that benefit women at home and abroad. We expect that as women's descriptive representative increases in a country's legislature, that country will be more likely to reduce tariffs. From this discussion we derive the following hypotheses:

Hypothesis 1: Higher presence of women in national legislatures is associated with lower average tariffs.

Hypothesis 2: Women legislators will be more likely to support free trade legislation than men.

We expect women legislators to favor lower trade barriers because trade is an effective means to improve women's living conditions at home and abroad. Then why do we observe a gender

⁸Quoted in Carroll (2002, 55).

gap in the trade literature, where women survey respondents are more supportive of protectionist policies? We put forward two explanations. First, surveys measuring women's attitudes towards trade do not usually frame trade policies in terms of development benefits or targeted benefits of trade for women. Instead, the trade surveys usually focus on self-interest, skill endowments, educational attainment and economic knowledge. Therefore, the development benefits of trade may not be obvious to the average respondent in survey samples. Woman legislators, however, do think of trade in terms of development benefits. We expect that women respondents would respond more favorably to free trade if trade's development benefits were highlighted.

Hypothesis 3: Women's support for lower trade barriers is conditional on the expectation that trade liberalization benefits women.

An alternative explanation for the discrepancy between our expectations of women legislators' support for free trade and the gender gap in surveys is risk orientation. Despite trade's overall benefits, trade openness is risky given disruption to some jobs. Individuals who hold more risk averse preferences tend to prefer the safer status-quo than the disruptive consequences of trade, even if trade increases overall welfare. Consistent with this expectation, Guisinger (2016) finds that women's individual risk preferences, rather than sociotropic motivations, lead to difference in trade preferences. If the average women respondent is more risk averse than the average man (Kam and Simas 2010), then we should expect a gender gap in survey responses related to trade. However, we suspect that woman legislators are more risk acceptant than the average woman survey respondent, given that woman legislators have selected themselves into a career requiring some tolerance of risk (Maestas et al. 2006, Sweet-Cushman 2016). If women survey respondents tolerate risk, then we expect them to also favor free trade.

Hypothesis 4: Risk acceptant women are more likely to favor trade than risk averse women.

0.1 Alternative explanations

A plausible explanation for the differences in tariff rates in Figure 1b is that global trends account for both lower tariff rates and increased women descriptive representation. Global integration into the world economy or the effectiveness of the WTO can help explain declining tariff rates. In addition, global initiatives – such as UN Women – help increase women representation and normalize women leadership.

Domestic factors may also explain both trade policies and women descriptive representation. For example, higher education or embedded liberal ideals may lead to lower trade barriers and higher women presence in government. Alternatively, partisan alignments or economic conditions may affect both trends. In sum, there may exist some observable or unobservable global or domestic political confounders explaining trade policy and representation. Therefore the difference between the survey and observed results is not a discrepancy at all, but rather just a function of these confounders.

Alternatively, it may be the case that women legislators do not favor free trade more than men. Instead, women legislators select themselves to represent certain constituencies and promote certain policies. Alternatively, women legislators could be more risk acceptant than the average woman survey respondent. Trade is beneficial to economies, but can be disruptive in terms of obsoleting some jobs while creating new ones. Individuals who hold more risk averse preferences oppose the disruptive consequences of trade, even if trade increases aggregate welfare. We test these potential alternative arguments and our own preferred argument in the next section.

Empirical Analysis

We employ four empirical strategies to test our hypotheses. First, we analyze data on cross-country tariff rates over time fitting an autoregressive distributed lag model. Second, we adopt an instrumental variable estimation to mitigate endogeneity concerns. Third, we examine U.S. Congressional roll call votes on tariff legislation. Finally, we examine responses to an original survey

experiment exploring the proposed mechanisms connecting woman respondents and trade preferences.

To begin, we compile cross-sectional-time-series data on tariff rates and women in legislatures. Our data extends from 1990 to 2019, and the unit of observation is country-year. The cases are limited to Organization for Economic Cooperation and Development (OECD) states for several reasons. First, these countries are the most developed economies, have active trade with most countries around the world, and have been increasingly engaged in trade with developing countries in the past three decades. Second, these states tend to be consolidated democracies, where legislators can impact trade policy. Finally, evidence from survey-based research on trade and gender has focused mostly on respondents in developed countries.⁹

The first test is designed to control for potential observed and unobservable confounders. To control for confounders, we implement three strategies. First, we use unit and year fixed effects. These account for time invariant country characteristics –including GATT/WTO membership or trade history– and common temporal effects. Second, we control for observable, time variant confounders. We acknowledge that our controlling for observables does not guarantee that our estimates represent causal effects. We therefore employ an instrumental variable model as our second test.

Our dynamic data varies over time. Up until this point we have not specified our temporal expectations of how women legislators affect tariffs. We surmise that women in legislatures should have more long-term consequences as these policies take time to develop and negotiate. Consequently, we focus on long-term effects of women legislators and estimate an autoregressive distributed lag (ADL) model with a lagged dependent variable and lagged covariates.¹⁰ We express

⁹We exclude European Union (EU) members from our analysis given that these states negotiate common tariff rates. We extend our analysis to non-OECD countries in the appendix.

¹⁰The long temporal scope of our data makes it unlikely that the inclusion of both a lagged dependent variable and unit fixed effects would bias our results (Beck and Katz 2011). In the appendix, we estimate a general ADL model that includes changes in covariates and find support for our temporal restriction assumptions in the ADL model (De Boef and Keele 2008).

the simplified version of the model as:

$$Y_t = \beta_0 Y_{t-1} + \beta_1 X_{t-1} + v_i + \varepsilon$$

Data: We examine tariff rates as our outcome of interest, using the weighted average percentage of all applied tariffs rates (data from World Bank’s World Development Indicators). We also examine most-favored-nation (MFN) tariffs rates in the appendix and find similar results. We focus on tariffs instead of alternative dimensions of trade liberalization because legislatures directly deliberate, debate, and legislate over tariffs.

We measure women’s descriptive representation as the percentage of women in a national legislature, using data from WDI (1991, 1997 – 2018) and Paxton, Green and Hughes (2008) to fill in some gaps in the data in years (1990, and 1992–1997).

We include control variables to address global and domestic confounders. First, we focus on structural economic conditions that may be a result of global or domestic conditions. These include the following economic variables: real GDP per capita, economic growth, and unemployment rates. Data for these variables are drawn from WDI (World Bank 2016). These economic variables affect trade conditions and the politics under which tariffs are negotiated. They also may affect the likelihood of women being elected into office.

We also consider institutional and political factors that may influence women legislators’ effect on policy. While the states in our sample are democratic, they vary their adherence to liberalism. We expect that more liberal states will have lower trade barriers and more women representation. We use the v-Dem measure for liberalism for this control (Coppedge et al. 2019). Similarly, we want to account for women rights and empowerment, as this variable should covary with representation and trade policies. Again, we use v-Dem’s measure of women empowerment. Finally, we control for education levels (World Bank 2016), as more educated societies may promote women representation and more open trade policies.¹¹

¹¹We consider alternative institutional features, such as proportional presentation systems. We find that these variables have negligible effect on our results. This is expected, given that the influence of slow-changing state characteristics will be captured by the unit fixed effects.

To instrument for women representation, we consider the consequences of household decisions on education. Specifically, we look at the ratio of women enrolled in secondary school (as a percent of all women eligible to attend school) compared to men enrolled in secondary school (as a percent of all eligible men). This measure captures the investment in women household members, and reflects the household's gender socialization. Esarey and Schwindt-Bayer (2019) use a similar instrument, but we lagged our variable by a generation (twenty-five years) as household investment and socialization process should affect women's decisions to run for office later in their life. The lag also makes it harder to connect the past ratio of woman-to-man enrollment to trade and tariffs a generation later. The correlation between the ratio measure and women legislators is moderate ($\rho = 0.63$); additional tests indicate a strong and valid instrument.

Results of ADL and IV Models

Table 1 first presents autoregressive distributed lag (ADL) estimates in model 1. To illustrate the substantive effect, we plot the predicted tariff levels from this model over *women in legislatures* in Figure 2. We observe a substantial decrease in tariffs as the number of female legislator increases. Model 2 examines the effect of the instrumented variable, *Women in Legislature* using the ratio enrollment measure as the IV, finding consistent results. The results suggest that the relationship between women descriptive representation and tariffs are not driven by global or domestic confounders.

Roll Call Vote Analysis

The above results consistently show that more woman legislators lead to lower tariffs, and that these effects persist in the long run. To further probe our argument at a less aggregate level, we examine whether woman legislators are more likely to vote for trade liberalization. This test also allows us to test for constituent selection effects.

We collect data on trade bills considered in the U.S. Congress, such as the Andean Trade Preference Act, the African Growth and Opportunity Act and the Generalized System of Preferences,

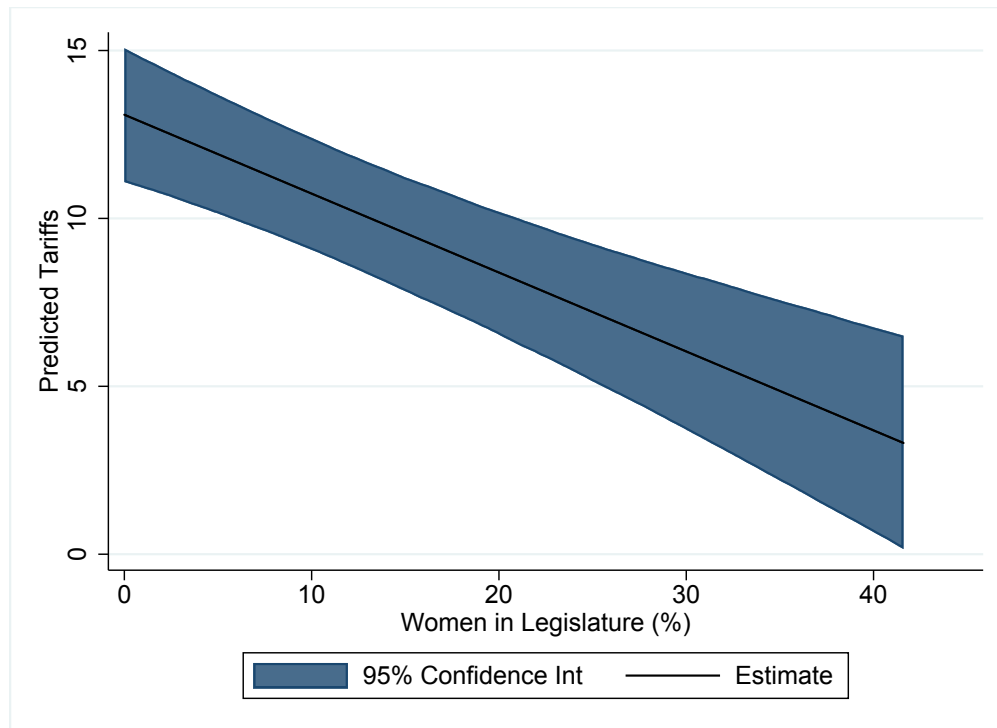
Table 1: Women Legislators and Tariffs Rates, 1990 - 2018

	<i>OLS</i>	<i>IV</i>
	(1)	(2)
Women in Legislature (%)	-0.173*	-0.828*
	(0.051)	(0.241)
Tariffs _{t-1}	0.153*	0.017
	(0.065)	(0.106)
Unemployment	0.050	-0.297
	(0.084)	(0.189)
Growth	0.019	-0.092
	(0.051)	(0.082)
GDP per cap	0.140	0.071
	(0.088)	(0.135)
Liberal Index	-5.400*	-12.460*
	(2.608)	(4.540)
Gender Empowerment	-5.370	36.636*
	(6.402)	(17.738)
School Enroll	0.008	0.186*
	(0.028)	(0.069)
Country Fixed Effects	<i>Yes</i>	<i>Yes</i>
Year Fixed Effects	<i>Yes</i>	<i>Yes</i>
R-Squared	0.57	0.20
AIC	843	739
N	226	165
<i>Weak IV Diagnostics</i>		
Cragg-Donald Wald F statistic		15.97*
Anderson-Rubin χ^2 test		17.58*

* $p < 0.05$; ; RHS variables are lagged one year.

Sample includes only OECD, non-EU states.

Figure 2: Predicted Tariff Rates, 1990 - 2019



that aim at promoting development abroad by providing preferential access to the U.S. market of goods and services originating in developing countries. This empirical strategy has the additional advantage of examining individual legislators' behavior in trade policy votes, while controlling for ideology, party and district level covariates. We analyze roll call data from the 93rd to the 114th US Congresses in the years 1990 - 2015. The unit of analysis is a legislator's vote.

The dependent variable is binary: each vote is coded as one when a legislator favors the trade liberalization bill.¹² Our main explanatory variable is the gender of the individual legislator. We control for potential confounders including partisanship –coded as one for Democrats– and ideology –measured using the first dimension of DW nominate score, where higher values indicating more conservative legislators (Carroll et al. 2011). Model 1 in Table 2 estimates a logistic regression with fixed effects for each round of voting, with standard errors clustered on Congressional session. We find that woman U.S. legislators are significantly more likely to vote for free trade legislation than their male counterparts. Substantively, woman legislators are 17 percent more likely

¹²Data on roll-call votes were from www.voteview.com

to vote in favor of this legislation.

Table 2: US Congressional Roll Call Votes on Free Trade Bills, 1990 - 2015

	(1)	(2)
Woman Legislator	0.162*	0.184*
	(0.045)	(0.055)
Democrat	-0.863	-0.921*
	(0.512)	(0.330)
DW Nominate	0.717	0.971*
	(1.032)	(0.412)
High Skill		1.128
		(2.274)
Unemployment		1.634
		(5.393)
Log Likelihood	-4861	-1620
AIC	9733	3248
N	9791	3668

* $p < 0.05$; Roll call fixed effects. Standard errors clustered on Congressional session.

However, given some citizen's concerns regarding the free trade agreements (Hiscox 2002; Milner and Tingley 2011), legislators vote on such bills might also reflect the characteristics of their constituency. Therefore, Model 2 includes control variables to account for the economic characteristics of US legislators' districts or states. We include measures for the percent of high skilled labor and unemployment rate.¹³ These added covariates do not substantively change our inference, as woman legislators are 20 percent more likely to vote for free trade legislation.¹⁴

Experimental examination of trade preferences

The above analysis consistently shows that woman legislators are associated with lower tariffs, both at the cross-national level and in the U.S. Congress. Our explanation for this relationship is that woman legislators are more likely to support free trade, and that women legislatures value

¹³These values were obtained from Milner and Tingley (2011) replication data. Because of missingness, including these variables decreases sample size. We consider alternative controls and data sources. These variables do not change our inferences.

¹⁴We also examine the robustness of the findings by accounting for confounders, such as contributions from labor PACs and corporate PACs, district education levels, median household income at the district level as well as percentage of foreign population of the district. The main inferences do not change. These robustness tests can be found in the replication materials.

trade openness as an effective means to improve the living conditions of women and promote development abroad. Unfortunately, our analysis can only indirectly test this mechanism. We argued that woman legislators in developed countries will be more likely to empathize with women's working conditions in less developed countries. We find it less likely that women legislators in less developed countries empathize with women's working status in more developed countries. Our analysis supports those expectations. We underscore, however, that while supportive these empirical patterns are only indirect tests of our theory.

To further test the potential mechanisms of our argument and reconcile our findings with those from survey-based research, we directly examine individuals' attitudes towards trade as a function of gender in a survey experiment. While we cannot directly assess legislators' attitudes on trade, we expect that our survey will first, provide some evidence for (or against) our proposed mechanism, and second, help explain the differences between our above results and previous survey research on the gender gap in trade attitudes. We are unaware of any previous surveys that focused on material and non-material consequences of protectionism at home and abroad. Our survey examines whether these factors matter for gendered differences in trade attitudes.

In addition, we consider the role of risk preferences on trade policy. Guisinger (2016) argues that women perceive more risk to their own employment as a result of trade openness than men. We suspect that woman legislators are more risk acceptant than the average American woman given that woman legislators have selected themselves into a career that is risk acceptant. Therefore, if risk attitudes drive trade attitudes, we expect that the most risk acceptant women in our survey to have favor attitudes to free trade.

We conducted a survey experiment to a sample of 1,500 U.S.-based respondents recruited by Amazon Mechanical Turk in May 2019. We asked respondents standard demographic and political attitudinal questions, followed by a vignette on trade. We told respondents the following:

Congress considers many issues. If you were in Congress would you support or oppose the African Growth and Opportunity Act, a trade preference program that is at the center of U.S.-African engagement on trade and investment.

Then some of the respondents were randomized into different treatment groups, which were provided more information about this trade policy. Respondents in treatment 1 were told about how the African Growth and Opportunity Act (AGOA) will benefit women in Africa. We expect that woman survey respondents will increase their support for AGOA as a result of this framing. Treatment 2 respondents were told that AGOA would benefit American women. Consistent with the first treatment, we expect that woman survey respondents will increase their support for AGOA as a result of this framing. Treatment 3 respondents were told about the expected job benefits of trade, but also the possible risks to the economy. We expect that respondents in this treatment group will have lower support for AGOA, though that lower support is conditional on existing risk attitudes. We outline these treatments and our expectations in Table 3.

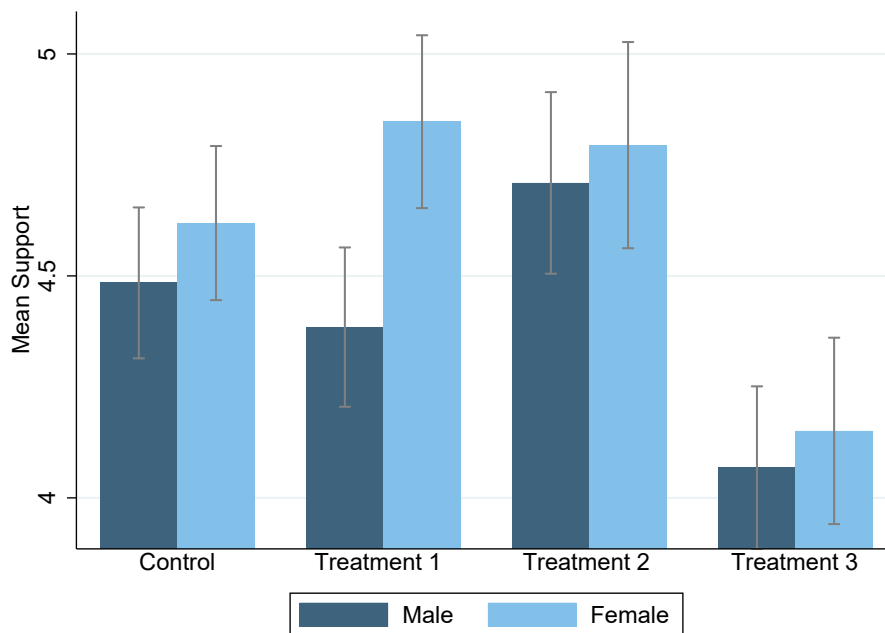
Table 3: Survey Experiment Treatments

TREATMENT GROUP	ADDITIONAL INFORMATION	EXPECTATIONS
Control	{No added information}	Baseline comparison
T1	<i>This trade program helps create better educational and economic opportunities in Africa, particularly for women.</i>	Higher support for trade for women
T2	<i>This trade program helps create better educational and economic opportunities in the United States, particularly for women.</i>	Higher support for trade for women
T3	<i>While this trade program continues to add more jobs to the U.S. economy, there is a chance that some people will lose their job as a result of its continuation.</i>	Higher support for trade for women with risk acceptant attitudes

Following the vignette respondents were asked how likely they would support such a bill in Congress. We created a 7 point Likert scale of the respondents’ answers, ranging from “Strongly Support” to “Strongly Oppose.” Figure 3 summarizes our sample’s responses, conditional on gender. From this graph we can infer that women’s support for trade does increase when the vignette highlights the benefits of trade for women in Africa. This result is consistent with our expectations

that women legislators in developed countries care more about the material and non-material benefits of trade for women in developing states. As a placebo test, we asked respondents about a free trade agreement with the United Kingdom, with a treatment highlighting the benefits for British women (these results are reported in the appendix). In that test, we find no gendered differences in support for trade, suggesting that women’s concerns for the material and non-material benefits of trade for women abroad extend more to developing countries than developed countries.

Figure 3: Treatment effects across randomized groups



Bars represent 95% confidence intervals. Treatment 1 highlights benefits of trade for women abroad. Treatment 2 highlights benefits of trade for women in the U.S. Treatment 3 highlights the risks of trade.

We observe a similar increase in the support for trade amongst woman respondents in treatment 2, but we also observe a similar increase of support amongst men. These results suggest that gendered differences in trade policy are more a function of the benefits of trade abroad than at home.

Table 4 reports results for the first two treatment groups, relative to the control group. For the first treatment, we observe that women respond more positively than men to the benefits of trade to women abroad. For the second treatment, we observe that men and women respond favorably

to the benefits of trade to women at home, but there is no statistical difference in this response to the treatment by gender.

Table 4: Effect of Treatments 1 & 2 by Gender

	Control	T1: Benefits for Women Abroad	Effect
Woman	4.689 <i>280</i>	4.847 <i>177</i>	0.158 [-0.089, 0.406]
Man	4.574 <i>371</i>	4.3846 <i>260</i>	-0.189 [-0.398, -0.019]
Difference			0.348* [0.672, 0.023]
	Control	T2: Benefits for Women at Home	Effect
Woman	4.759 <i>283</i>	4.794 <i>112</i>	0.034 [-0.259, 0.329]
Man	4.374 <i>401</i>	4.709 <i>148</i>	0.335* [0.081, 0.589]
Difference			-0.300 [-0.689, 0.088]

**p* < 0.05; The table shows the mean support for trade policy by group. Cell sample sizes are in italics, and 95% confidence intervals are in brackets.

Treatment 3 highlights the risks of trade, which accounts for the lower support for this group of respondents. To analyze the effect of Treatment 3 (risk), we not only consider the importance of gender but also risk attitudes. Consistent with Guisinger (2016), we expect woman respondents to be more sensitive to the risk treatment, and therefore women who are more risk acceptant will be most supportive of trade. To measure risk attitudes, we replicate previous surveys on risk (Eckles and Schaffner 2011) and ask respondents the following question:

Suppose you are the only income earner in the family and you have a good job guaranteed to give you income every year for life. Then suppose you are given the opportunity

to take a new and equally good job, with a 50-50 chance it doubles your income and a 50-50 chance that it will cut your income by a third. Would you take the job?

Respondents who answer “Yes” to this question are coded as risk acceptant and those who respond “No” are coded as risk averse. Figure 4 show respondents’ support for the AGOA trade policy by both gender and risk attitudes when they were randomized into Treatment 3. Risk averse respondents have lower support for trade under the risk treatment, with no obvious difference between genders. For risk acceptant respondents, we observe higher support for both men and women, but with a larger increase for women. We analyze these differences in Table 5, and find that the effect of the risk treatment affects men and women differently, conditional on risk attitudes. These results are consistent with Guisinger’s (2016) argument that the woman bias in support for protection could be driven by differences in risk attitudes and the perceived risks of trade liberalization. In addition, the results provide some evidence as why a gender gap exists in the existing trade-survey literature. If women respondents are more risk averse than men, and women respondents are more sensitive to the risks of trade, then we should expect men to be more favorable to free trade. However, for women who are more risk acceptant we should expect a stronger change in support for free trade compared to men.

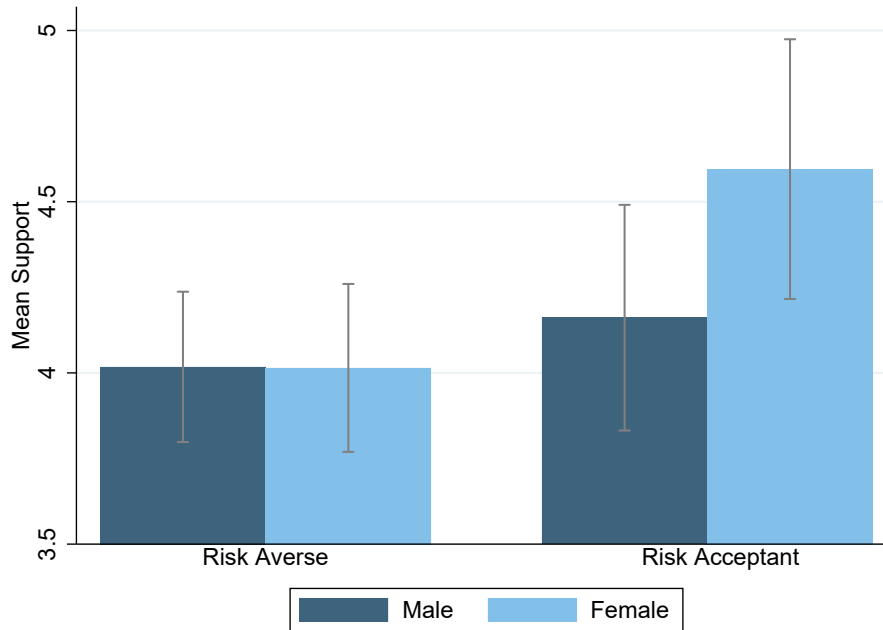
Results from our survey experiment have limited implications on actual policy decisions because we could not directly ask legislators about the motivations for their trade policy choices. However, the findings from the experimental conditions are supportive of our proposed mechanism. They also provide plausible explanations for reconciling the results from the analysis of cross-national and legislative votes, with the gender gap in attitudes towards openness found in public opinion surveys. Our analysis of responses to the experimental conditions embedded in the survey shows that woman respondents are more favorable of trade liberalization when the benefits from trade reach women in developing countries. This is also consistent with arguments that women legislators act as transnational surrogate representatives for other women beyond their constituency (Angevine 2014). We do not observe the same gendered difference when the benefits of trade focus on women at home. Finally, we observe that risk attitudes, particularly for women,

Table 5: Effect of Treatment 3 by Gender and Risk Attitudes

Risk averse respondents			
	Control	T3: Risk Frame	Effect
Woman	4.674 <i>123</i>	4.014 <i>137</i>	-0.660 [-1.353, 0.032]
Man	4.380 <i>142</i>	4.017 <i>171</i>	-0.362 [-0.996, -0.270]
Difference			-0.297 [-1.236, 0.641]
Risk acceptant respondents			
	Control	T3: Risk Frame	Effect
Woman	4.466 <i>45</i>	4.595 <i>42</i>	0.128 [-1.467, 1.724]
Man	4.666 <i>81</i>	4.161 <i>93</i>	-0.505 [-1.636, 0.625]
Difference			0.633 [-1.322, 2.590]
Difference in differences by risk groups			
Difference of differences			0.931* [1.768, 0.093]

* $p < 0.05$; The table shows the mean support for trade policy by group. Cell sample sizes are in italics, and 95% confidence intervals are in brackets.

Figure 4: Treatment effect of risk framing across



Bars represent 95% confidence intervals.

seem to drive support for free trade. If woman politicians have different risk attitudes than typical survey respondents, our results help explain why we can simultaneously observe a gender gap in survey responses and women legislators supporting trade liberalization. While these results are not definitive, they reveal a potentially fruitful line of future research on gender and trade issues.

Conclusion

Trade openness is an effective tool for improving the living conditions and bargaining power of women in sectors engaged in the global economy. Empowering women in the household and the polity has positive development spillovers. Individual level research suggests that while less supportive of openness and more reluctant to endorse military and economic intervention abroad, women are more likely to support global peace and prosperity.

We argue that despite the gender gap in individual support for trade, women legislators are less protectionist than their male counterparts. When voting on trade, woman policymakers are

more likely to weigh the economic and social effects of their policy choices for women. Our survey experiment suggests that the benefits for women abroad are most important, though further research is needed to examine this mechanism. Nonetheless, we expect that as more women gain legislative seats, tariffs will decrease. The trend will be more apparent in developed countries, as opening up to trade will result in higher exports from the developing world.

Using multiple empirical strategies we find individual level evidence that women's support for trade is a function of risk and the benefits of trade for women abroad. We unveil a complex, counterintuitive explanation that helps reconcile individual level preferences on trade and national policy outcomes reflected on tariffs. As women political participation in government is rising worldwide, our results have implications for understanding the future of national trade policy strategies. This is especially true in contemporary politics, where trade policy has been brought to the forefront of governments' agendas. Recent research on trade politics has focused on changing domestic preferences related to populism, economic nationalism, and support for radical political parties (Margalit 2019). Our analysis focuses on an alternative political dynamic identified in recent research: descriptive representation has resulted in changes in substantive representation, and is reflected in policies related to women at home and abroad (Swers 2013). However, this line of research often focuses on domestic policy outcomes rather than foreign policy. We argue that foreign policy analysis is general, and trade policy specifically, would benefit from considering the implications of women's descriptive representation. In addition, given the increasing use of experiments, surveys, and other types of individual level data in political economy research (Jensen, Mukherjee and Bernhard 2014), we believe it is important to connect that individual-level research to policy consequences.

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Supplemental Appendix

A List of Countries in Sample of Tests 1 & 2

Table 1: Sample of OCED, Non-EU Countries, 1990 - 2018

Country	Years
United States	1992 - 2018
Canada	1995 - 2018
Mexico	1996 - 2018
Chile	2010 - 2018
Switzerland	1996 - 2018
Poland	1996 - 2003
Austria	1992 - 1994
Hungary	1996 - 2003
Czech Republic	1995 - 2003
Slovak Republic	2000 - 2003
Finland	1992 - 1994
Sweden	1992 - 1994
Norway	1996 - 2018
Iceland	1999 - 2018
Turkey	1996 - 2018
Israel	2012 - 2018
South Korea	1997 - 2018
Japan	1992 - 2018
Australia	1997 - 2018
New Zealand	1993 - 2018

Table 2: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Tariffs (All)	3.234	3.023	0	18.56	272
Tariffs (MFN)	4.473	3.375	0	19.87	272
Women in Legislature (%)	20.736	11.111	1.3	47.6	327
Unemployment	6.086	3.226	1.7	19.9	293
GDP	27.027	1.757	22.744	30.44	316
Growth	2.576	2.669	-5.914	10.731	316
GDP per cap	37.419	21.931	6.424	91.594	316

B Summary Statistics

C Error Correction Model for Test #1

D Placebo Test I: Tariff rates for developing states

E Most Favored Nation (MFN) tariff rates

The manuscript examines the weighted average of all tariff rates as the outcome of interest for national trade policy. This section examines an alternative outcome: weighted Most Favored Nation (MFN) tariff rates. These data are drawn from World Bank Indicators. As shown in Table 5, our inferences remain the same. More women representation decreases tariff rates.

F Placebo Test II: benefits to women in developed countries

We argue that women in developed countries care about the material and non-material benefits of trade for women in developing states. As a placebo test, we asked respondents about a free trade agreement with the United Kingdom, with a treatment highlighting the benefits for British women. The control group were given the following vignette:

Table 3: ECM Women Legislators and Tariffs Rates, 1990 - 2015

	(1)	(2)
Long Run Multiplier	-0.325*	-0.309 *
Women in Legislature	(0.063)	(0.067)
Women in Legislature _{t-1}	-0.234*	-0.120*
	(0.047)	(0.030)
Δ Women in Legislature (%)	0.014	-0.022
	(0.055)	(0.031)
Unemployment _{t-1}	0.095	0.076*
	(0.052)	(0.032)
Δ Unemployment	-0.198	-0.150*
	(0.134)	(0.074)
GDP _{t-1}	-2.202	-1.227
	(1.861)	(1.111)
Δ GDP	37.834	-111.298
	(153.490)	(85.682)
GDP per cap _{t-1}	0.056	0.131*
	(0.065)	(0.042)
Δ GDP per cap	-0.122	0.051
	(0.195)	(0.115)
Growth _{t-1}	-0.490	1.017
	(1.512)	(0.845)
Δ Growth	-0.432	1.048
	(1.508)	(0.844)
Tariffs _{t-1} (All)	-0.720*	
	(0.049)	
Tariffs _{t-1} (MFN)		-0.387*
		(0.038)
R-Squared	0.52	0.57
AIC	829	525
N	248	248
Countries	19	19

* $p < 0.05$; ; MFN = Most Favored Nation, All = All states. Sample analyzed includes only OECD, non-EU states. Unit and year fixed effects included. F-Test of Δ coefficients fails to reject the null hypothesis that these are jointly zero.

Table 4: ECM Women Legislators and Tariffs Rates in Non-OECD States, 1990 - 2015

	(1)	(2)	(3)	(4)
	(All)		(MFN)	
Women in Legislature (%)	-0.023 (0.012)	-0.014 (0.012)	0.007 (0.010)	0.006 (0.011)
Tariffs _{t-1} (All)	0.603* (0.020)	0.561* (0.021)		
Tariffs _{t-1} (MFN)			0.642* (0.019)	0.613* (0.020)
Unemployment	-0.000 (0.030)	0.014 (0.030)	-0.026 (0.026)	-0.016 (0.026)
GDP	-2.573* (0.379)	-2.253* (0.572)	-2.059* (0.315)	-2.540* (0.495)
Growth	-0.031* (0.014)	-0.012 (0.015)	-0.011 (0.012)	-0.002 (0.013)
GDP per cap	0.035 (0.045)	0.096* (0.046)	0.018 (0.039)	0.064 (0.039)
R-Squared	0.61	0.63	0.61	0.63
AIC	5714	5668	5245	5218
N	1446	1446	1446	1446
Countries	138	138	138	138

* $p < 0.05$; ; MFN = Most Favored Nation, All = All states. Sample analyzed includes only non-OECD, non-EU states. Unit and year fixed effects included.

Table 5: Women Legislators and MFN Tariffs Rates, 1990 - 2019

	<i>OLS</i>	<i>IV</i>
	(1)	(2)
Women in Legislature (%)	-0.171*	-0.288*
	(0.041)	(0.112)
Unemployment	-0.080	-0.262*
	(0.072)	(0.105)
Growth	-0.016	-0.015
	(0.044)	(0.048)
GDP per capita	0.214*	0.209*
	(0.060)	(0.087)
Liberal Index	1.514	-0.224
	(2.474)	(2.782)
Gender Empowerment	-11.154*	-8.561
	(5.509)	(8.728)
School Enrollment	11.303*	11.781*
	(2.807)	(3.023)
Country Fixed Effects	<i>Yes</i>	<i>Yes</i>
Year Fixed Effects	<i>Yes</i>	<i>Yes</i>
R-Squared	0.63	0.62
AIC	886	596
N	245	171

* $p < 0.05$; ; All RHS variables are lagged one year. Sample analyzed includes only OECD, non-EU states.

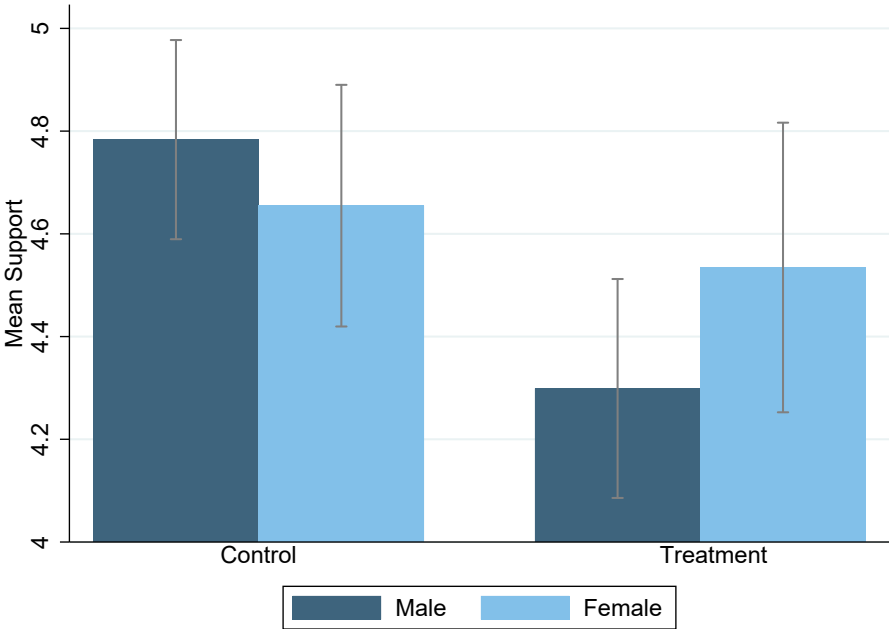
Congress considers many issues. If you were in Congress would you support or oppose the preferential trade agreement with United Kingdom, a program that is at the center of U.S.-U.K. engagement on trade and investment.

A random group of respondents was assigned to a treatment group receiving additional information about the benefits of the trade agreement for women in the UK:

Congress considers many issues. If you were in Congress would you support or oppose the preferential trade agreement between U.S and United Kingdom, a trade program that is at the center of U.S.-U.K. engagement on trade and investment. This trade program helps create better educational and economic opportunities in U.K., particularly for women.

Both groups were then asked to whether they supported the trade agreement. In that test, we find that the treatment *decreases* support for the trade agreement. We find no gendered differences in that declined support, suggesting that females' concerns for the material and non-material benefits of trade for women abroad extend more to developing countries than developed countries.

Figure 1: Treatment effects across randomized groups for UK benefits



Bars represent 95% confidence intervals.

G Our survey experiment and APSA's Principles and Guidance for Human Subjects Research

While we conducted our survey in 2019, our research adheres to the 2020 APSA Council Principles and Guidance for Human Subjects Research. The recruitment, informed consent and protection of human subjects was reviewed and approved by the University of [redacted]'s IRB, following federal guidelines ([redacted] IRB Study #00001530). The study relied on Amazon MTurk respondents; only people with MTurk account residing in the United States were able to participate. The platform requires workers to be at least 18 years old to complete the surveys. Adults who are unable to consent were excluded from the study. The recruitment posting described the project and provided a link to the survey for participants to take.

The landing page of the survey explained the nature of the study, the scope of the project and asked for informed consent to participate in the survey; participants who did not provide informed consent were not allowed to take the survey. The online survey was self-administered survey and dependent on the participants' voluntary participation. Participants were notified that participation was completely voluntary, that they could withdraw from survey at any time, that all of the responses were confidential and that the research team would make any possible effort to keep the confidentiality of participants. Participants were also informed that they could refuse to answer any question, and terminate the survey at any time. After collecting responses, answers to survey questions were kept confidential and all identifying information was removed; respondents were only identified by their MTurk ID which does not contain any personal identifying information.

The average respondent completed the survey in 5 minutes; each respondent received a payment of \$0.75 for participating in the project. The payment is equivalent to a \$9 hour, which was above the federal minimum wage for 2019. The project did not engage in deception; we presented hypothetical scenarios for them to consider their support or opposition to policy inter-

ventions. Given the nature of the hypothetical scenarios there was no foreseen risk of impacting political processes.