



ÉQUIPE DE RECHERCHE SUR L'UTILISATION
DES DONNÉES INDIVIDUELLES EN LIEN
AVEC LA THÉORIE ÉCONOMIQUE

Sous la co-tutelle de :
UPEC • UNIVERSITÉ PARIS-EST CRÉTEIL
UPEM • UNIVERSITÉ PARIS-EST MARNE-LA-VALLÉE

Series of ERUDITE Working Papers

N° 03-2020

Title

Are only men fighting trade wars?

Empirical evidence from the Temporary Trade Barriers (TTB) data

Author

Neha B. UPADHAYAY

ARE ONLY MEN FIGHTING TRADE WARS?

EMPIRICAL EVIDENCE FROM THE TEMPORARY TRADE BARRIERS (TTB) DATA

Neha B UPADHAYAY *

neha-bhardwaj.upadhayay@u-pec.fr

Abstract

Are states led by men more prone to trade conflicts when compared to states led by women?

There is consensus amongst researchers that protectionist policies in trade have far reaching, and mostly negative, impacts. While the effects of trade on women have been up for much debate, there is a clear lack of studies examining the role of women in design of trade policy and initiations of trade conflicts.

We stipulate that trade conflicts follow the trajectory of a strategy game wherein women leaders would be forced to signal trade conflict countermeasures in order to discourage actions from trade partners which may injure the domestic industry of the country they lead.

We build on the role of threat being a function of the gender of the leader of the country. Our argument is that threats from countries led by men (importers) could be considered more credible and hence the trade conflict raising action (from the exporter) is curtailed. On the other hand, threats from countries led by women are considered non-credible and hence the country ends up taking the countermeasure against a trading partner (to curtail or stop completely the conflict raising action like dumping or subsidies to exports).

Subsequently, we test empirically whether trade conflicts filed at the World Trade Organization (WTO) platform are affected by the gender of the head of government or important ministries like foreign affairs or finance. Our empirical results obtained from a panel data of 49 importers (of which 31 are low and middle income countries) and 102 trade partners over a 21 year period from 1998 to 2018 show that countries headed by women are *not* less likely to launch trade conflicts.

On the role of other women in office, we argue that the ability of women parliamentarians to negatively affect the decision to embark on trade conflicts increases as the percentage of women parliamentarians increase. In broad terms, we provide evidence that leaders are instrumental in shaping policy outcomes and when countries are led by women, the gendered roles take a back-seat with country interests coming to the forefront in case of women chief executives. On the contrary, women parliamentarians continue to exhibit a moderating effect on propensity of formal trade conflict initiations indicating that the level of office alters women's response to international policy issues. We also have evidence that democracies and governments elected on populist ideologies, whether left or right winged, have a higher propensity to file more formal trade conflicts.

Keywords Gender and trade conflicts · women's political participation · gender quotas

JEL classification: F14, F51, J16

*Doctoral Researcher at ERUDITE (Equipe de Recherche sur l'Utilisation des Données Individuelles en lien avec la Théorie Economique, EA N°437), Université Paris-Est

1 Introduction

Trade wars are not new.² By definition a trade war is an *economic conflict* which is a consequence of severely protectionist trade policies adopted by a state. While a trade war is not an *actual* war, countries have often used the pretext of *national security*³ to commence trade conflicts.

National leadership plays a consequential role in a country's decision to embark on conflicts with other countries (Dube and Harish, 2017). While there is a body of research which documents policy differences as a consequence of female leadership in the areas of armed conflict and defense spending (Caprioli, 2000; Koch and Fulton, 2011; Dube and Harish, 2017) and economic development (Chattopadhyay and Duflo, 2004) there is lack of attention to role of female leadership in international trade policy. Despite its importance⁴, there is a dearth of evidence whether countries behave differently in matters of trade conflicts under male or female leadership. As women make greater inroads into politics, their role in making a substantive difference to international trade policy outcomes remains unclear⁵.

In recent decades, women have been able to overcome barriers to entry in several fields, including politics, that have been considered male dominated. Empirical analysis shows that women and men in politics continue to be perceived differently in terms of their

ideologies, characteristics and policy expertise (Lawless, 2004). For instance, women are perceived as politically more liberal, and more competent on compassion issues such as education, programs for the poor, health-care, and the environment (Koch and Fulton, 2011). Men, on the other hand, have long held leadership roles and have come to define the style of leadership with which people are accustomed. Men are ascribed with agentic leadership⁶ characteristics with more assertive, controlling and confident tendencies (Eagly and Johannesen-Schmidt, 2001). Women leaders who have exhibited such agentic attributes, for example Indira Gandhi⁷, Golda Meir and Margaret Thatcher, have been associated with *male posturing* or behaving *like men* since they headed governments at a time when most other states were headed by men (Caprioli, 2000).

Koch and Fulton (2011) suggest that women are less likely than men (at mass level) to support use of force to solve international problems in US as well as other western democracies. They point out that research is inconclusive on the role of gender on policy issues at the elite level. They attribute the discrepant results in research partially to difference in research design. Caprioli (2000) finds growing number of Women in Parliament to have a detrimental effect on use of military force to resolve international disputes. On the other hand, Swers (2007) finds that women seek to overcome credibility challenges on national security issues by positively affecting the sponsorship of defence related bills. These mixed results warrant investigation on the political ideology of the Women in Parliament. We may also be led to believe that women may vote for conflict avoidance in the parliament (as expected because of their communal gender role), however, when the focus is on just one woman leader (the chief executive of the government), the decision is highly dependent on environment of national security and it is in this scenario that women and men behave no differently.

In order to gain insight into the relationship between women in office and matters of trade policy (specially propensity to engage in trade conflicts), we examine both **Woman Chief** of government as well as **Women in Parliament**. We believe that woman

²The earliest officially recorded trade wars date back to 1650s between the English and Dutch mostly fought to gain supremacy in the profits earned from new markets overseas. These were followed by the Opium Wars in mid-19th century, fought at a time when China was the biggest economy in the world maintaining a positive trade balance with its trade partners. During the Great Depression, the Smoot-Hawley Tariff Act (1930) was signed raising tariffs on several thousand imported products in the USA. More recently, the US has slapped China with numerous tariffs citing 'China's unfair trade practices' as a provocation (Lawrence, 2018).

³In the US-China trade conflict which commenced in early-2018, President Donald Trump has consistently used 'national security threat' as a reason to impose tariffs on steel and aluminium. Through a Presidential proclamation, Trump also halted the acquisition of Qualcomm (a US chip manufacturer) by Broadcom (a Singapore based company) citing a threat to US national security. In the past few years, several countries have used national security as a reason to invoke trade disputes, for e.g. Russia has cited national security in the dispute with Ukraine, Bahrain, the United Arab Emirates and Saudi Arabia have cited it in a diplomatic spat with Qatar.

⁴Globally, trade accounts for 57.8% of world GDP (2017) (WorldBank, 2018a)

⁵Not only trade policy, women's role in any kind of policy design remains unclear (Koch and Fulton, 2011)

⁶The words *agentic leadership* come from the concept of agency. This style of leadership is attributed to a person who is respected by subordinates (Eagly and Diekmann, 2000). The leader is more goal and task-oriented. In contrast, a *communal* leader has more nurturing role with communication, cooperation and affiliation as the main attributes (Jon, 2011)

⁷Yahya Khan, former president of Pakistan (1969-71) is believed to have said that Pakistan would have responded less violently against India in the Indo-Pak war of 1971 if India had a male leader.

heads of government, as well as the credibility of these leaders' threats, have received less empirical attention in literature on women's role in conflicts. We commence with two potential explanations of why a female leader may have higher propensity to start trade conflicts.

The first explanation suggests that women leaders may be perceived as easy targets who would not resist actions (from a counterpart trading country) leading to trade conflict. Not only this, their threats for invoking trade conflicts may be treated as incredible threats leading to uninhibited trade conflict attracting action (for example, dumping or subsidizing exports) from a trade partner. Consequentially, the woman leader would be left with no choice but to instigate a formal trade conflict or countermeasure, thereby inflicting more trade conflicts than their male counterparts.

The second explanation builds on the fact that female leaders may posit themselves as *tough* from the very beginning by initiating trade conflicts so as to prevent any future actions (by the counterpart country) leading to trade conflicts. Therefore, there may be an increase in trade conflicts when a woman comes to power as chief executive.

For our empirical analysis, we analyze the contingent protection measures instigated by 49⁸ WTO member countries between 1998 and 2018 (see Appendix for the list of countries). We find that presence of a **Woman Chief** increases the proclivity to engage in trade conflicts and formally invoke the provisions of contingent protection at the WTO forum. We also observe that increased percentage of **Women in Parliament** leads to an abatement of the chief's propensity of trade conflicts, irrespective of the chief being a male or female. We believe, this paper provides a framework to explain the role of women in office in international trade policy design and we offer evidence that gender should be incorporated into models of international trade conflicts.

This paper fits in the broader literature examining effects of female political leadership on public policies. However, we believe, this is a novel study, because it is the first paper to examine the role of women leaders in design of trade policy and their propensity to instigate or curtail trade conflicts. If we may classify trade disputes in the categories of conflicts, this paper contributes to the prolific literature on role of women leaders in conflicts. As a policy implication, we do

⁸WTO Data on contingent protection is available for 51 entities: 49 countries individually; and the Gulf Cooperation Council GCC and European Union (EU) as a group. For this study, we exclude the GCC and Taiwan due to unavailability of macroeconomic data)

not wish to make a claim that having more women as heads of state leads to more trade conflicts. In contrast, our goal is to refute the perception that women are ineffective leaders⁹. In the forthcoming sections we provide a discussion on actions initiating trade conflicts, the mechanism through which female leadership can affect trade conflicts, followed with an outline of the empirical strategy including data and results. In the last section we conclude.

2 Gender and trade policy

2.1 Trade conflicts- a prelude

The Uruguay Round of negotiations (1986-1994) concluded with the formation of the WTO on 1st January, 1995. 98% of world trade is under the aegis of the WTO. The WTO patronizes a multilateral trading system and provides a platform to 164 member countries to resolve trade related disagreements.

One of the result of the Uruguay Round was countries' commitment to reduce tariffs¹⁰. On the other hand, non-tariff measures, specially contingent protection measures¹¹, have been on the rise. A total of 5,725 cases of Anti-dumping and 541 cases of Countervailing duty measures have been initiated by WTO members between 1995 and 2018.¹²

⁹The Protestant Reformer John Knox claimed women are incapable to rule because "nature doth paint them forth to be weak, frail, feeble and foolish..." (Dube and Harish, 2017)

¹⁰Global average tariff rates have come down from 8.52% at the end of 1994 to 2.59% in 2017 (WorldBank, 2018a)

¹¹Measures implemented to counteract particular adverse effects of imports in the market of the importing country contingent upon the fulfilment of certain procedural and substantive requirements. These mainly constitute of Anti-dumping measures, countervailing duty measures and safeguards.

Anti-dumping duties- 'Dumping' occurs when the export price of a product is lower than what a company charges in its domestic market. Under the Anti-dumping agreement of the WTO (Article VI of the General Agreement on Tariffs and Trade 1994) importing countries can impose Anti-dumping duties on the imports of the product. This is contingent on the establishment of 'material injury' to the domestic industry.

Countervailing Duties (anti-subsidy duties)- These can be imposed by an importing countries contingent to the establishment of injury to domestic industry because of subsidy on exports by a foreign country.

¹²Until the early 2000s, the traditional users (USA, the EU, Australia, New Zealand and Canada, (Prusa, 2001), remained the highest users of contingent protection provisions of the WTO by the metric of number of cases filed. However, more recent studies (Feinberg, 2011; Finger et al.,

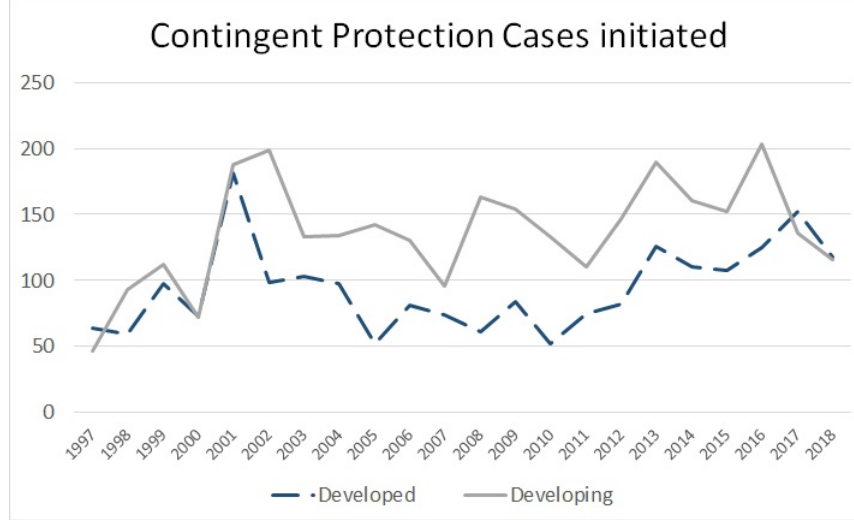


Figure 1: Year-wise contingent protection initiations (Anti-dumping (AD) and Countervailing Duty (CVD) shown here) by level of development of initiators

Author's calculation from the WTO database on non-tariff barriers (WTO, 2019b)

Several researchers have pointed out that amongst contingent protection measures, Anti-dumping is a particularly subtle trade policy that has become a *political economy problem* and is used more as protection rather than as a mechanism to curb unfair-trade (Tharakan and Waelbroeck, 2006; Nelson, 2006; Blonigen and Bown, 2003).

To conduct our analysis, we use the Anti-dumping and Countervailing measures initiated by reporting member countries as the start of a trade conflict. A trade conflict at the WTO can mark the beginning of a trade war because retaliation emerges as a potential consequence of filing a case¹³. In some cases, Anti-dumping and countervailing duties are met with

formal disputes raised at the Dispute Settlement Body (DSB) of the WTO¹⁴. Therefore, we model the start of a trade war with an event of filing a contingent protection case at the WTO.

2.2 A theoretical model of Gender and Trade Policy

In this study, our analytical interest covers the role of women's representation in politics and international trade policy. We develop a theoretical framework to uncover this relationship.

2001; James, 2008) find that new users (prominently India, Mexico, Brazil, South Africa and Argentina (Miranda et al., 1998; Zanardi, 2004) have jumped on the contingent protection bandwagon and countries with strong import growth are in greatest need of an escape valve for selected industries, making them reliant on contingent protection routes like Anti-dumping and Countervailing duties. The number of cases filed for contingent protection grew rapidly in the second half of the 1990s and have fluctuated at lower levels since early 2000s (Figure 1).

¹³Feinberg and Reynolds (2006) use data pertaining to 1996-2003 and find strong evidence that a significant share of Anti-dumping filings world-wide can be interpreted as retaliation. In their more recent study Feinberg and Reynolds (2018) find statistical evidence that countries are more likely to file a WTO dispute when they have also filed a retaliatory anti-dumping petition, suggesting that these two strategies may be complementary. Retaliation has been found to be a significant determinant of protectionist activities by several other researchers like Nelson (2006), Blonigen and Bown (2003) and Knetter and Prusa (2003).

Caprioli (2000) argues that gender equality would effect policy decision-making and outcomes because women are perceived to be less belligerent than men. However, when it comes to high office positions which are perceived as more masculinized, women may present themselves as more masculine in order to tackle the gender stereotype and gain more credibility of actions.

However, at the parliament level, women may behave in line with the gender stereotype, thus indicating that credibility challenge for women proliferates as the leadership level grows (Koch and Fulton, 2011). We see support to this argument in Figure 2 and Figure 3, where, prima facie, we see a negative corre-

¹⁴Since 1995, over 500 disputes have been brought to the WTO and over 350 rulings have been issued (WTO, 2019a).

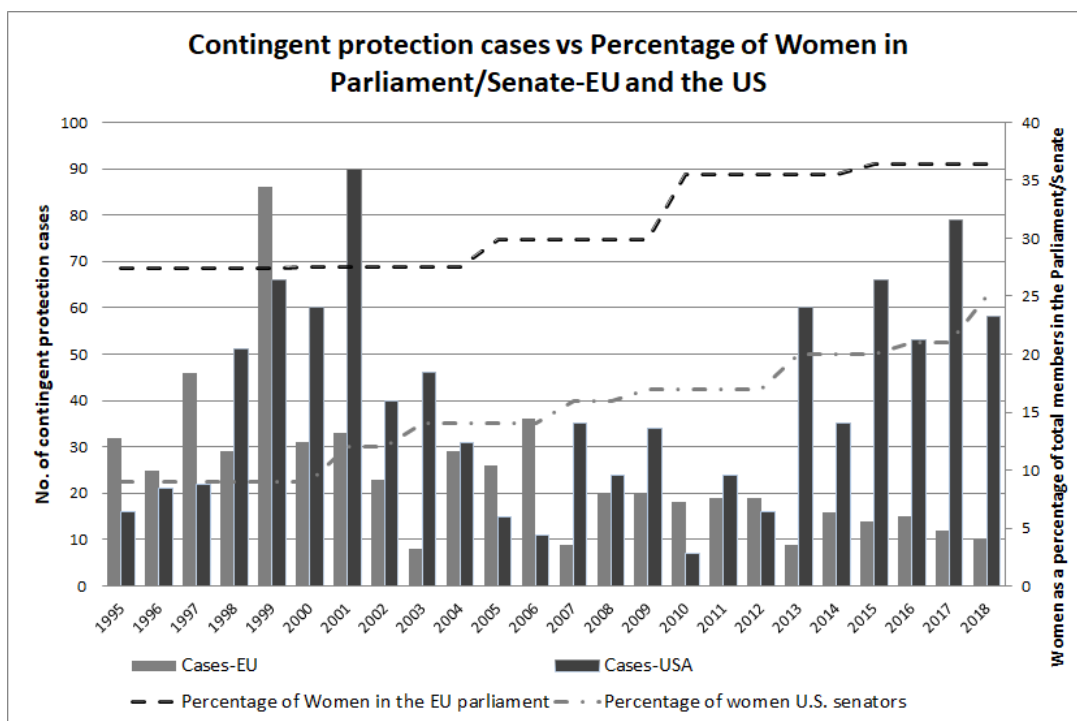


Figure 2: Non-tariff contingent protection initiations (Anti-dumping (AD) and Countervailing Duty (CVD) shown here) in the US and EU (two of the traditional users) vs. Percentage of women in the respective parliaments

Author's calculation from the Temporary Trade Barriers Database (Bown, 2016) and Inter Parliamentary Union (IPU) data on women parliamentarians

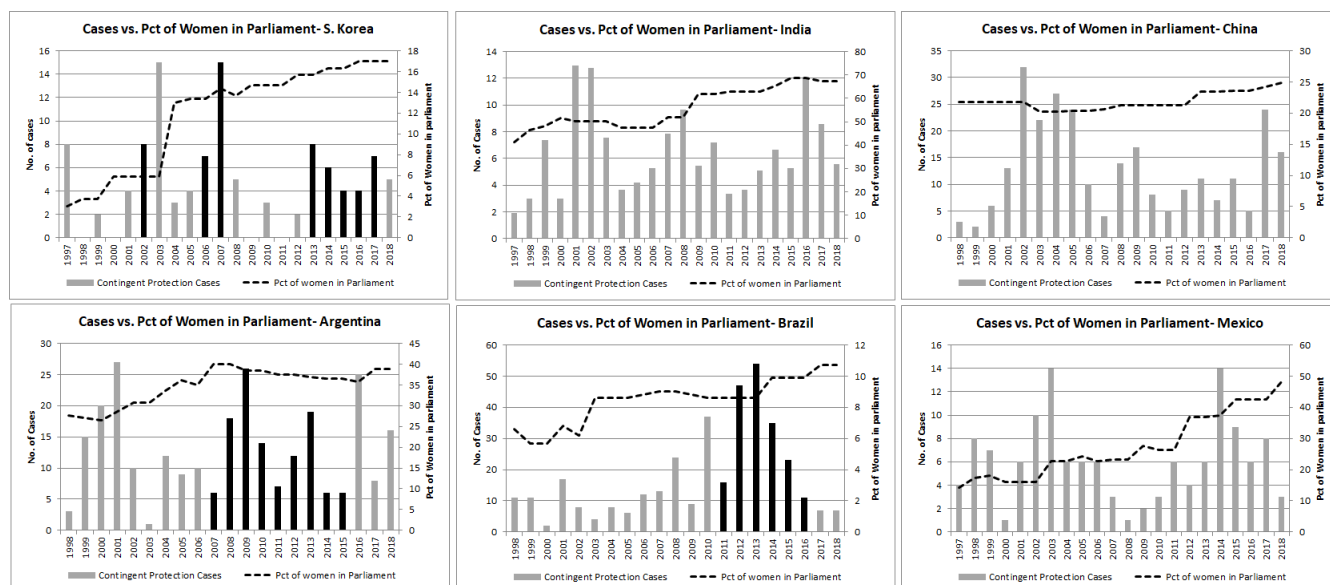


Figure 3: Non-tariff contingent protection initiations (Anti-dumping (AD) and Countervailing Duty (CVD) shown here) in the prominent new users in Asia and South America vs. Percentage of women in the respective parliaments

Author's calculation from the Temporary Trade Barriers Database (Bown, 2016) and Inter Parliamentary Union (IPU) data on women parliamentarians. Dark bars indicate the years in which a woman was Chief Executive of the country.

lation¹⁵ between the number of cases filed for contingent protection and the increasing number of women parliamentarians.

However, our analytical interest, more prominently, concerns the role of **Woman Chief executive** in international trade policy. Therefore, we propose the following hypotheses based on our expectation that a woman chief executive is likely to affect the propensity of starting trade conflicts positively in order to combat the gender stereotypes. Regarding increased numbers of **Women in Parliament** we expect an inverse relationship with the propensity of trade conflicts, holding all else equal.

H1 (The aggression hypothesis for woman chief executive): Countries led by a woman (head of government), are more likely to initiate official trade conflicts and trade wars with trading partners.

H2 (The cooperation hypothesis for women in parliament): Countries with more women in parliament, are more likely to cooperate with trade partners and resolve conflicts instead of embarking on trade wars.

2.2.1 Perceived weakness related to gender

Historically the legitimacy of women leaders has been questioned on several grounds, most prominent of them being, their inability to lead armed forces into battle (Dube and Harish, 2017). The link between femininity and perceived weakness suggests that women executives may be more aggressive in their foreign policy decisions to signal strength to opposing male leaders who may otherwise regard them weak or less equal. Also, when compared to their female counterparts in the parliament, women heads of state may be motivated by a hawkish behaviour in trade policy to overcome gender stereotypes which depict them as weak and passive (Koch and Fulton, 2011).

2.2.2 Role of Threat

By using data over 15th-20th century (Dube and Harish, 2017) show that polities led by women were more likely to engage in wars than polities led by kings. They stipulate that queens fought more to *signal* a sign of strength and defence. We stipulate, in the global trade arena, in order to *prove* themselves,

women leaders have to make their threats look credible and this can happen only if a formal countermeasure is taken to deter the trade partner from engaging in conflict inducing action (like dumping or subsidies to exports).

In the realms of contingent protection, (Bagchi and Narayanan, 2018) use a sequential game to show that a credible threat of Anti-dumping restricts dumping because a threat of anti-dumping measure can alter the behaviour of exporters who are practicing dumping. (Zhao et al., 2018) use a mixed strategy game of Dumping and Anti-dumping assigning a probability p to the event of a countermeasure (against dumping) being undertaken by an importing nation. In this study, we postulate that this probability p is in fact the probability of a threat failing because only if a threat would fail it would actualize as a countermeasure.

In other words,

p =probability of taking a countermeasure(CM)= probability of threat failing, and;

$(1-p)$ = probability of not taking a countermeasure(NCM)= probability of threat succeeding.

The payoff matrix for the mixed strategy game is described in Table 1¹⁶.

We can observe that for the Exporter country E, the anticipated payoffs are as follows:

- If dumping continues:

¹⁶Notations adapted from (Zhao et al., 2018) : Exporter Country (E), Importer country (I)

S_{export} = Trading revenue of the exporting country (E) generated from dumping its product in the importing country (I).

S_{import} = Trading revenue of the importing country (I) generated from its domestic market when the exporting country (E) does not dump its product.

When $S_{export}=0$, S_{import} reaches its maximum.

The revenue of the exporter country (E), i.e. S_{export} , from the importing country (I) through dumping its product is in fact a portion of the expected maximum revenue of the importing country (I) - S_{import} .

Therefore, the condition $S_{export} \leq S_{import}$ always holds.

C = Cost incurred by the Importing country (I) to take any countermeasure(s) against the dumping inflicted by the Exporter Country (E).

R_0 = Cost to the exporting country (E), for designing, producing and exporting the product when the importing country (I) does not take countermeasures(s).

R_1 = Cost to the exporting country, for designing, producing and exporting the product when the importing country takes countermeasure(s).

¹⁵Obviously, these graphs are of descriptive nature and not sufficient evidence to establish a causal link between the increase of women leaders and reduction of trade conflicts.

Table 1: Payoff Matrix- Mixed Strategy Game

		Country I	
Country E	Dump	Countermeasure / CM (p)	No Countermeasure / NCM (1-p)
		I: $S_{import}-C-S_{export}$, E: $S_{export}-R_1$	I: $S_{import}-S_{export}$, E: $S_{export}-R_0$
	No Dump	I: $S_{import}-C$,E: 0	I: S_{import} , E: 0

– $S_{export}-R_1$, with probability p

– $S_{import} - p * C$

– $S_{export}-R_0$, with probability (1-p)

- If dumping stops:

– Zero

Therefore, for the Exporter, the beneficial strategy is to Dump. In this case, the payoff conditions can be written as:

$$p(S_{export} - R_1) + (1 - p)(S_{export} - R_0) > 0$$

from which we have,

$$p < \frac{S_{export} - R_1}{R_1 - R_0}$$

This analysis leads to the following practical results:

- Ceteris paribus, probability p and S_{export} are directly proportional to each other
- Ceteris paribus, probability p and R_1 are inversely proportional to each other

Every action that Importer I takes to protect its domestic industry will lead to increased costs for the exporter country E. In the case when countermeasures are taken and Dumping stops, the expected revenue for I will be $S_{import}-p*C$.

Pursuing the existing belief system of a country being led by a male leader having made a more credible threat than that by a country led by a female leader, we have the following two scenarios:

- Expected revenue of the importer nation led by male ($p_{male} \rightarrow 0$)

– S_{import}

- Expected revenue of the importer nation led by female ($p_{female} \rightarrow 1$)

In light of the above, we may argue that countries with female heads of state may earn lesser revenues due to the additional cost of taking countermeasures. This is, however, more than what they would earn if the dumping continued to take place. Therefore, to signal a credible threat of action against an exporter who poses a material injury to domestic industry of the importer, the woman leader of the importing nation has to engage in countermeasures to ensure revenue $S_{import}-p*C$. As the probability of threat succeeding increases, p becomes smaller and hence the revenue increases. We must bear in mind that the credibility of a threat being a function of the gender of the leader of the country is purely based on beliefs about gender roles.

From the aforesaid analysis, we conclude, countries with female heads of state are likely to earn lesser revenues due to their increased investment in taking countermeasures in order to make their threats look plausible. We may argue that as time passes and a woman chief's credibility is established, the necessity to take countermeasures dips. In other words, as the tenure of a woman leader increases, the probability p reduces and consequently revenues also increase.

2.3 Alternative Hypotheses

It is not impossible that some alternative explanations may account for a relationship between gender of high office-holders and foreign policy, more specifically, trade policy. Women's gains in representation may be associated with development of institutions which is also linked with capabilities to engage in trade conflicts as well as adopt retaliation as a tool to protect domestic industry. Increased women in parliament or election of a woman chief executive is not caused by a rise in protectionism, rather, both are consequences of shifts in societal values and institutional capabilities.

A possible limitation of our study is that we focus on variations between democracies and autocracies

and not on variations within each regime type. We also perceive a possible bias in the results due to the absence of some key variables regarding the actual power of women chiefs. We anticipate the bias to affect our results positively as we might be inadvertently missing the checks and balances that even Presidents of countries have to encounter before making decisions on policy. The power of the constitution is difficult to measure and hence we expect our results to be affected by some omitted metrics. To address this possibility, we include variables related to government systems and parliamentary structure. We also employ instruments like Gender Quotas to comprehend better the institutional context of the country and its role in the increased presence and participation of women office holders.

3 Empirical Analysis

We estimate empirically to what extent the presence of a woman chief executive or higher percentage of women in parliament can affect the proclivity to initiate trade conflicts at a formal forum like the WTO. Our econometric model is guided by the pioneering work of gravity equation for trade by Tinbergen (1962) which translates Newton's Law of universal gravitation to economics to analyse trade between nations as a function of their economic masses and inversely proportional to the distance between them. In our case, we develop a general model of our empirical estimation which is constructed as below:

$$Cases_{i,e,t} = \beta_0 + \beta_1 * Initiator_{i,t} + \beta_2 * Target_{e,t} + \beta_3 * Pair_{i,e,t} + \eta_i + \nu_e + \phi_t + \epsilon_{i,e,t} \quad (1)$$

Here, we assume that the contingent protection cases initiated by an initiator (or importer) country against a target (or exporter) country are related to vectors of the initiator country, the target country, as well as variables related to the Pair of countries. $\epsilon_{i,e,t}$ is the error term. We control for time-specific factors by including dummy variables for each year and we also include country specific effects. In our regressions, standard errors are clustered across country pairs and robust estimators are used to control for the existing heteroskedasticity.

Our data constitute of a balanced panel composed of 49 importer countries (i) that have used a contingent protection provision of the WTO against 102 exporter trade partner countries (e) that are members of the WTO. The period for this study is 1998-2018 i.e.a 21

year period¹⁷. The list of countries used in empirical analysis is given in Appendix-A.

We examine the relationship between gender and trade conflicts using data from the WTO and the Temporary Trade Barriers Database (TTBD) data which consists of a dis-aggregated listing of cases filed by the importer (reporter) against an exporter. The dependent variables of our analytical interest is the number of contingent protection cases filed at the WTO by an importing nation (i) against an exporter (e). As explained before, this variable serves as a proxy for start of trade conflict. We call this measure **Cases**.

Our first primary explanatory variable, **Woman Chief** is a dummy taking a value 1 when the chief executive of the government is a woman. Data on national leaders is obtained from *Archigos database* (Goemans et al., 2006) which we have further updated for years and countries till 2018. Wherever data was not available or missing, we employed self research of respective government ministry websites. The other primary predictor of interest is **Women in Parliament** which is the percentage of women in the parliament¹⁸ of the importer country in the year that it launched a contingent protection case against an exporter. This data is obtained from the World Bank.

While our hypothesis 1 focuses on the role of **Woman Chief** executive on trade policy decisions, we also examine the role of key ministerial portfolios¹⁹ in the trade policy decision. We include two cabinet posts in our analysis, viz. **Woman Minister of Finance** and **Woman Minister of Foreign Affairs**. We expect a negative relationship between woman foreign affairs minister and tendency for trade conflict because in most countries the ministry of foreign af-

¹⁷While the data on Contingent protection measures initiated by importers is available from much before, we use the period of 1998-2018 because data pertaining to percentage of women in parliaments is available 1997 onwards from the World Bank which in turn sources data from the Inter-Parliamentary Union (IPU) (www.ipu.org).

¹⁸24 of the 49 initiator/importer countries in our sample have a unicameral structure of parliament. In countries with two houses in parliament, We focus on the percentage of women in the lower house. In the upper houses, members can be appointed, elected or nominated, while in the lower houses the seats are gained almost always through elections. The ability of upper houses to affect legislation and direct policy formulation varies considerably by country. Therefore, for the purpose of our analysis, we consider the percentage of women in lower houses as a better metric.

¹⁹This is in line with the approach of Koch and Fulton (2011) who include Minister of Defence and Minister of Foreign Affairs to assess the effect of female leadership on defence spending.

fair is responsible for diplomacy and ensuring smooth multilateral relationships. Ministers of foreign affairs usually travel frequently and hold bilateral or multilateral meetings with counterparts at international fora and global summits. We believe that by the very diplomatic nature of this ministry, a woman foreign affairs minister will be inclined to act more cooperative and facilitate peaceful resolution which is also a believed attribute of the woman's gender.

Around the world, normally a finance minister portfolio involves treasury, finance, economic affairs, and in some cases also the monetary policy. Since trade and protectionist measures are closely related with economic condition of the country (Blonigen and Prusa, 2001; Feinberg, 1989; Niels and Francois, 2006) we have reason to argue that the effect of a woman finance minister will be contingent on the prevailing economic conditions of the country.

When it comes to the regime of the country, researchers have found conflicting evidence on whether democracies aid the cause of free trade. Democracy has had contrasting results in rich Europe and the poorer new economies. As the power transfers from a selected few elite to the wider population by the virtue of democratization, liberal trade policies would be embraced in countries where workers gain from free trade and protectionism rises in countries where workers benefit from quotas (O'Rourke and Taylor, 2006). To address the nebulous effect of regime type on the trade policy decisions, we include a measure of democracy in the form of a dummy variable called **Democracy** which takes the value of 1 for countries which are democracies and 0 for countries which were autocracies in the year of study. This data is obtained from an updated dataset on political regimes by (Anckar and Fredriksson, 2018).

To understand the effects of divergent constitutional arrangements on power distribution and policy making, we include a control **Government System** in our analysis. Like (Koch and Fulton, 2011) and (Franceschet, 2011), we argue that women's role in political policy hinges on the type of legislative or parliamentary system in the country. (Linz, 1990) in his seminal work warns of the implications of presidentialism, suggesting that countries with a presidential form of government are at higher odds of giving up the democratic system of government. He also posits that while it is not a guarantee that parliamentary government systems never experience grave crisis or breakdown, they are, to a certain degree, more flexible and conducive to the establishment of democracy. More recent studies have shown that presidential government regimes are routinely associated with less favorable outcomes than parliamentary government regimes: slower output growth, higher and

more volatile inflation and greater income inequality (McManus and Ozkan, 2018). Moreover, (Blonigen and Prusa, 2001) indicate that changes in macroeconomic variables, such as exchange rate and GDP, can affect trade which in turn can affect a government's decision to file Anti-dumping cases. Therefore, we may expect a Presidential form of government more prone to initiating trade conflicts in an effort to protect domestic industry. However, we can also argue that in a Presidential government system, the power of the leader is much more visible to trade partners. Exporters may be deterred from engaging in trade conflict behaviour as the threat of a countermeasure can be perceived as more credible since the President is *in-charge* of the government's decisions. In this scenario, the trade conflict measures may reduce as the trade partners may be reluctant to engage in trade conflict from the very beginning.

In case of **Semi-presidentialism**, there is no consensus on a singular definition amongst researchers (Anckar and Fredriksson, 2018). However, for the purpose of this study, we consider semi-presidentialism (e.g. China, South Africa, Vietnam) as governments where the President (who acts as head of government) is elected by the national assembly. This system differs from Parliamentary system, where the president's office is mostly ceremonial and non-executive in nature (e.g. Australia, Canada, India, Israel, New Zealand, Pakistan); and from the Presidential system where the President is responsible for the legislature (e.g. the USA, Argentina, Russia, Venezuela). According to (Duverger, 1980), in semi-presidential systems, the president possesses considerable powers and is elected by popular vote. We assign 0 to Presidential, 1 to Semi-Presidential and 2 to Parliamentary government systems. In light of these amorphous definitions, we commence with an agnostic view about the sign of the variable **Government System** in the analysis. Our data source for this variable is *Database of Political Institutions* by (Scartascini et al., 2018).

In context of the institutional structures in a country, we also include a control for the **Parliament Structure** i.e. a dummy whether the country has a unicameral (coded 0) or a bicameral (coded 1) parliament. The choice of a parliamentary system seems to be governed by history, context and parliamentary tradition in each country rather than population or size. For example, China which is a large and populous country has a unicameral parliament structure while small states like Jamaica, Jordan, Trinidad & Tobago have bicameral parliaments. Several researchers have considered and questioned the purported advantages of bicameralism like, formal representation of diverse constituencies, restriction on reckless passing of laws, provide enhanced balance of power to the chief ex-

ecutives as well as legislature (Waldron, 2012). On the other hand, Vatter (2005) uses data on OECD economies between 1971-1996 to show that none of the advantages of bicameralism that classical theory claims can be confirmed. He calls it the *veto power* on fiscal and economic policy reforms and refutes any claims of bicameralism providing electoral success to women or enhancing stability in the political discourse. Considering the significant differences that exist on the very structure as well as effects of bicameralism on politics, we include this as a control variable to uncover the role of single or two chambers on the propensity to initiate trade conflict. Our initial belief about this variable is that a bicameral parliament structure will have a negative effect on a leader's propensity to instigate trade conflict actions due to a diffusion of the powers of the leader.

Franceschet (2011) suggests that any relationship among attitudes, activity, and outcomes is highly contingent rather than automatic. The context of political environment has significant bearing on the actions of political agents like the chief executive or parliamentarians. In recent times, policy makers have focused on reforms that alleviate poverty and reduce inequality. Using the Western European case, Waal and Koster (2018) assert that populist parties, whether left wing or right wing, oppose trade openness. In our case too, it is important to uncover the role of political ideology on trade policy determination. In order to capture the effect of political context, we include a measure of party **Ideology** of the woman chief to address whether the political orientation of the woman leader exerts an influence on the policy decision.²⁰ This data is again obtained from Scartascini et al. (2018) and coded as a categorical variable (Right-1, Centre-2, Left-3).

In line with extant literature, we include controls for determinants of contingent protection measures including **GDP growth rate** of the initiator as well as target country for economic performance, **Bilateral Imports** between the trade partners, **Bilateral Real Exchange Rate** and, **Retaliation** which measures whether the (now) initiator country has targeted the (now) target country in the past year through contingent protection measures.

Data on GDP growth rate is obtained from the World Bank datasets (WorldBank, 2018b) and on bilateral imports is obtained from International Monetary Fund's Direction of Trade Statistics (DOTS) (IMF, 2019).

The variable Retaliation is constructed from the Temporary Trade Barriers Database (Bown, 2016).

Summary statistics on all our variables of interest are presented in Appendix.

4 Results

4.1 Baseline Results

We first carry out the analysis on the effect of female leadership on the propensity to instigate contingent protection by estimating the Equation 1 with **Woman Chief** as the main dependent variable and a step-wise increment of controls in terms of women parliamentarians, other women ministers, type of regime in the country, as well as macro economic controls which are determinants of contingent protection. Table 2 depicts the results²¹ on the influence of women in politics on trade conflicts initiated. We lag all the independent variables by one year in view of the non-contemporaneous nature of conflicts with the independent variables.

Our first hypothesis is that a **Woman Chief Executive** leads to increased conflicts in the realm of international trade. The results of baseline model confirm this hypothesis. The value 0.140 is the estimated negative binomial regression coefficient comparing female leaders to male leaders, given the other variables are held constant in the model. In other words, the difference in the logs of expected counts of **Cases** is expected to be 0.140 unit higher for **Woman Chief** executive as compared to male leaders, while holding the other variables constant in the model.

Women in Parliament is not statistically significant at conventional levels of significance, however, does bear the expected negative sign on the coefficient. As expected, **Woman Minister of Foreign Affairs** has a significant and negative effect on the case filing intensity. In the baseline, **Democracy** is statically significant at the 1% level and bears a positive coefficient indicating that countries that are democracies have a higher inclination to start trade conflicts which may be an effect of the realization of threats that masses may feel due to increased free trade and thereby making the initiation of a protectionist cases necessary.

²⁰We are constrained by the availability of party data for the women in parliament and hence the Party **Ideology** measure is limited to the first explanatory variable of interest i.e. Woman Chief.

²¹Since our dependent variable is number of cases, we use count models for analysis. We use the negative binomial statistical model because of its ability to allow for over-dispersion.

Table 2: **Baseline Results: The impact of woman leadership on contingent protection, 1998-2018**

Variables	(1)	(2)	(3)
Woman Chief	0.216*** (0.0567)	0.168*** (0.0575)	0.140** (0.0605)
Women in Parliament (Pct)	-0.537 (0.454)	-0.549 (0.454)	-0.192 (0.406)
Woman Minister of Foreign Affairs		-0.199*** (0.0604)	-0.200*** (0.0569)
Woman Minister of Finance		0.0839 (0.105)	0.109 (0.107)
Democracy		0.329*** (0.092)	0.605*** (0.0986)
GDP Growth Rate (Initiator)			0.0402*** (0.008)
GDP Growth Rate (Target)			0.0034 (0.00601)
log Bilateral Imports			0.586*** (0.0173)
log Bilateral Real Effective Ex Rate			0.453*** (0.0891)
Retaliation			0.0244* (0.0146)
Constant	0.248* (0.136)	0.00934 (0.155)	-13.05*** (0.392)
Observations	97,301	97,301	73,083
Number of Pair	4,805	4,805	4,131
Adjusted R ²	0.29	0.29	0.16
Country & Year Dummies	Y	Y	Y

Robust standard errors in parentheses

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

In the baseline model, we see significant and positive coefficients on **GDP growth rate** of the initiator, on **Bilateral Imports**, **Bilateral Real Exchange Rate** and **Retaliation**. Regarding macroeconomic performance of the country (**GDP growth rate**) there are two schools of thought. On one hand there are studies that countries that are in a bad macroeconomic condition would resort to contingent protection case filings in order to boost domestic industry (Knetter and Prusa, 2003; Miyagiwa et al., 2016; Aggarwal, 2004). On the other hand, Bown and Crowley (2007) suggest that growth in GDP leads to an increase in domestic demand which may sequentially raise the levels of imports. Our sample includes 31 developing countries some of which have experienced high rates of GDP growth and also a contemporaneous rise in contingent protection activity (Feinberg, 2011). In view of this, we expect GDP growth to positively affect contingent protection case filing, which is corroborated by our results.

Research on the link between **Bilateral Real Effective Exchange Rate** and need for protection has shown a positive correlation between the two (Stallings, 1993; Knetter and Prusa, 2003; Irwin, 2005) due to the rising imports as domestic currency appreciates. Our results are consistent with this finding and we observe a positive and significant relationship be-

tween Bilateral Real Exchange Rate and trade conflict cases.

Feinberg and Reynolds (2018, 2006) find strong evidence that retaliation was a significant motive in explaining the rise of Anti-dumping filings, and that countries are more likely to file a WTO dispute when they have also filed a retaliatory Anti-dumping petition, suggesting that these two strategies may be complementary. We also find positive and significant coefficients on the variable of **Retaliation** in our analysis indicating that protection begets protection.

4.2 Additional controls and interactions of key variables

Table 3 provides the results using augmented controls (Column 1) and interactions (Column 2).

The results suggest that the effect of **Woman Chief Executive** on the proclivity to instigate contingent protection remains positive and statistically significant. Increasing percentage of **Women in Parliament** has a negative and statistically significant effect on the trade conflicts.

As stipulated before, **Woman Minister of Foreign Affairs** has a negative effect on the proclivity of trade conflict. This is in line with our expectation as we anticipate a negative effect on propensity to engage in trade conflict due to the highly diplomatic nature of the office of Foreign Affairs. The difference in the logs of expected counts is expected to be 0.206 unit lower for female Minister of Foreign Affairs as compared to males, while holding the other variables constant in the model. The presence of a female **Woman Minister of Finance** has a positive and statistically significant coefficient giving support to our hypothesis that cabinet portfolios with close involvement in economic health of the country would positively influence protectionist policies.

We observe from our results that when compared with Presidential **Government systems**, Semi-Presidential and Parliamentary government systems are more inclined to make trade conflict. We may be inclined to believe that in Parliamentary government systems, the chief of government as well as members of parliament, who are elected by popular vote, would have a higher tendency to 'keep their promise' to the electorate and adopt more protectionist policies by engaging in trade conflicts. In the Semi-Presidential government system, this tendency could be lowered because of divided power between the President and the executive government.

As in the baseline results, in this extended regression analysis too, the macroeconomic control variables retain the sign and significance.

In the analysis, we include **Interactions** model (Column 2 of Table 3) to examine the effect of a variable when the other variable involved in the interaction is zero. This is called the conditional effect and we test this for interactions between **Woman Chief** and other controls as well as **Women in Parliament** and other controls. First, we discuss the interactions between **Woman Chief** and **Women in Parliament**, **Government System**, **Parliament Structure** and **Ideology** of the chief.

The negative, albeit, statistically insignificant interaction term **Woman Chief x Women in Parliament** shows that the effect of female chief executives could be moderated by the higher proportion of women in Parliament. To better interpret this interaction, in Figure 4 we plot the predicted values of trade conflicts varying **Women in Parliament** and **Women Chief**, holding all other variables at mean (for continuous variables) and at median (for categorical variables). While we observe no significant change in the difference of case filing between countries that have a male or female leader, we do see that in both

cases, the number of cases filed drop as the women in parliament increase.²²

The next interaction is between **Woman Chief** and **Government System** where we observe that with respect to the reference case of a Presidential Government System, the Semi-Presidential government system exhibits a higher proclivity of protectionist measures. In the case of Parliamentary systems also we see a net positive effect of the interaction (combined sum of coefficients is positive and significant 1.102) which indicates that conditional to the presence of a parliamentary system of government, women chiefs have a higher tendency of protectionist policy. This effect is replicated for the interaction between woman chief executive and the structure of parliament. We again observe a net positive and significant effect of bicameral assembly on the higher propensity of woman leader to instigate contingent protection.

In terms of Party **Ideology**, we see that when compared to right-oriented governments, left-oriented government have higher propensity to initiate trade conflicts. This is in line with the study on the partisanship of governments and their trade policies by Dutt and Mitra (2005). However, they also point out that this proclivity to protection depends on the type of country: In capital rich countries, left-oriented governments will be more protectionist than right wing governments, however, they will be less protectionist in countries with more labour force. In case of the interactions between **Woman Chief x Ideology (Center)** the combined coefficients are negative and significant indicating that on comparing with left-winged governments, women chiefs in Centre winged governments engage in less trade conflicts in terms of the difference in logs of expected number of conflicts or **Cases**. Waal and Koster (2018) provide several examples of Parties in Europe and the US which have vociferously opposed free trade promising a shield to the 'common man' and reverse the effects of agreements made in so-called 'elite institutions' which pose a threat to national cultures and sovereignty. However, it is still not clear whether the support for protectionism in party ideologies is a manifestation of populist electorate or an actual protection of domestic industries on substantial material injury.²³

²²When the percentage of women in parliament is about 40%, the number of contingent protection cases drop by 9% and 13% when the chief executives are men and women respectively. This supports our second hypothesis that more women in parliament have a negative effect on trade conflicts, however, our results do not achieve conventional levels of statistical significance.

²³Article III of the Anti-dumping Agreement of WTO defines material injury as injury to domestic industry caused by dumped imports. Material injury could manifest as material injury itself, threat of material injury, or

Table 3: **Additional controls and Interaction Results: The impact of woman leadership on contingent protection, 1998-2018**

Variables	(1) (Other controls)	(2) (With interactions)
Woman Chief	0.117* (0.0607)	1.167*** (0.249)
Women in Parliament (Pct)	-0.500 (0.420)	-2.958*** (0.851)
Woman Chief x Women in Parliament		-0.409 (0.530)
Woman Minister of Foreign Affairs	-0.228*** (0.0570)	-0.206*** (0.0500)
Woman Minister of Finance	0.178 (0.108)	0.198* (0.101)
Democracy	0.557*** (0.101)	0.536*** (0.100)
Government System (Semi Pres)	0.222* (0.117)	0.355** (0.143)
Government System (Parliamentary)	0.0805 (0.0887)	0.634*** (0.165)
Woman Chief x Government System (Semi Pres)		0.0786 (0.382)
Woman Chief x Government System (Parliamentary)		-0.699*** (0.117)
Bicameral Parliament	0.569*** (0.0920)	-0.131 (0.171)
Woman Chief x Bicameral Parliament		-0.668*** (0.209)
Women in Parliament x Bicameral Parliament		5.023*** (0.853)
Women in Parliament x Government System		-1.125*** (0.436)
Woman Chief's Ideology (Centre)		0.0744 (0.0763)
Woman Chief's Ideology (Left)		0.125** (0.0569)
Woman Chief x Ideology (Centre)		-1.286*** (0.277)
Woman Chief x Ideology (Right)		-0.195 (0.204)
GDP growth rate (Initiator)	0.0446*** (0.00821)	0.0381*** (0.00740)
GDP growth rate (Target)	0.00440 (0.00591)	0.0107* (0.00581)
log Bilateral Imports	0.570*** (0.0174)	0.601*** (0.0182)
log Bilateral Real Effective Ex Rate	0.444*** (0.0893)	0.480*** (0.0875)
Retaliation	0.0263* (0.0146)	0.0261* (0.0144)
Constant	-13.20*** (0.391)	-16.06*** (0.409)
Observations	73,083	70,788
Pair of Countries	4,131	4,037
Adjusted R ²	0.12	0.10

Robust standard errors in parentheses

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

To answer the question whether the aforesaid relationship holds across all values of **Women in Parliament**, we plot the effect of Party **Ideology** across values of percentage of **Women in Parliament**. From Figure 5 we observe that in all cases except governments that are left aligned and led by a male leader,

material retardation of the establishment of a domestic industry.

a higher percentage of women in parliament has an attenuating effect on trade conflicts.

Turning to the interactions between **Women in Parliament** with **Parliament Structure** and **Government System** we see the following: the combined sum of the negative coefficient for **Women in Parliament** and the positive coefficient of **Women in Parliament x Bicameral Structure** is significant and positive demonstrating that higher percentages of women parliamentarians in two-house systems affect the intensity of protectionist case filings positively. With this result we may conclude that women in parliament in the lower houses (bicameral structure) who are directly elected, it becomes crucial to engage with the electorate through popular policies like protectionism. With regard to the **Women in Parliament x Government System** interaction we see that the combined coefficient is negative and significant indicating higher percentages of women parliamentarians in Semi-Presidential and Parliamentary forms of government aid in the lowering of protectionist case filings.

4.3 Endogeneity Concerns

The issue of reverse causal link between diplomatic conflicts and trade is evoked by Glick and Taylor (2010) in case of trade and military conflicts, and by Fuchs and Klann (2013) in case of trade with China and visits of the Dalai Lama to the trade partners of China. The precise nature of the causal link is unclear. In our case, we experience an analogous situation with our main variables of interest i.e. Trade conflict **Cases** and the presence of a **Woman Chief** and **Women in Parliament** in the following manner: Our first hypothesis is that having a woman head of country leads to higher trade conflicts with partner trading nations. Our second hypothesis is that having more women in parliament leads to a reduction in the propensity to instigate trade conflicts. But might there be an alternative explanation for our results? For instance, an importing nations increased institutional capabilities and better economic growth. While Lawless (2004) shows that the willingness to elect women drops when the political climate is dominated by foreign policy and military concerns, Koch and Fulton (2011) find no significant evidence on the ability of women to gain office when national security is under threat. With this mixed evidence, we are not in a position to say whether women are elected only in 'good times', however, we can argue that countries where women are elected in higher numbers could be better positioned with institutional capabilities to undertake trade disputes at international level.

Another perspective to support the argument that more protectionist nations could vote for women in higher office is that most cases of protectionist measures arise when workers (mostly low skilled) feel threatened by the outcomes of globalization or free trade. In this scenario, the leaders voted into office are under pressure to 'fulfill their promise' of opposing free trade (Waal and Koster, 2018). A large chunk of low skilled labour constitutes of women. While there is mixed evidence that more women vote for women candidates (Campbell and Heath, 2017), we may play devil's advocate and argue that countries where low skilled labour is abundant vote for more women.

To address this dichotomy, we employ the Instrumental Variable (IV) technique to tackle the potential endogeneity of the presence of a woman head of government²⁴ or increased percentages of women in parliament. Identification of an appropriate instrument becomes crucial at this stage. The instrumental variable must explain the presence of a woman head of government, however, be uncorrelated with the error term of the regression analysis. In other words, the instrument must adhere to the exclusion restriction which is that the instrument should not affect the instigation of a contingent trade protection measure **Cases** through channels other than the potential endogenous variable, i.e. the presence of a **Woman Chief** or increased numbers of **Women in Parliament**.

The instrumental variable we use is **Gender Quotas**. The data for this variable is available from the Gender Quotas Database (GQD) provided by the International Institute for Democracy and Electoral Assistance (IDEA). The GQD provides data on reserved seats, political party quotas, and legislative quotas²⁵.

The underlying idea for the selection of this instrument is that more women are expected to get elected to higher positions if a gender based quota is legislated in the law of the land. In other words, gender quotas aim to increase women's parliamentary representation and consequently their becoming chief of government. More effective quota strategies are warranted in view of the asymmetrical results quotas produce. We assume that our instrument is exogenous

²⁴While our dependent variable is of the type count variable, we are restricted from the use of IVPOISSON technique, since our covariates are not continuous variables. Hence, we perform this analysis using a manual two step IV method.

²⁵In our case, we use only reserved seats and legislative quotas since political party quotas are not coded in the GQD. Also, political party quotas may not be representative because in most countries, not all parties implement the quotas.

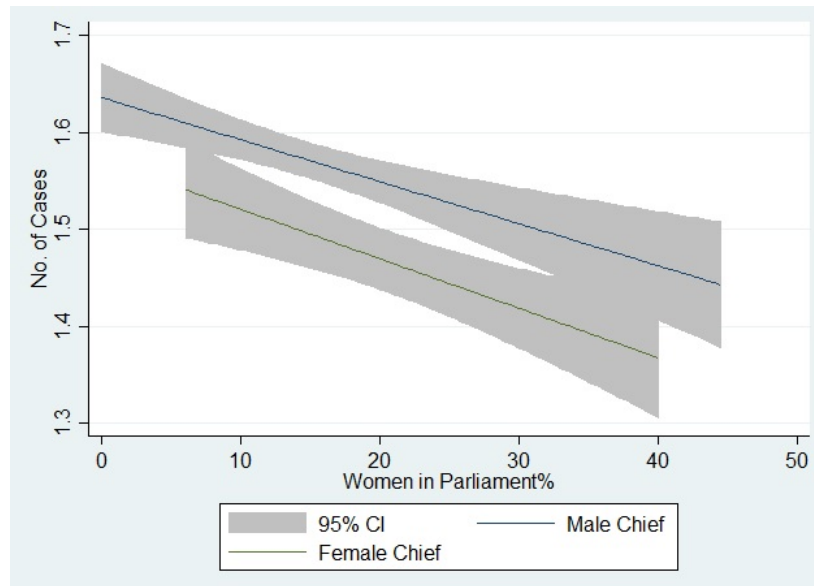


Figure 4: Effect of women in parliament on filing of contingent protection cases by Gender of the country head

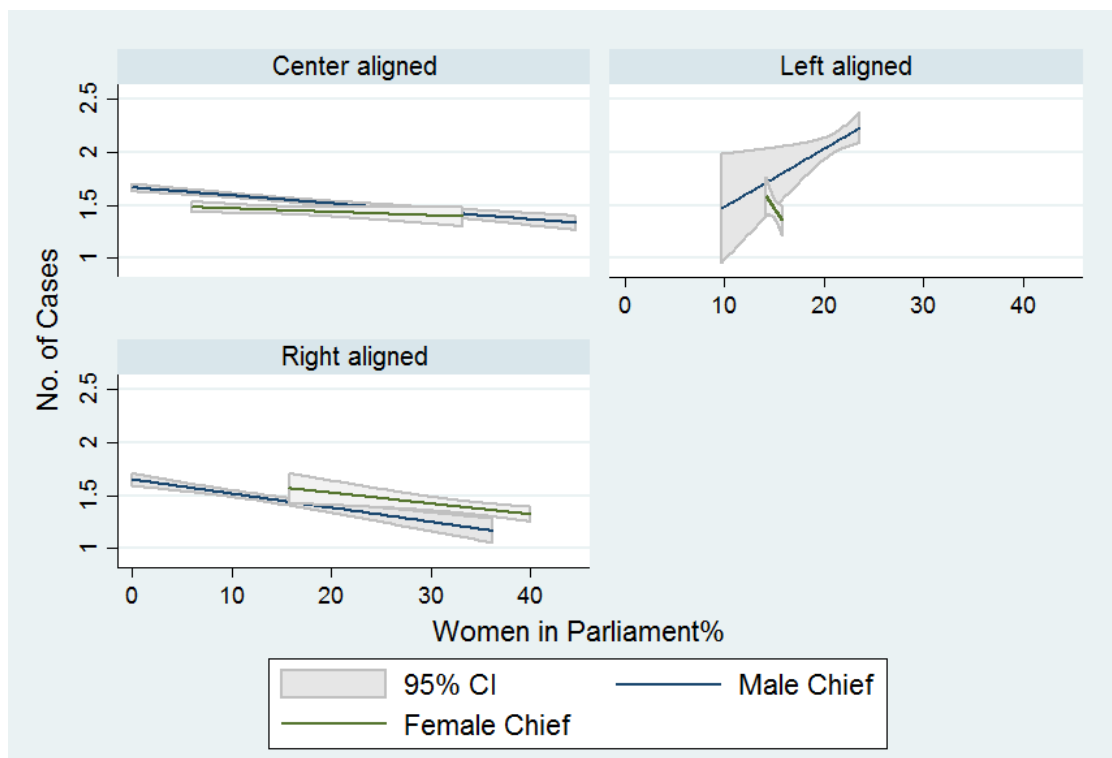


Figure 5: Effect of women in parliament on filing of contingent protection cases by Party Ideology of the Chief (ruling government)

Table 4: **IV Results**

	<i>Instrumental Variable</i>		
	(1)	(2)	(3)
Woman Chief	0.0524*** (0.0137)		0.178*** (0.0503)
Women in Parliament (Pct)		0.220 (0.132)	0.304 (0.157)
Woman Chief x Women in Parliament			-0.482*** (0.186)
Constant	0.0431 (0.0337)	0.0723** (0.0354)	0.0546 (0.0344)
Observations	73,083	73,083	73,083
No. of country Pairs	4,131	4,131	4,131
Standard Controls	Yes	Yes	Yes
Excluded Instrument	Gender Quota	Gender Quota	Gender Quota
R ²	0.04	0.04	0.04
F stat (Prob > F)	23.75	23.75	23.16
Hansen J Stat <i>Chi</i> ² (p-value) [†]			
First Stage (Instrumented: Woman Chief & Women in Parliament)			
	Woman Chief		Women in Parliament
Gender Quota	0.461*** (0.0557)		0.0201*** (0.00141)
Adjusted R ²	0.15		0.09
Observations	73,083		73,083
No. of country Pairs	4,131		4,131
Standard Controls	Yes		Yes
Interaction Terms	N		N

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

[†]The Hansen J Statistic and *Chi*² (p-value) present a test of over identification

Since there is only one instrument for the endogenous variables, we can say that the model is just-identified.

because the gender quotas in a country should not affect the propensity to file trade disputes as gender quotas are unlikely to have a direct bearing on trade policies.

We present results of the Instrumental Variable (IV) approach in Table 4 (the coefficient estimates of other controls are not reported here to conserve space).

We observe that our main variable of interest, i.e. **Woman Chief** continues to remain statistically significant and with positive effect on the case filing propensity (Column 1). However, when this variable is seen conditional to the effect of increased percentage of women parliamentarians, the positive effect is curtailed with increasing percentages of women parliamentarians (note the negative and highly significant interaction term in Column 3).

After including the instrument in the analysis, we see an effect similar in nature to the **Woman Chief** variable on the **Women in Parliament** variable with higher percentages of women parliamentarians leading to a reduction in the contingent protection cases. We also report the coefficient estimate of our instrument **Gender Quotas** in the first stage of the regression. We observe that **Gender Quotas** are statistically sig-

nificant and positive determinants of **Woman Chief** and **Women in Parliament** in a country.

With the base results remaining unchanged for our main variables of interest, we can conclude that our results are not driven by any outliers and are robust in nature.

4.4 Inter-temporal variations

In order to ensure that our empirical model does not mask any material inter-temporal variations, we conduct separate analyses for effects of women leadership on trade conflicts by segregating our 21 year period into two sections (incidentally, the mid-point in the period of our study coincides with the financial crisis of 2008-2009 which sent shock waves in the global trading order bringing down global trade by almost 22%²⁶).

For each set of observations, we estimate the empirical model using same measures which were used to generate the results in Table 3 Column 2.

²⁶World Trade in 2008- USD 16.265 trillion and world trade in 2009- USD 12.636 trillion (WorldBank, 2018a)

Table 5: **Temporal effects of women leadership on trade conflicts**

Variables	1998-2008	2009-2018
Woman Chief	2.320*** (0.749)	0.345 (0.429)
Women in Parliament (Pct)	-3.528** (1.410)	-5.672*** (1.225)
Woman Chief x Women in Parliament	-0.163 (1.543)	1.734** (0.857)
Woman Minister of Foreign Affairs	-0.204* (0.114)	-0.179** (0.0704)
Woman Minister of Finance	-0.326 (0.222)	0.133 (0.142)
Democracy	0.706*** (0.147)	0.688*** (0.138)
Constant	-6.609*** (0.696)	-9.478*** (0.759)
Observations	35,133	35,702
Pair of Countries	3,918	4,015
Baseline Controls	Y	Y
Pseudo R ²	0.087	0.075
Country & Year Dummies	Y	Y

Robust standard errors in parentheses

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

In the first period (1998-2008) assessed in this study, for the **Woman Chief** and **Women in Parliament** variable, we find results in conformity with our first hypothesis. For the **Women in Parliament** variable we find a negative and significant coefficient in both the periods. In the second period (2009-2018), while the **Woman Chief** variable is not statistically significant, the interaction term **Woman Chief x Women in Parliament** is positive and significant indicating the positive association of Woman Chief Executives with propensity to initiate contingent protection measures, conditional to the percentage of women in parliament. Nevertheless, the large and negative coefficient of **Women in Parliament** in this period demonstrates the fact that in recent times the increasing percentage of women parliamentarians has had a significant moderating effect on the propensity of women leaders to instigate protectionist cases.

As in the baseline results, **Woman Minister of Foreign Affairs** has a negative effect on the propensity of case filing which is statistically significant in the both periods. As seen before, countries that are democracies (significant and positive coefficient) have a higher propensity to initiate contingent protection measures.

4.5 Sensitivity Checks

Our sample consists of 49 reporting countries (importers) and could raise a concern that the results may be driven by a particular country or a group of

countries. We address this concern by a step-wise dropping of countries one by one from the sample and presenting results (see Appendix). We, individually, in succession, exclude the *traditional* users (US, EU, New Zealand, Australia, Canada) and most intense of the *new* users (India, China, South Korea, Mexico, Brazil, Argentina, Turkey, South Africa and Mexico). Our results remain consistent with the baseline results and hence we are confident that the relationship presented in the models are robust and not driven by outliers.

5 Concluding remarks

Psychology studies at laboratory experiments level have shown that men are more competitive than women. Women are believed to shy away from competition and men are said to embrace it. This becomes particularly pertinent in current trade war scenarios where leaders like Donald Trump and Xi Jing Ping, who exhibit masculinity in their personalities, have come head on in trade wars that have far reaching effects on the global order of trade and development.

We have examined how the competitive preferences of men and women can alter economic outcomes when matters of trade protection come to the fore. We establish a simple model to evaluate the payoffs for different players in a game of starting a trade conflict and back this up with the role of credible or incredible threat. We start with a theoretical basis that women leaders are stereotyped with gendered roles of being more cooperative and communal than men. Hence

the threat of a trade conflict from a country being lead by a woman leader is not considered as a credible threat. Consequently, countries led by women leaders are forced to take countermeasures of trade protection in order to protect their domestic industries. Therefore, countries led by women leaders are equally or more likely to opt for trade conflicts despite the impression of an overall communal characteristic of women leaders.

Our second hypothesis is that women in parliaments have a negative effect on the proclivity to engage in trade conflicts. We posit this way because we believe that the level and prominence of office alters women's responses to situations of conflicts and at the parliamentary level women are under less pressure to *prove* themselves.

We find empirical evidence corroborating our hypotheses using a panel of 49 contingent protection measure initiating countries against 102 trade partners for a 21 year period between 1998 and 2018. Our study confirms that having a woman head of government increases the propensity of a country to file a contingent trade protection case against a trading partner at the WTO forum. With regard to Women in Parliament, we see a moderating effect of higher percentages of women in parliament on the propensity to engage in trade conflict irrespective of whether a man or a woman leads the country.

We find interesting insights on role of a woman leader contingent to the **Ideology** of her party, **Government System** of the country, **Parliament structure** and; whether the country is a **Democracy** or not.

To sum up, it is an established theory in extant literature that trade protectionism has wide-ranging and mostly negative impacts. While the effects of trade on women have been up for much debate, there is no study examining the role of women in design of trade policy and initiations of trade conflicts. To the best of our knowledge, this paper is the first study which examines the role of gender of the country leaders in starting trade conflicts with trading partners. We find that having women leaders as heads of the government or important ministries like Foreign Affairs and Finance has different effects on the propensity to initiate trade conflicts. Trade wars are not only the bastion of men who are known to be more competitive. When it comes to protectionist policies, women leaders seem to be equally likely (or more) to initiate trade conflicts. This is of course governed by the role of the office the woman leader holds and the economic performance of the country she is leading. The role of overall gender equality or inequality in a society

needs to be probed further for the propensity to initiate trade wars because in recent times, in almost all cases protectionist policies are driven by the popular electorate.

Nonetheless, this study opens several avenues for further research in terms of the role of women leaders in trade conflicts and trade wars.

References

- Aggarwal, A. (2004), 'Macro economic determinants of anti-dumping: A comparative analysis of developed and developing countries', *World Development* **32**(6), 1043–1057.
- Anckar, C. and Fredriksson, C. (2018), 'Classifying political regimes 1800–2016: a typology and a new dataset', *European Political Science* **18**(1), 84–96.
- Bagchi, S., B. S. and Narayanan, K. (2018), 'Does anti-dumping en-forcement generate threat?', *Foreign Trade Review* **49**, 31–44.
- Blonigen, B. and Bown, C. (2003), 'Anti-dumping and retaliation threats', *Journal of International Economics* **60**, 249–273.
- Blonigen, B. and Prusa, T. (2001), 'Anti-dumping', *Handbook of International Trade* p. 251–284.
- Bown, C. (2016), 'Global anti-dumping database', *The World Bank*.
- Bown, C. and Crowley, M. (2007), 'Trade deflection and trade depression', *Journal of International Economics* **72**(1), 176–201.
- Campbell, R. and Heath, O. (2017), 'Do women vote for women candidates? attitudes towards descriptive representation and voting behaviour in the 2010 british election', *Politics and Gender* **13**(2), 209–231.
- Caprioli, M. (2000), 'Gendered conflict', *Journal of Peace Research* **37**(1), 51–68.
- Chattopadhyay, R. and Duflo, E. (2004), 'Women as policy makers: Evidence from a randomized policy experiment in india', *Econometrica* **72**(5), 1409–1443.
- Darvas, Z. (2012), 'Real effective exchange rates for 178 countries: a new database (last updated oct 2019)'.
- Dube, O. and Harish, S. (2017), 'Queens', *NBER Working Paper No. w23337*.
- Dutt, P. and Mitra, D. (2005), 'Political ideology and endogenous trade policy: An empirical investigation', *Review of Economics and Statistics* **87**(1), 59–72.

- Duverger, M. (1980), 'A new political system model: Semi-presidential government', *European Journal of Political Research* **8**(2), 165–187.
- Eagly, A. H., W. W. and Diekmann, A. B. (2000), *The developmental social psychology of gender*, Taylor and Francis Group, New Jersey, chapter Social role theory of sex differences and similarities: A current appraisal.
- Eagly, A. and Johannesen-Schmidt, M. (2001), 'The leadership styles of women and men', *Journal of Social Issues* **57**(4), 781–797.
- Feinberg, R. (1989), 'Exchange rates and "unfair trade"', *The Review of Economics and Statistics* **71** (4), 704–707.
- Feinberg, R. (2011), 'Anti-dumping as a development issue', *Global Economy Journal* **11**, 2–2.
- Feinberg, R. and Reynolds, K. (2006), 'The spread of anti-dumping regimes and the role of retaliation in filings', *Southern Economic Journal* **72**(4), 877–890.
- Feinberg, R. and Reynolds, K. (2018), 'How do countries respond to anti-dumping filings? dispute settlement and retaliatory anti-dumping', *The World Economy* **41**, 1251–1268.
- Finger, J., Francis, N. and Wangchuk, S. (2001), 'Anti-dumping as a safeguard policy', *Policy Research Working Paper*, The World Bank .
- Franceschet, S. (2011), *Gendered institutions and women's substantive representation: Female legislators in Argentina and Chile*, Palgrave Macmillan, London.
- Fuchs, A. and Klann, N.-H. (2013), 'Paying a visit: The dalai lama effect on international trade', *Journal of International Economics* **91**(1), 164–177.
- Glick, R. and Taylor, A. (2010), 'Collateral damage: Trade disruption and the economic impact of war', *The Review of Economics and Statistics* **92**(1), 102–127.
- Goemans, H., Gleditsch, K. and Chiozza, G. (2006), 'Archigos: A database of leaders. version 4.1 updated till 31-12-2015'.
- IMF (2019), 'Direction of trade statistics (dots)', *IMF data access to macroeconomic and financial data* .
- IPU.org (2019), 'New parline: the ipu's open data platform (beta)'.
URL: <https://data.ipu.org/>
- Irwin, D. A. (2005), 'The rise of us anti-dumping activity in historical perspective.', *The World Economy* **28**(5), 651–668.
- James, W. (2008), 'Have anti-dumping measures of eu and nafta members against east asian countries provoked retaliatory responses?', *Asian Development Bank* .
- Jon, A. A. (2011), 'At the end of the road? on differences between women and men in leadership behaviour', *Leadership and Organization Development Journal* **32**(5), 428–441.
- Knetter, M. M. and Prusa, T. (2003), 'Macroeconomic factors and anti-dumping filings-evidence from four countries', *Journal of International Economics* **61**, 1–17.
- Koch, M. T. and Fulton, S. A. (2011), 'In the defense of women: Gender, office holding, and national security policy in established democracies', *The Journal of Politics* **73**(1), 1–16.
- Lawless, J. L. (2004), 'Women, war, and winning elections: Gender stereotyping in the post-september 11th era.', *Political Research Quarterly* **57**, 479–490.
- Lawrence, R. Z. (2018), 'Can the trading system survive us-china trade friction?', *China and World Economy* **26**(5), 62–82.
- Linz, J. J. (1990), 'The perils of presidentialism', *Journal of Democracy* **1**, 51–69.
- McManus, R. and Ozkan, F. (2018), 'Who does better for the economy? presidents versus parliamentary democracies', *Public Choice* **176**, 361–387.
- Miranda, J., Torres, R. and Ruiz, M. (1998), 'Anti-dumping and retaliation threats', *Journal of World Trade* **32**(5), 5–71.
- Miyagiwa, K., Song, H. and Vandenbussche, H. (2016), 'Size matters! who is bashing whom in trade war?', *International Review of Economics and Finance* **45**, 33–45.
- Nelson, D. (2006), 'The political economy of antidumping: a survey', *European Journal of Political Economy* **22**(3), 554–590.
- Niels, G. and Francois, J. (2006), 'Business cycles, the exchange rate, and demand for anti-dumping protection in mexico', *Review of Development Economics* **10**, 388–399.
- O'Rourke, K. H. and Taylor, A. M. (2006), 'Democracy and protectionism', *BER Working Papers* **12250** pp. 58–78.
- Prusa, T. (2001), 'On the spread and impact of anti-dumping', *The Canadian Journal of Economics* **34**, 591–611.
- Scartascini, C., Cruz, C. and Keefer, P. (2018), 'The database of political institutions 2017 (dpi2017)', Washington, Banco Interamericano de Desarrollo .
- Stallings, D. A. (1993), 'Increased protection in the 1980s: Exchange rates and institutions', *Public Choice* **77**(3), 493–521.
- Swers, M. (2007), 'Building a legislative reputation on national security: The impact of stereotypes related to gender and military experience', *Legislative Studies Quarterly* **32**(4), 559–595.

- Tharakan, P. K. and Waelbroeck, J. (2006), ‘Anti-dumping and countervailing duty decisions in the e.c. and in the us: An experiment in comparative political economy’, *European Economic Review* **38**, 171–193.
- Tinbergen, J. (1962), An analysis of world trade flows, Twentieth Century Fund, NY.
- Vatter, A. (2005), ‘Bicameralism and policy performance: the effects of cameral structure in comparative perspective’, *The Journal of Legislative Studies* **11**(2), 194–215.
- Waal, J. and Koster, W. (2018), ‘Populism and support for protectionism: The relevance of opposition to trade openness for leftist and rightist populist voting in the netherlands’, *Political Studies (Oxford)* **66**(3), 560–576.
- Waldron, J. (2012), ‘Bicameralism and the separation of powers’, *Current Legal Problems* **65**(1), 31–57.
- WorldBank, T. (2018*a*), ‘World bank national accounts data, and oecd national accounts data files.’, *Trade (% of GDP)*.
- WorldBank, T. (2018*b*), ‘World bank national accounts data, and oecd national accounts data files.’, *GDP growth (annual %)*.
- WTO (2019*a*), ‘Dispute settlement’.
- WTO (2019*b*), ‘Wto database’.
URL: <https://data.wto.org/>
- Zanardi, M. (2004), ‘Anti-dumping: What are the numbers?’, *World Economy* **27**, 403–433.
- Zhao, H., Forrest, J. and Jirasakuldech, B. (2018), ‘A game analysis of trade dumping and anti-dumping’, *Theoretical Economics Letters* **08**, 2860–2881.

Table 6: **Contingent protection measure users**

Argentina	Costa Rica	India	Malaysia	Philippines	Thailand
Australia	Czech Republic	Indonesia	Mexico	Poland	Turkey
Brazil	Dominican Republic	Israel	Morocco	Russia	Ukraine
Bulgaria	Ecuador	Jamaica	New Zealand	Singapore	Uruguay
Canada	Egypt	Japan	Nicaragua	Slovenia	USA
Chile	European Union	Jordan	Pakistan	South Africa	Venezuela
China	<i>GCC^{vy}</i>	Kazakhstan	Panama	South Korea	Vietnam
Colombia	Guatemala	Latvia	Paraguay	<i>Taiwan^y</i>	
	Honduras	Lithuania	Peru	Trinidad & Tobago	

^vBahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates

^yExcluded in empirical analysis because of the unavailability of macroeconomic data

Table 7: **Countries targeted by contingent protection users**

Argentina	Spain	Kuwait	Romania
Armenia	Estonia	Lao PDR	Russian Federation
Australia	European Union	Libya	Saudi Arabia
Austria	Finland	Sri Lanka	Serbia and Montenegro
Belgium	France	Lithuania	Singapore
Bangladesh	Faroe Islands	Luxembourg	El Salvador
Bulgaria	United Kingdom	Latvia	Serbia
Bahrain	Georgia	Macao SAR, China	Slovak Republic
Bosnia & Herzegovina	Greece	Moldova	Slovenia
Belarus	Guatemala	Mexico	Sweden
Brazil	Hong Kong SAR, China	North Macedonia	Thailand
Canada	Croatia	Malawi	Trinidad and Tobago
Switzerland	Hungary	Malaysia	Tunisia
Chile	Indonesia	Nigeria	Turkey
China	India	Netherlands	Taiwan, China
Colombia	Ireland	Norway	United Arab Emirates
Costa Rica	Iran, Islamic Rep.	Nepal	Ukraine
Cuba	Israel	New Zealand	Uruguay
Czech Republic	Italy	Oman	United States
Germany	Jordan	Pakistan	Uzbekistan
Denmark	Japan	Peru	Venezuela, RB
Dominican Republic	Kazakhstan	Philippines	Vietnam
Algeria	Kenya	Poland	South Africa
Ecuador	Kyrgyz Republic	Portugal	Zimbabwe
Egypt, Arab Rep.	Korea, Rep.	Paraguay	
	Korea, Dem. People's Rep.	Qatar	

Table 8: Descriptive Statistics

Variables	Source	Observations	Mean	Std. Dev.
Cases (Initiator→Target,t)	WTO (2019b)	103,005	0.049	0.423
Woman Chief	Goemans et al. (2006)	103,005	0.120	0.325
Women in Parliament (Pct)	IPU.org (2019)	97,301	0.172	0.092
Woman Minister of Foreign Affairs	Ministry websites	103,005	0.127	0.333
Woman Minister of Finance	Ministry websites	103,005	0.054	0.226
Democracy	Anckar and Fredriksson (2018)	103,005	0.764	0.424
Parliament Structure	IPU.org (2019)	103,005	0.510	0.500
Political System	IPU.org (2019)	103,005	0.728	0.913
Ideology of Chief	DPI2017 (Scartascini et al., 2018)	100,505	2.00	0.765
GDP growth rate (Initiator)	World Bank (2018b)	100,605	3.7	3.4
GDP growth rate (Target)	World Bank (2018b)	98,423	3.67	5.12
Bilateral Imports (USD)	IMF (2019)	79,973	17.5	3.65
Bilateral Real Effective Exchange Rate	Darvas (2012)	96,831	0.010	0.323
Retaliation (Target → Initiator, t-1)	WTO (2019b)	103,005	0.031	0.376

*USD 2010 constant

Sensitivity Analysis Results- Part 1

	WO CHN	WO IND	WO USA	WO EUN	WO AUS	WO NZL	WO KOR
Woman Chief	1.253*** (0.302)	1.032*** (0.276)	1.068*** (0.281)	0.992*** (0.272)	0.998*** (0.271)	0.983*** (0.271)	0.937*** (0.279)
Women in Parliament (Pct)	0.0863 (0.502)	-0.0933 (0.470)	-0.168 (0.470)	-0.0876 (0.459)	-0.113 (0.459)	-0.171 (0.457)	-0.348 (0.470)
Woman Chief x Women in Parliament	-0.683 (0.701)	-0.0699 (0.638)	-0.274 (0.646)	-0.0165 (0.627)	-0.0209 (0.623)	-0.0106 (0.623)	0.0509 (0.644)
Woman Minister of Foreign Affairs	-0.250*** (0.0661)	-0.230*** (0.0593)	-0.223*** (0.0584)	-0.237*** (0.0579)	-0.230*** (0.0578)	-0.236*** (0.0576)	-0.259*** (0.0603)
Woman Minister of Finance	0.272** (0.127)	0.252** (0.115)	0.266** (0.116)	0.244** (0.113)	0.249** (0.113)	0.250** (0.113)	0.243** (0.117)
Democracy	0.678*** (0.113)	0.588*** (0.108)	0.641*** (0.108)	0.631*** (0.106)	0.609*** (0.106)	0.608*** (0.105)	0.681*** (0.109)
Constant	-13.66*** (0.460)	-13.90*** (0.432)	-13.94*** (0.435)	-14.14*** (0.430)	-13.93*** (0.428)	-13.93*** (0.427)	-13.85*** (0.433)
Baseline Controls	Y	Y	Y	Y	Y	Y	Y
Observations	69,983	69,989	69,979	69,961	69,99	69,997	69,969
Pair of Countries	3,994	3,994	3,994	3,993	3,994	3,994	3,993

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Sensitivity Analysis Results-Part 2

	WO ARG	WO BRA	WO CAN	WO TUR	WO ZAF	WO MEX
Woman Chief	1.019*** (0.275)	1.000*** (0.276)	1.015*** (0.271)	1.032*** (0.272)	0.912*** (0.273)	0.993*** (0.274)
Women in Parliament (Pct)	-0.183 (0.460)	-0.233 (0.465)	-0.142 (0.459)	-0.0669 (0.462)	-0.176 (0.460)	-0.177 (0.461)
Woman Chief x Women in Parliament	-0.0912 (0.624)	0.00579 (0.652)	-0.0981 (0.625)	-0.0920 (0.626)	0.0836 (0.626)	0.0818 (0.630)
Woman Minister of Foreign Affairs	-0.238*** (0.0579)	-0.219*** (0.0583)	-0.215*** (0.0579)	-0.226*** (0.0583)	-0.245*** (0.0580)	-0.241*** (0.0584)
Woman Minister of Finance	0.258** (0.113)	0.269** (0.116)	0.237** (0.114)	0.237** (0.114)	0.246** (0.113)	0.261** (0.113)
Democracy	0.590*** (0.106)	0.594*** (0.106)	0.609*** (0.106)	0.614*** (0.107)	0.595*** (0.106)	0.607*** (0.106)
Constant	-13.85*** (0.427)	-13.87*** (0.431)	-13.94*** (0.428)	-13.99*** (0.432)	-13.91*** (0.430)	-13.98*** (0.429)
Baseline Controls	Y	Y	Y	Y	Y	Y
Observations	69,979	69,985	69,981	69,989	69,999	69,981
Pair of Countries	3,994	3,994	3,994	3,994	3,994	3,994

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1