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Uncovering the proliferation of contingent protection through channels of retaliation, gender and development assistance

Author

Neha Bhardwaj UPADHAYAY

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Neha Bhardwaj UPADHAYAY

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Uncovering the proliferation of contingent protection through channels of retaliation, gender and development assistance

Thèse dirigée par

| Julie LOCHARD | Pr. à l'Université Paris Est, Créteil |
| Catherine BROS | Pr. à l'Université Gustave Eiffel |

MEMBRES DU JURY

Daniel MIRZA (Rapporteur)	Pr. à l'Université de Tours
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Robert ELLIOTT	Pr. à l'University of Birmingham
Ronald DAVIES	Pr. à l'University College Dublin

Abstract

This dissertation contributes to the empirical literature on trade protection through three independent chapters that have a common strand between them: use of contingent protection by trading economies of the world. In addition to tackling the conventional question on strategic determinants of contingent protection with a special focus on the role of mechanisms like retaliation (Chapter 1), this dissertation contributes two novel studies to the intertwinings of political economy with contingent protection: gendered role of national leadership (Chapter 2) and official development assistance (Chapter 3).

The first chapter uncovers the determinants of anti-dumping - a trade policy that has emerged as a serious impediment to free trade. Anti-dumping actions have flourished, starting with active use by developed nations or *traditional* users, transcending into escalating use by developing countries or *new* users. The motives of anti-dumping use have also evolved, including influence of political factors, growing importance of strategic concerns, macroeconomic conditions like exchange rates and GDP. Researchers have questioned whether anti-dumping filings may be motivated as retaliation against similar measures imposed on a country's exporters. This is the focus of this chapter, though we also control for other anti-dumping related indicators like past filing behaviour, cases filed globally and cases faced by the exporter. Using a large sample of anti-dumping users and their trade partners for a two decade period (1996-2015), we show that there exists marked heterogeneity in nations' use of anti-dumping as a contingent protection mechanism. The focus of this chapter is on retaliatory motives and we find evidence that this effect is masked at the aggregate level with insufficient statistical significance (except for select regions and income groups of countries), however, a sectoral analysis reveals that retaliation is a positive and significant determinant of current anti-dumping case filing activity for a select group of large importers. Another key result of this study is that a substitution effect exists between trade liberalisation (reduction of applied tariffs) and anti-dumping petitioning activity.

In the second chapter we raise the issue of national leadership and how it can affect the trade policy treatment in a country. In this context, a higher level of belligerence can be encountered by countries led by women leaders due to a world-view based on prejudice (against women). In

this chapter, this belligerence is modeled as actions like dumping or subsidies by exporting nations that increase the probability of countermeasures from importing nations. Our argument is, due to existing prejudices, 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). We find that the presence of a woman chief executive is positively correlated with the propensity to instigate trade protection measures. We see the moderating effect of political institutions with higher women participation in parliaments leading to a plummeting of protection related petitioning at international forums.

The third chapter is an attempt to evoke a debate on the nexus between foreign aid and increased protection by donor nations. The primary research question addressed in this chapter is whether donor nations provide market access to the recipients of their aid, specifically Aid for Trade (AfT), which is given to assist in the cause of trade. Using aid and protection data, this chapter finds evidence that US contingent protection activity increases against a country which has been the recipient of US AfT in the previous period. This chapter also finds that between the two main activity heads of AfT i.e. Economic Infrastructure & Services and Production Sector, it is the former that is the significant medium for the use of protectionist policy. To examine the heterogeneity in donor decisions, this study is expanded to other traditional donors like Australia, Canada, European Union and New Zealand. This chapter finds that Australia behaves similar to the US, however, for Canada and the European Union the relationship between aid and market access is not statistically significant. This chapter raises important questions on the validity and prevalence of the AfT program and the (newly challenged) role of WTO in maintaining the rules of international trade to ensure that developing countries are not stripped off their trade advantages from one hand while being thrusted with aid in the other.

Keywords*: Trade policy, protection, Anti-dumping duties, Countervailing duties, contingent protection, retaliation, women leaders, Aid for Trade*

Resumé

Cette thèse contribue à la littérature empirique sur la protection commerciale à travers trois chapitres indépendants ayant un point commun : l'utilisation de la protection contingente par les économies. En plus d'aborder la question traditionnelle des déterminants stratégiques de la protection contingente en mettant l'accent sur le rôle des représailles (chapitre 1), cette thèse deux nouvelles études sur l'imbrication de l'économie politique avec la protection contingente. La première s'intéresse au rôle du genre du dirigeant national (chapitre 2) et la seconde traite des effets de l'aide publique au développement (chapitre 3).

Le premier chapitre met en évidence les déterminants de l'antidumping, une politique commerciale qui est apparue comme un obstacle majeur au libre-échange. Les mesures antidumping se sont multipliées ces dernières années. Elles ont été utilisées au départ principalement par les pays développés (utilisateurs traditionnels), puis de plus en plus par les pays en développement (nouveaux utilisateurs). Les motivations du recours à ces mesures ont également évolué, notamment sous l'influence de facteurs politiques et de conditions macroéconomiques. Les mesures antidumping pourraient également être motivées par des rétorsions contre des mesures similaires imposées aux exportateurs d'un pays. C'est l'objet de ce chapitre dans lequel nous prenons également en compte d'autres déterminants des mesures d'antidumping : le comportement antérieur en matière d'antidumping; celui adopté avec le monde entier et les cas d'antidumping auxquels l'exportateur est confronté. Nous incluons aussi, dans notre analyse empirique, d'autres motifs comme les facteurs macroéconomiques et stratégiques. En utilisant un large échantillon de pays sur près de vingt ans, nous montrons qu'il existe une grande hétérogénéité dans l'utilisation par les nations de l'antidumping comme mécanisme de protection. Le présent chapitre se concentre sur les motifs de rétorsion et, si l'effet apparaît comme masqué au niveau global, une analyse sectorielle révèle que les rétorsions sont un déterminant positif et significatif de l'utilisation des mesures antidumping pour un groupe restreint de grands importateurs. Un autre résultat de cette étude est qu'il existe un effet de substitution entre la libéralisation du commerce (réduction des tarifs appliqués) et l'activité en matière d'antidumping.

Dans le deuxième chapitre, nous soulevons la question du leadership national et de la manière dont il peut affecter le traitement de la politique commerciale dans un pays. L'influence des dirigeantes féminines sur la conception des politiques a reçu peu d'attention dans la littérature. Dans ce contexte, les pays dirigés par des femmes peuvent être confrontés à un niveau de belligérance plus élevé en raison d'une vision du monde fondée sur les préjugés à l'égard des femmes. Dans ce chapitre, cette belligérance est modélisée par des actions telles que le dumping ou les subventions des pays exportateurs qui augmentent la probabilité de contre-mesures de la part des pays importateurs. Nous nous basons sur le rôle de la menace qui est fonction du sexe du dirigeant du pays. Notre argument est, qu'en raison des préjugés existants, les menaces provenant de pays dirigés par des hommes (importateurs) pourraient être considérées comme plus crédibles et que, par conséquent, la probabilité de conflits commerciaux (de la part de l'exportateur) est réduite. A l'inverse, les menaces émanant de pays dirigés par des femmes considérées comme non crédibles et le pays peut être amené à mettre en oeuvre des contre-mesures à l'égard de son partenaire commercial (pour réduire ou arrêter complètement la probabilité de survenue de conflits tels que le dumping ou les subventions aux exportations). Nous testons l'hypothèse de recherche suivante : les dirigeantes féminines ont-elles un rôle à jouer dans le renforcement des mesures de protection commerciale perçues comme un moyen de prévenir la hausse des importations faisant l'objet d'un dumping ? Nous montrons également qu'une plus grande présence des femmes dans les parlements nationaux exerce un effet modérateur sur la propension des femmes dirigeantes à mettre en place des mesures protectionnistes.

Le troisième chapitre s'inscrit dans le débat sur le lien entre l'aide étrangère et la protection accrue des pays donateurs. Ce chapitre explore les interactions entre l'aide en tant que politique étrangère et la politique commerciale. Le commerce ayant un rôle vital dans le développement des pays à faible revenu, l'aide au commerce vise à mobiliser des ressources pour faire face aux contraintes liées à ce dernier. Les recherches existantes suggèrent que l'aide incite le bénéficiaire à adopter des politiques commerciales plus ouvertes qui incitent, elles-mêmes, le donateur à donner l'aide. Cependant, l'augmentation ultérieure des flux commerciaux entre les deux pays dépend de ce que fait le donateur. Dans ce contexte, la principale question de recherche abordée dans ce chapitre est de savoir si les pays donateurs offrent un accès au marché aux bénéficiaires de leur aide, en particulier dans le cas de l'aide commerce, qui est spécifiquement accordée pour favoriser le commerce. En utilisant la protection contingente des États-Unis contre les pays qui bénéficient de l'aide pour le commerce des États-Unis, ce chapitre montre que la protection est plus élevée contre des pays qui ont bénéficié de l'aide au commerce des États-Unis au cours de la période précédente. Ce chapitre montre également qu'entre, c'est la première qui est le plus importante. Pour examiner l'hétérogénéité des décisions des donateurs, cette étude est étendue à d'autres donateurs traditionnels comme l'Australie, le Canada, l'Union européenne et la Nouvelle-Zélande. Nous montrons que l'Australie se comporte de manière similaire aux États-Unis, mais que, pour le Canada et l'Union

européenne, la relation entre l'aide et l'accès au marché n'est pas statistiquement significative. Ce chapitre soulève d'importantes questions sur la validité et la prévalence du programme d'aide au commerce et le rôle (nouvellement contesté) de l'OMC dans le maintien des règles du commerce international afin de garantir que les pays en développement ne soient pas dépossédés de leurs avantages commerciaux d'une part, et qu'ils ne soient pas poussés par l'aide d'autre part.

Mots-clés: Politique commerciale, protection, droits antidumping, droits compensateurs, protection contingente, représailles, femmes leaders, aide pour le commerce

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List of Acronyms

Acronym	Expansion
ADB	Asian Development Bank
AD	Anti-dumping
AFT /AfT	Aid for Trade
AVE	ad valorem equivalent
CRS	Creditor Reporting System
CVD	Countervailing Duty
EAP	East Asia and Pacific
ECA	Europe and Central Asia
EU	European Union
GATT	General Agreement on Tariffs and Trade
IADB	Inter-American Development Bank
ICTSD	International Centre for Trade and Sustainable Development
IDA	World Bank International Development Association
LAC	Latin America and the Caribbean
LDCs	least developed countries
MDG	Millennium Development Goals
MENA	Middle East and North Africa
NA	North America
NIU	National Implementation Unit
NTB	non-tariff barrier
NTM	non-tariff measure
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
SA	South Asia
SG	Safeguards

Acronym	Expansion
SPS	Sanitary and phytosanitary
SSA	sub-Saharan Africa
TDSP	Trade Development Support Program
TRAINS	Trade Analysis and Information System
UNCTAD	United Nations Conference on Trade and Development
US/USA	United States of America
WBG	World Bank Group
WGI	Worldwide Governance Indicators
WTO	World Trade Organization

General Introduction

Background

Multilateralism - which is the extension of trade rules without discrimination to all members of trading regime - if not dead, maybe at risk (Bhagwati, 1990). Almost quarter century later, Bhagwati et al. (2016) continue to warn us of the threats[1] to multilateral trading systems, specifically the WTO and its rule-making role. The results of multilateral trade reforms have ushered the 'death of distance' (Cairncross, 2002), 'world is flat' (Friedman, 2005) and 'great convergence' (Baldwin, 2016), as the great achievements of globalisation, all pointing to the universal reduction in the costs of trading. However, through econometric decomposition of trade costs, researchers find that in addition to traditional sources of trade costs (tariffs and transportation charges), additional factors are now affecting the pattern of trade and production and these costs are more severe for the developing world (Anderson and Van Wincoop, 2004; Arvis et al., 2013; Looi Kee et al., 2009; Mirza and Verdier, 2014). These motley results give rise to the question whether the *real* costs of trading have indeed fallen for everyone?

Trade depends not only on the production of goods and services, rather also on the costs of trading. Trade costs, broadly defined as all costs incurred in getting a good to a final user other than the marginal cost of producing the good itself, include policy barriers (tariff and non-tariff), all transport (freight), border-related, contract enforcement costs, currency cost and local distribution costs from foreign producer to final user in the domestic country

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[1] Bhagwati et al. (2016) attribute the rise of these threats, not only, from a variety of fundamental changes in the world economy, but also systems within the WTO, giving countries room to restrict free trade. For instance, countries failed to close the Doha Round of trade negotiations and with the emergence of bilateral and plurilateral preferential trade arrangements (PTAs) such as the Trans-Pacific Partnership (TPP), the future of the multilateral trade systems is questioned by researchers.

(Anderson and Van Wincoop, 2004)[2]. Arvis et al. (2013) suggest that, not just geographical distance, it is actually trade facilitation and logistics performance that play a major role in the trade isolation of developing countries. Deep regulatory and institutional features, that are discriminatory against foreign firms, also play a role in enhancing trade costs for developing countries[3].

Given that tariffs, as trade costs, seem to be the most 'visible' impediment to trade, one may question whether multilateralism or free trade is really at risk considering the fact that average applied tariffs have been consistently coming down since the end of the second world war. To this effect, Baldwin et al. (2000) and Panagariya (2013) suggest that world trade is freer post-WTO in terms of reduction of tariffs[4]. The WTO documents that in its 25 years of existence, average tariffs have almost halved, from 10.5% to 6.4%, however, non-tariff measures have been on a rise (WTO, 2019d) (See Figure 1). While the consequences of non-tariff measures are multitudinous, their proliferation is fraught with severe ramifications for multilateralism. Muzaka and Bishop (2015) suggest not restricting our attention to just short and medium term consequences, the decline of multilateral trade systems (like the WTO), in the long run, characterises the lack of a shared social purpose between the developed countries and the more powerful emerging countries which challenges the very foundation of trade politics.

It is therefore consequential to examine and understand the determinants of trade barriers like non-tariff measures as a trade policy (Gawande et al., 2015). Not only this, it is also important to unravel the role of policy makers (national leaders) and linked policy agenda (like official development assistance) when countries deploy barriers to trade as tacit circumvention of global trading rules (Blonigen and Prusa, 2001). This dissertation focuses on a select category of non-tariff measures i.e. contingent protection measures, more specifically, anti-dumping and countervailing duties.

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[2]Anderson and Van Wincoop (2004) find a 'headline' number of 170% ad valorem for a typical developed country. This number is broken down to 21% transport costs, 44% border related trade barriers, and 55% wholesale and retail distribution costs ($2.70 = 1.21 \times 1.44 \times 1.55$). Of the 44% ad valorem equivalent of border related trade barriers, only 8% relates to traditional trade policies such as tariffs.

[3]Within the developing countries, considerable disparity is seen in terms of trade costs with East Asia and the Pacific exhibiting lower levels compared to Sub-Saharan Africa (Arvis et al., 2013).

[4]There is a body of research papers around 2010-2015 which validate the successes of the WTO. Prominent among these is Davey (2012) who concludes that the WTO has been broadly successful in implementing the existing agreements and settling disputes. Panagariya (2013) observes that despite several challenges, the WTO has been successful on two fronts: keeping global trade free, and ensuring that developing countries have embraced freer trade and investment. This is in striking contrast to the views of Bhagwati (1990); Bhagwati et al. (2016) and therefore, we can see that researchers are divided in their opinion about the success of the WTO with positions evolving due to several exogenous factors.
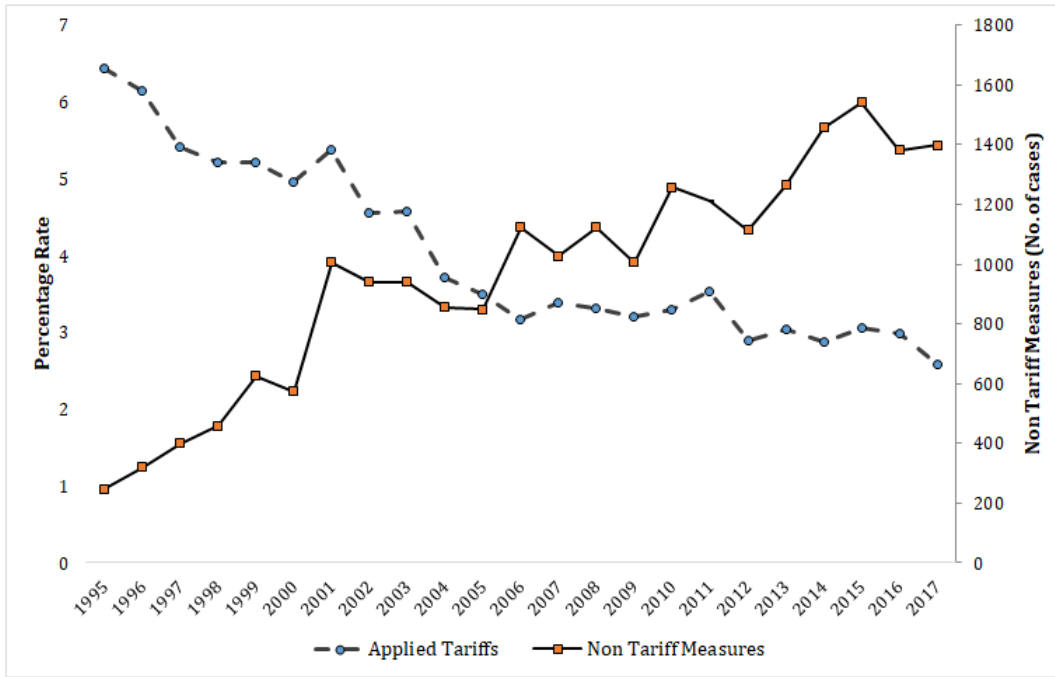
Figure 1: World applied most favoured nation (MFN) tariffs vs non-tariff measures
Source: World tariff profile (WTO, 2019d) and non-tariff measures data (WTO, 2019e)
Note: Non tariff measures used for this graphic are Sanitary and Phytosanitary Measures (SPS), Anti-dumping duties (AD),
Countervailing Duties (CVD) & Safeguards (SG)

Non-tariff measures

By definition, any government trade policy, other than tariffs, that leads to discriminatory treatment of foreign competitors relative to domestic producers could be termed as non-tariff measure (NTM) (UNCTAD, 2017). In other words, NTMs[5] are policy measures, other than [ordinary] customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both (WTO, 2019d).

With respect to non tariff measure indicators covered by WTO data[6], the United States tops

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[5]Often used interchangeably, non tariff measures (NTM) and non tariff barriers (NTB) are marginally divergent concepts mainly differentiated on the intent of the regulation. NTBs are policies that almost always induce an adverse impact on trade due to a discriminatory or protectionist hue. On the other hand, NTMs are in place to serve public interest and ensure national security (Marks, 2020). These may, however, transition into an NTB when the theoretical intent is incompatible with the practical implementation (Finger, 1992). In this chapter we use contingent protection measures like anti-dumping and countervailing duties for analysis. These are classified as *non-tariff measures* by the WTO (2019e) and therefore we use the nomenclature NTM throughout the dissertation.

[6]Sanitary and Phytosanitary (SPS) measures, Anti-dumping duties (AD), Countervailing Duties (CVD) & Safeguards (SG)
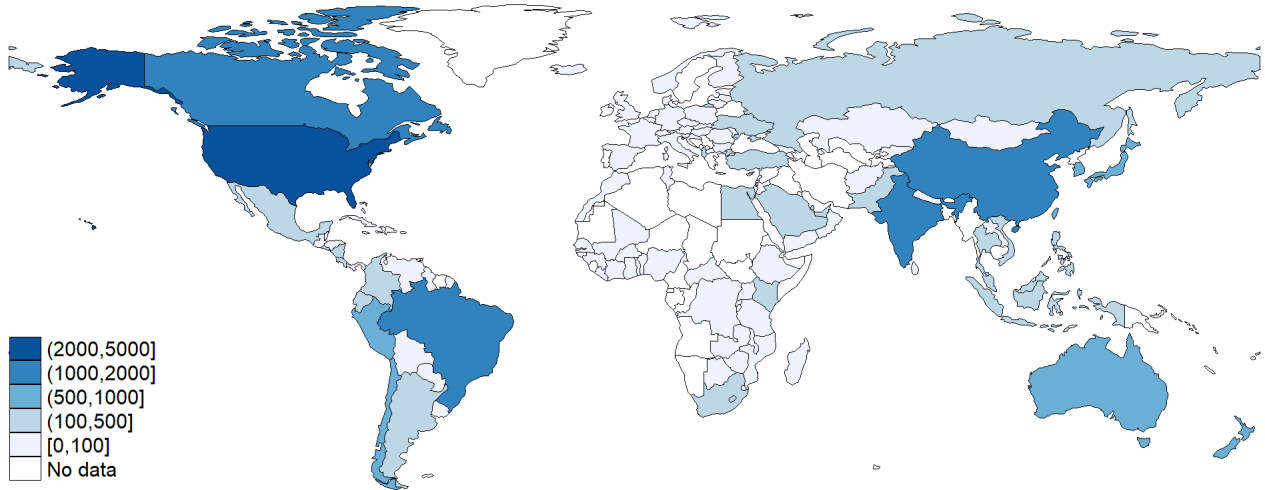
Figure 2: Number of non-tariff measures imposed by countries, 1995-2018
Source: WTO (2019e)

the chart in implementation with more than 3,850 incidences since the establishment of the WTO (1995). In the developed world, they are followed by Canada, EU, Australia and Japan. Developing countries like India, Brazil and China have initiated measures that are half in number of the US cases (See Figure 2). Nevertheless, these are high, exceeding 1,000 cases in the said period.
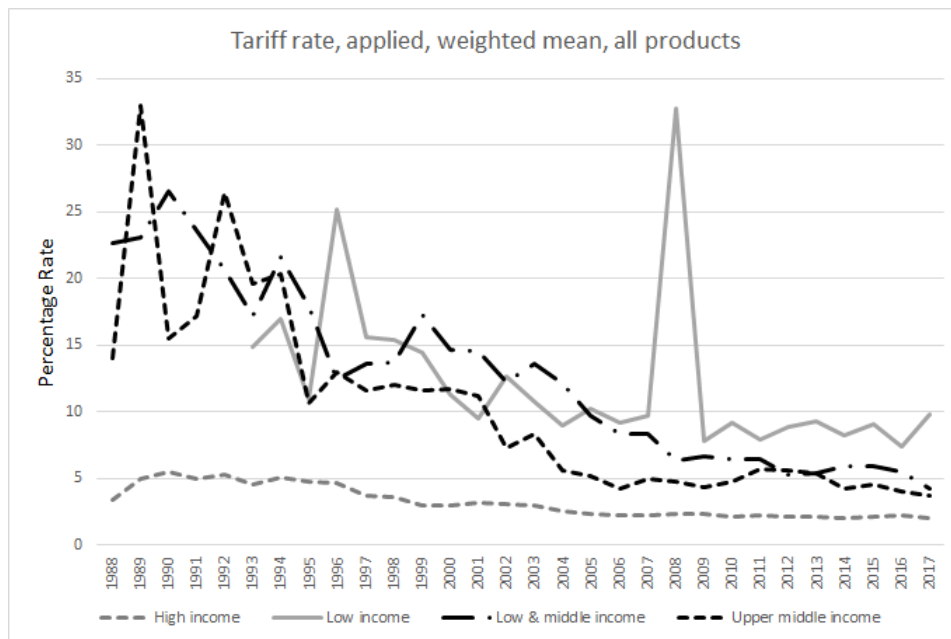
Figure 3: Tariffs applied (weighted mean, all products in %), by income of countries
Source: World Bank (2020)

Since the 1960s, tariffs have remained low in the developed or high income economies. In recent years, even for emerging economies, they are inching closer to those of advanced countries, a consequence of the trade *liberalisation* phenomenon that these countries have been witness of (See Figure 3). As seen in Figure 1, we may question if there exists a *substitution effect* between tariffs and non-tariff measures on trade. In this context, several theoretical and empirical studies have tried to answer this question. Anderson and Schmitt (2003) develop a model showing that when governments can set tariffs freely, they have no incentive to impose non-tariff measures. When a coordinated liberalisation of tariffs takes place, there is a progression from tariff protection to the use of quotas. If quotas are also limited, this is followed by a movement to anti-dumping enforcement. This argument is supported by the empirical work of Feinberg and Reynolds (2007) who show for developing countries, tariff reductions not only increased the likelihood of a country using anti-dumping protection (non-tariff measure) but also the total number of anti-dumping petitions filed by countries. Moore and Zanardi (2009) confirm the existence of a substitution between tariffs and use of non-tariff measures like anti-dumping, albeit, only for developing countries who are heavy users of the anti-dumping provision in the WTO rules. In a study specific to India, Bown and Tovar (2011) find products with larger tariff cuts due to the trade liberalisation in the 1990s are associated with an increase in non-tariff measures or protection. With respect to trade restrictiveness, Looi Kee et al. (2009) argue that non-tariff measures contribute an additional 87% to the restrictiveness imposed by tariffs. Therefore, they advocate that non-tariff measures should be a priority for those negotiating trade policy.

Contingent Protection

Anti-dumping duties, Countervailing Duties and Safeguards fall under the category of 'Contingent Protection' actions since the WTO agreement requires a link between trade volume and the imposition of trade protection for all of these trade remedies (Prusa and Teh, 2011)[7]. In the 2009-2018 decade, non-tariff measures of the contingent protection type constituted 65% of the pie of all protection measures used by trading countries (Global Trade Alert, 2020). Another indication of the importance of contingent protection measures is the proportion of world trade affected by them (Niels, 2000). This proportion is difficult to calculate, however, the metric of cases per dollar of imports provides an idea of the proliferation of these measures (See Table 1). What is more striking is that developing economies have been more intense users of non-tariff measures when compared to the traditional users (Prusa, 2005).

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[7]Bown (2010b) refers to these jointly as temporary trade barrier (TTB) policies.

To provide context to this argument, consider the case of products of iron or steel (metals sector). In 2018, metals accounted for 7% of global trade while consumer goods are roughly 31% and machinery and electrical are roughly 26% of the global trade (World Integrated Trade Solution, 2019). In the ten year period 2009-2018, about 1,800 interventions were made globally on metals and fabricated metal products which is 32% of the total interventions (Global Trade Alert, 2020)[8]. Thus a very large portion of globally traded products (and value) were subject to duties at any given point in time.

Table 1: Average NTM use per USD 1 billion of imports (Top users)

Country	1995-2004	2005-2014	2015-2018
Developed Economies			
Australia	0.120	0.06	0.080
Canada	0.054	0.02	0.037
European Union	0.008	0.003	0.002
Japan	0.001	0.0008	0.002
United States	0.028	0.012	0.026
Developing Economies			
Argentina	0.527	0.261	0.227
Brazil	0.140	0.138	0.075
China	0.032	0.011	0.008
India	0.622	0.125	0.117
Mexico	0.044	0.017	0.015
Turkey	0.135	0.064	0.063
South Africa	0.35	0.070	0.012

Source : Author's calculation from WTO (2019e)

Table 2: Trade contingent actions, Initiations and Measures:1995-2018

Trade contingent instrument	Initiations	Relative	Measures	Relative
Anti-dumping Duty	4,830	85.3 %	3,607	88%
Countervailing Duty	469	8.2%	271	6.6%
Global safeguards	364	6.5%	189	4.6%

Source : Author's calculation from WTO (2019e)

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[8]In recent trends, researchers have also found that coverage of contingent protection is extended to several downstream products - a phenomenon called 'cascade protection'(Erbahar and Zi, 2017).

As shown in Table 2, there have been over 4,800 anti-dumping initiations and over 800 countervailing duty and safeguard initiations since 1995[9]. Within this category of protection actions, Blonigen and Prusa (2001) note that since 1980 (till 2001, when their paper was published) GATT/WTO members had filed more complaints under the Anti-dumping statute than under all other trade laws combined. Given that the focus of this dissertation is on anti-dumping and countervailing duties as non-tariff measures or forms of trade protection, we devote the next few pages to discussing these contingent protection measures in detail.

Contingent Protection - Anti-dumping

The first Anti-dumping law passed by a sovereign government was over a century ago (in 1904) by Canada. This was followed by similar legislation in most of the major trading nations in the industrialised world prior to and after World War I (New Zealand (1905), Australia (1906), USA(1916)). After the World War II, Anti-dumping provisions were incorporated into the General Agreement on Tariffs and Trade (GATT) (Deardorff and Stern, 2005). Since the turn of the century, developing countries - that have historically played only a minor role in the contingent protection landscape, have been involved in an overwhelming way as either petitioners or targets of these contingent protection cases (Feinberg, 2011).

Dumping[10] is said to have taken place when an exporter sells a product in a market at a price less than the price prevailing in its own domestic market (sometimes even lower than cost of production) (Viner, 1923). A proof of 'injury' (or threat of an injury) to a competing domestic industry, within the provisions of the Agreement on Implementation of Article VI of the GATT 1994, makes the importing country eligible to impose anti-dumping measures against the exporters. Here, injury could mean material injury to a domestic industry, threat of material injury to a domestic industry, or material retardation of the establishment of such an industry and shall be interpreted in accordance with the provisions of this Article (WTO Antidumping Agreement, 1995). The *dumping margin* determines the quantum of duty that an importer levies on the 'unfair' imports. The dumping margin is the difference between the export price and the domestic selling price in the exporting country. Should the

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[9]We use this year as a starting point because the WTO was formed on January 1, 1995.

[10]In his seminal work on dumping, Viner (1923) classifies dumping according to motive : (1) the bargain-sale type, to dispose of a casual surplus; (2) the advertising type, to obtain or retain a market in which prices will presently revert to higher levels; (3) the predatory type, to kill or forestall competition; (4) the bounty-fed type in which exports at lower than the home price are made profitable through export bounties granted by governments of mercantilistic tendency; and (5) the cost-reducing type, to secure or retain a reduced unit cost by the expansion of output. He also suggests that after the 1890s, the fifth type of dumping has become most important of all suggesting that dumping is simply a method for obtaining economies which would be impossible without it.

determination of the comparable domestic price be impossible, export prices to third countries or a 'constructed value' is used for price comparison. Constructed value is calculated as the cost of production in the country of origin plus reasonable amounts of handling costs and profits.

Stiglitz (1997) argues that from a static perspective, dumping by foreign firms seems to make consumers better off. However, from the policymakers' point of view, dumping *could* become a problem in wake of *predatory pricing* and *new trade theory effects.*

Predatory pricing is a tactic employed by firms to drive down market prices to such low levels that other firms are forced to exit the market because they just cannot compete. Predatory pricing, while unprofitable initially, can lead to profits in the second stage by acting as an entry barrier for other firms. However, several conditions may exist in which firms sell less than the cost of production. For example, firms may have sales below average total cost but above average variable cost in the short run. Also, learning curves can prompt firms to forward price at long-run marginal cost rather than short-run marginal cost (Stiglitz, 1997).

In recent years, it is seen that foreign firms are targeted with anti-dumping cases despite charging higher prices abroad or prices higher than domestic competitors. Thus, predatory pricing does not feature as a pre-requisite for filing anti-dumping petition against firms. Therefore, Blonigen and Prusa (2001) conclude that 'Anti-dumping has nothing to do with predatory pricing'- a conclusion arrived at by Stiglitz (1997) much earlier.

With respect to the new trade theory effects, Brander and Spencer (1985) suggest that there may be cases in which subsidy on imports could raise national welfare but reduce welfare in the importing country due to import surges. In this case, countervailing duties[11] are useful in preventing foreign firms from gaining the first mover advantage in the domestic market.

Contingent Protection - Countervailing Duties

Barcelo III (1977) exposes the trade principle behind countervailing duties observing that the inadequacies of free economies may require government intervention from time to time. While the intervention can be in the form of subsidy to domestic production and export subsidies, it is the former that is more effective from efficiency point of view. Bown (2010b) analyses

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[11]countervail subsidies that promote exports
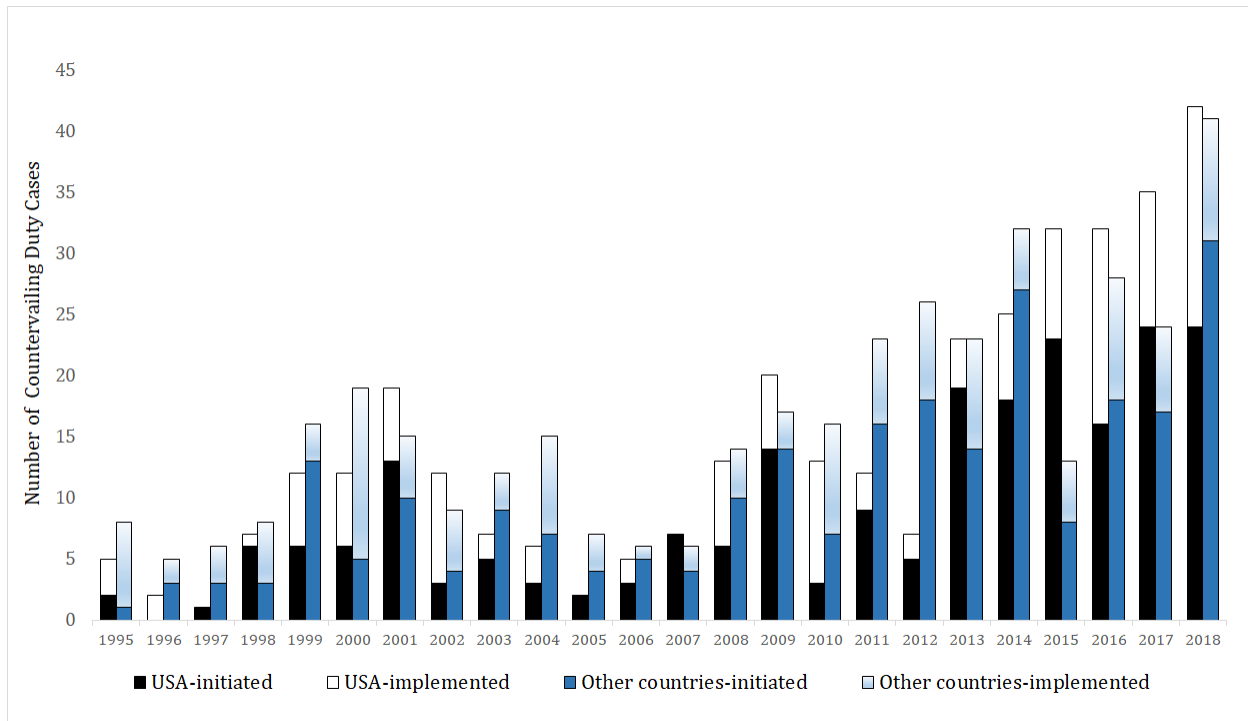
Figure 4: Trading nations' use of countervailing duties, 1995-2018
Source : Author's calculation from WTO (2019e)

this view further suggesting that there was a potential shift towards governments relying on the countervailing duty (anti-subsidy) policy triggered mainly due to two events: (1) China's WTO accession in the face of its continued export expansion; and (2) the global policy response to the financial crisis of 2008–09 which led to a number of government-financed industry bailouts. These government support measures in the form of subsidies could be addressed through countervailing duties by trade partners. He also notes that while in the 1990-2009 period the US was the major user of countervailing duty provisions, several other WTO member economies (India, China, Turkey) have implemented new countervailing duty legislation and enhanced their use of this statue (See Figure 4). China's purported 'currency manipulation' has often led to the rise in concerns of acting as an export subsidy which may lead to a surge in countervailing duty cases by other countries (Staiger and Sykes, 2010) and therefore, amongst the other countervailing duties-imposing economies in the G20, there is strong evidence of the simultaneous use of countervailing duties alongside anti-dumping.

The overall growth in countervailing duties could be troubling since it indicates either of the following two practices: 1) subsidies are growing or, 2) countervailing duties are being employed against a wider range of subsidies suggesting an increasingly protectionist deportment (Marvel

and Ray, 1995). Since Marvel and Ray's commentary in 1995, countervailing duty cases have been on a rise, although not commensurate to the number of anti-dumping cases worldwide. Also, it is worth noting that the US is a major user of countervailing duties in the world with its countervailing duty implementations since 2014 exceeding the countervailing duty initiations by all other countries combined (Figure 4).

Contingent Protection - Safeguards
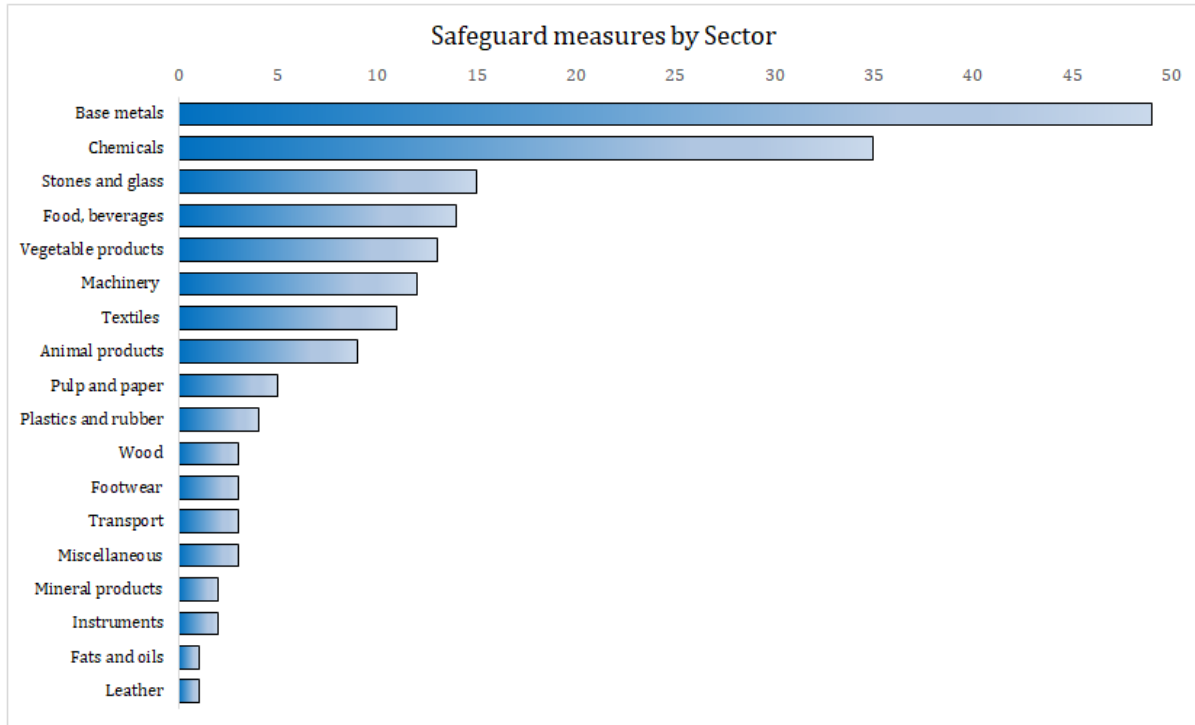
Figure 5: Trading nations' use of safeguards (by sector), 1995-2018
Source : Author's calculation from WTO (2019e)

Safeguards[12] are contingent protection measures used by trading nations to (temporarily) protect a specific domestic industry from import surges that cause (or threaten to cause) material injury to the domestic industry. The GATT formalised the 'insurance' needed to make free trade politically acceptable in Article XIX which allows safeguards to be levied if import surges threaten domestic industry (Stiglitz, 1997). A few select sectors have seen intensive use of safeguards (Figure 5). These are the base metals, chemicals and ceramics categories. Since China's accession to the WTO in 2001, there have been China specific safeguards imposed by countries. These account for 17% of the total safeguard cases filed between 2002 and 2012 (author's calculation from Bown (2016)).

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[12]While safeguards are not the focus of this dissertation (because of their non-bilateral nature), this short section is devoted to touch upon significant ideas concerning this mechanism of contingent protection.

Countries have been more restrained in their use of safeguards, probably because of the relative ease of using anti-dumping and countervailing duty petitions (Bown, 2010a). Also, safeguards may be less popular because using them might signal the admittance that a country's domestic industry is not competitive (Niels, 2000).

Consequences of contingent protection

Empirical studies seem to support the theoretical argument that flexibilities are needed in trade agreements. These flexibilities help in addressing possible difficulties that may not be envisaged at the time of signing the agreement. Contingent protection measures are a step in that direction and research suggests that they are more likely to be used when countries are undergoing difficult economic circumstances. However, researchers have not disbared the possibility of these measures being used as protectionist tools invoking numerous consequences (WTO, 2009). With the rapid proliferation of contingent protection policies, the effects or consequences that arise from them have been scrutinised in several studies.

Vandenbussche and Viegelahn (2011) categorise the use of several indicators that capture *direct* effects of contingent protection policy (in this case anti-dumping). These are product coverage, country coverage and product-country coverage, all coded as count measures. Studies with a core partial equilibrium nature have focused on the product level directly affected by contingent protection actions. For example, Krupp (1994) examine the use of anti-dumping in the US chemical industry to find a positive link between import penetration and price-cost margin with petitioning activity. In a recent paper Chandra (2019) investigates the effect of US anti-dumping duties on the exports of Indian multi-product firms and find that firms affected by US anti-dumping duties increased the number of products exported to other destinations by about 0.7 products, on average.

Vandenbussche and Zanardi (2010) also expand to a general equilibrium approach by looking at the aggregate effects of contingent protection where a mixture of effects is likely to be at play. They identify *indirect* effects on trade flows like trade destruction, trade creation (via import source diversion), trade deflection and trade depression[13] due to contingent protection.

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[13]If country A takes a contingent protection measure against B, there are four possibilities of trade flows between A, B and third country C :
1) trade flows (relative to free trade) from B to A can reduce (*trade destruction*),
2) trade flows (relative to free trade) from B to C will increase (*trade deflection*),
3) trade flows (relative to free trade) from C to B can reduce (*trade depression*) and,
4) trade flows (relative to free trade) from C to A increase (*trade creation via import source diversion*) (Bown and Crowley, 2007; Vandenbussche and Zanardi, 2010)

Research has also delivered the following potential channels through which contingent protection can administer consequences on trade. These are : *downstream effects* (negative impact on downstream products like cars due to protection in intermediate sectors like steel (Krupp and Skeath, 2002)), *deterrent effect* (making trade partners more cautious when shipping their goods to countries that signal to be frequent and tough users of contingent protection (Blonigen, 2006)), *collusive device* (formation of international cartels and tacit collusion (Prusa, 1992; Zanardi, 2004)), *FDI effects* (exporters may decide to evade contingent protection by setting up a production plant within the protected market (Blonigen, 2002; Cole and Elliott, 2005), *retaliation effects* (political and strategic considerations related to the use of contingent protection laws (Blonigen and Bown, 2003; Feinberg and Reynolds, 2006, 2018; Skeath and Prusa, 2001)).

Thus, the effects or consequences of trade protection could have short as well as long term reach for a country's macro-economy and often the global economy (Vandenbussche and Zanardi, 2010). This becomes particularly important for countries that seek to access developed markets where restrictiveness of non-tariff measures is higher. Therefore, three broad conclusions can be drawn from the literature on the consequences of contingent protection. *First*, use of contingent protection is a highly political process and creates vested interests not only among protected industries and their political representatives, but also among the officials and lawyers directly involved in the policy (Niels, 2000). *Second*, 'chilling effects' of protectionist policies are measurable even before a duty is imposed (Vandenbussche and Zanardi, 2010). And *third*, evidence is mixed on the effect of trade flows between countries that impose protectionist polices, the target of these protectionist measures and third countries[14].

At this juncture, it is important to enunciate that this dissertation does not study the consequences of contingent protection. This dissertation explores the determinants of contingent protection and attributes their genesis to factors other than only trade. Nevertheless, we believe, a fundamental discussion on the consequences of contingent protection was worthwhile to inform the debate on the motivations of the same. This is in line with the observations of Gawande et al. (2015) who point out that quantitative evaluations of the consequence of protection on trade flows cannot be decoupled with the understanding of the determinants of trade policy in the first place. In that vein, this dissertation is an attempt to uncover the atypical factors that play a role in nations' activity of contingent protection.

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[14]A priori, the effect of contingent protection proliferation on trade flows remains unclear. Imports are likely to be reduced in an equilibrium scenario of all countries use contingent protection. Alternatively, the proliferation of contingent protection laws may result in a politically optimal equilibrium where the capacity to access these laws induces a cooperative equilibrium (Bagwell et al., 2016).

Outline of the dissertation

The literature on contingent protection measures, specially anti-dumping duties, is fairly mature with significant contributions over the past three decades related to key questions from when and why dumping occurs to its overall welfare effects. However, there is scant attention to several new issues which although developed by trade theory have not found coverage in the contingent protection literature (Blonigen and Prusa, 2016). For example, which group of countries use contingent protection as a strategic tool to retaliate and in which sectors? Why do some countries take a more belligerent stand and does this have to do with the leadership or representation of the country? Do countries use development assistance as a 'carrot and stick' approach to induce desired behaviour in the recipient countries who become competitive trading partners? This dissertation is an attempt to address these under-scrutinised issues.

This dissertation is a collection of three empirical studies in international trade focusing on the use of contingent protection measures by trading nations. However, it can be advocated that it comes under the realms of development economics since trade protection has percolated into the developing countries, not only as targets but also as petitioners. It is an attempt to examine the trends in use of protection, consequently evoking discussion on welfare-enhancing alternatives that would be a useful direction for research. Each paper consists of a detailed literature review, and therefore here, we only briefly describe the motivations, theoretical backdrop, empirical methodology and key findings of each chapter.

What determines trade protection?

Chapter 1: Protection begets protection?

The first chapter titled ***Protection begets protection?*** is aimed to uncover the role of strategic motives like retaliation when using Anti-dumping duties. It is to be noted, in this chapter, we focus only on anti-dumping policy as it is the most conspicuous of all trade policies in terms of retaliatory behaviour [15]. It seems that anti-dumping has found a favour for countries wanting subtle protection due to its unique combination of political and economic manipulability, incentives, and intrigue (Blonigen and Prusa, 2001). Blonigen and Bown (2003) develop theoretical models to exhibit the potential channels of retaliation involved in Anti-dumping cases. They suggest that effective retaliation requires a combination of having

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[15]To avoid noise in this particular analysis about the strategic motive of retaliation, we exclude countervailing duties since the bulk of countervailing duty cases (roughly 66%) are attributed to the USA. Also, safeguards as contingent protection tool, have to be excluded since these are not bilateral but levied product wise.

access to and experience with the GATT/WTO dispute settlement mechanism and having sufficient trade from the home country to engage in a strong enough retaliatory response. To this effect, more recent studies like Feinberg and Reynolds (2006, 2018); Niels and Francois (2006) find strong evidence that a significant share of anti-dumping filings worldwide can be interpreted as retaliation.

In this chapter, we use data on anti-dumping activity pertaining to 49 active users and their trade partners from 1996 to 2015 (20 years). The focus of this chapter is on retaliation as a motive for further anti-dumping activity. Therefore we construct indicators which capture the retaliatory motives of trading nations. Additionally, to examine the role of anti-dumping as a strategic tool in trade, we have a battery of anti-dumping related indicators to capture the deflected trade, total anti-dumping initiated globally in that particular time period, anti-dumping initiating experience and echoing (a global phenomenon wherein different countries sequentially impose anti-dumping measures on the same product from the same exporter).

This chapter finds that on an aggregate (country level), retaliation is not a strategic motive for anti-dumping petitioning. However, for sub-samples based on income levels, size of trade and regions, a very heterogeneous contour is evident in terms anti-dumping case filing behaviour. Lower and upper middle income countries show a positive correlation between current anti-dumping petitioning and past anti-dumping against them by a trade partner, in other words, retaliatory anti-dumping. This is also true for East Asia & Pacific region probably due to the presence of China and South Korea.

At an aggregate level, it would not be crystal clear why countries would retaliate using an anti-dumping petition against a country which has targeted it in a particular industry section. To investigate this, this chapter includes a dis-aggregated analysis of anti-dumping activity, i.e. at the sectoral level. In the sectoral analysis, we find that the coefficients are positive and significant at the 1% level for a select group of large importers (constituting of both *traditional* and *new* users of anti-dumping) indicating that at a sectoral level, retaliation does determine anti-dumping activity.

The timing of retaliatory action by an importer, which is in direct response to past anti-dumping activity by the exporter, raises concerns of a potential trade war and hence can be suggestive of retaliation being a significant motive behind Anti-dumping activity. Overall, in this first chapter, we corroborate the views of researchers like Feinberg and Reynolds (2018), James (2008), Niels and Francois (2006) and Blonigen and Prusa (2001), amongst others, who

suggest that retaliation as a strategic instrument substantially affects present anti-dumping activity. Taking a deeper dive into the sectoral break-up, this chapter uncovers that while at the aggregate level retaliation does not seem to be a significant motive, it is deployed at the sectoral level by both traditional (developed economies) and new users (emerging economies) of Anti-dumping.

Is trade policy design different when the leader of a country is a woman?

Chapter 2: Are only men fighting trade wars?

The question whether leaders matter for economic growth is as familiar as it is difficult to fully answer. In this chapter we pursue the idea that characteristics of a country's leader - in this case gender - are important for policy design including trade policy. Literature suggests that trade affects men and women differently. This is attributable to men and women having different economic and social roles and different access to and control over resources, due to socio-cultural, political and economic factors. With this in mind, policy makers as well as researchers have been burdened with making gender responsive trade policies. While all this debate happens at the level that trade and trade policies affect women as entrepreneurs, traders or workers, there is a dearth of research on the role of women leaders as *designers of trade policy*. In this second chapter, titled ***Are men fighting the trade wars?***, we investigate the role of national leadership, specifically women, in the propensity to instigate trade protectionist measures (anti-dumping and countervailing duties).

First, we build a theoretical model based on game theory with the role of threat being consequential to players' decisions to initiate or curb protectionist countermeasures. The threat from a woman leader maybe deemed non-credible (Dube and Harish, 2020) leading to the continuing of a 'harmful' trade action from the partner country (like dumping or subsidising exports). To counter this, a woman leader is left with no other option but to instigate a petition under the disciplines of the WTO. Within the realms of psychology studies, this behaviour is termed as 'male posturing' when a woman is required to act as male to make her threat seem credible (Caprioli, 2000).

Second, using empirical analysis for the trading nations that have used contingent protection in the 21 year period between 1998 and 2018, we find that 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. This varies significantly from the behaviour of women leaders at the mass level, i.e. as members of parliament, since their credibility at an international level is not put to test (unlike that of the woman head of government). Women parliamentarians are less likely than men to support the use of contingent protection and our results show that increasing percentage of women in parliament has a moderating effect on the use of contingent protection, irrespective if the chief office holder is a man or woman. In this chapter we also include controls for important ministries that may seem to have a link with trade policy design, for example, the foreign affairs and finance ministries.

To sum up, this chapter is a novel investigation into the role of national leadership, specifically gendered role, in the use of contingent protection. 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 a woman leader holds and the economic performance of the country she is leading.

Growing protection on the sidelines of development aid

Chapter 3: Medicine with side effects - Aid for trade and targeted protection

In the third chapter titled **Medicine with side effects**, we investigate the under-examined issue of the relationship between Aid for Trade (AfT) and contingent protection. Inspired by Nunn's commentary (2019) on rethinking economic development, this is a novel study that asks whether donor nations open their markets to developing nations who are recipients of their AfT assistance?

In this chapter, the theoretical motivation is guided by the work of Lahiri et al. (2002) who suggest that in cases when level of aid is decided before level of tariffs, aid induces the recipient to more open trade policies giving an incentive to the donor to choose aid first. Subsequent increase in trade flows between the two countries now depends on what the donor country does in terms of providing market access to the recipient. The first part of the analysis carried out in this chapter deals with the USA as donor (and contingent protection user). We find evidence that USA's contingent protection activity increases against a country which has been the recipient of its Aid under the AfT programme in the previous year. Our conclusion stands up for a battery of robustness tests based on regions, income level of recipients and different presidential regimes. Also, to eliminate doubts of potential endogeneity between aid and trade, we use instrumental variable approach and find that our results remain consistent.

This chapter also finds that between Economic Infrastructure & Services and Production medium (the two broad trade related categories in the Official Development Assistance data classified by the OECD), it is the former that is the significant medium. Subsequently, this study is expanded to other donors and a variegated response of each donor is observed.

Data quality and availability

This dissertation is a work on non-tariff measures and relies extensively on data by the WTO (2019e) for indicators related to contingent protection cases. Data on contingent protection (initiations and final measures) is available from 1995 to 2019 for 49 reporting economies and 106 trade partners. This data is at the country-level and is reported as a count of the number of cases initiated against an exporter. The WTO (2019e) collects this data *passively* as all members are required to submit reports regarding contingent protection measures regularly[16] under agreed regulations. Although there are limits in terms of translation and interpretation bias due to mismatches in language and training of data reporters in each country, the Anti-dumping data from the WTO, at least as the count of cases per year, have become comprehensive (UNCTAD, 2017).

For sector (industry) level data (Chapter 1) we use the Temporary Trade Barriers Database (TTBD) by Bown (2016) which covers over 95% of the global use of anti-dumping, countervailing duties and safeguards. The temporal coverage of TTBD is from 1995 to 2015 for 51 reporters (including the Gulf Cooperation council and the European Union as single entities). This dataset provides sector classification for each contingent protection case filed by the reporters. The TTBD compiles information extracted from national government legal texts and other communications dealing with the respective measures and mapped to the Harmonized System (HS) product codes. Analogous to any data compiled using national registers or reports at the sector or product level, the data in TTBD could also be girdled with common problems like the following. First, the data could have deficiencies due to problems of 'non-reporting'. Second, it is possible that the data provided in the national government legal texts and other communications may not be coded according to the nominated classifications and categories. Therefore, while the TTBD efficiently tracks each contingent protection case number wise, there could be gaps in product and duty value coverage. Our study does not deal with duty value, however, for missing product fields (252 individual cases) WTO

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[16]For anti-dumping, as per article 16.4 of Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade (GATT), members are required to submit a report of all anti-dumping actions they have taken, as well as a list of all anti-dumping measures in force, twice a year. For countervailing and safeguard measures, as per Article XIX of GATT, members are required to notify investigations and applications of measures to relevant committees.

Antidumping Agreement resources were perused to update the product fields.

Regarding temporal coverage, the TTBD is available till 2015 posing a limit for our sectoral analysis in Chapter 1. In Chapter 2 we have a temporal coverage from 1998 to 2018. However, this is because of the unavailability of data related to percentages of women in parliament which is a key independent variable. Similarly, in Chapter 3, the measures for key independent variables related to foreign aid are available 2001 onward and therefore our sample ranges for period 2001 to 2018. In summary, our three studies were planned to study the period starting from the establishment of the WTO (1995)[17] till the most recent year (2018). However, temporal coverage in each chapter stands altered depending on the availability of key independent variables as mentioned above.

For remaining indicators used in this dissertation, data related information is provided in further detail within the chapters.

Contributions

In summary, this dissertation makes contributions to the existing literature in the following aspects. *First*, it adds insights to the often questioned motives of initiating contingent protection by considering the role of retaliation in current filings of anti-dumping cases. More precisely, it complements previous evidence on the impact of strategic motives in initiating contingent protection (Bown and Crowley, 2007; Feinberg and Reynolds, 2006, 2018), and explores the role of industry in petitioning actions. *Second*, it contributes to the scarce stream of research on the impact of national leadership on contingent protection as a trade policy instrument. *Third*, this dissertation furthers our understanding on the subtle, yet strong, linkages between foreign policy and trade policy. The effectiveness of foreign policy instruments like Aid for Trade has seldom been discussed from the standpoint of ensuing contingent protection and our results are compelling evidence suggesting that 'aid is seldom purely altruistic'.

With the aforesaid, the inferences in this dissertation have two important general implications: first, they provide deeper insights into the extant topics like determinants of contingent protection. Second, they raise neoteric and original questions on the intertextuality between trade policy, development, and political economy.

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[17]The number of cases filed has significantly increased since the establishment of the WTO (1995) due to the notification requirements from member countries.

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Chapter 1

Protection begets protection?
Role of retaliation in anti-dumping case filing

1.1 Introduction

Finger (1992) in his seminal work titled *Dumping and Anti-dumping: the rhetoric and the reality of protection in industrial countries* said, "Anti-dumping is ordinary protection with a grand public relations program". His reasoning is straightforward when he says that anti-dumping is the fox that is in-charge of the hen-house. In other words, foreign dumping is the rhetoric used by trading nations to excuse contemporary protectionist measures. Whilst with an original objective of curtailing 'unfair trade', contingent protection measures provisioned by the World Trade Organisation, are increasingly becoming the means of introducing trade distortions.

A vast body of literature has explored the motivations for anti-dumping usage and its proliferation in developed and developing trading nations alike. A result that emerges from these studies is that the strategic motive of retaliation is a key factor contributing to the growth in anti-dumping regimes (Blonigen and Bown, 2003; Blonigen et al., 2000; Feinberg and Reynolds, 2006, 2018; Prusa and Skeath, 2004). This chapter fits into this broader area of anti-dumping literature that focuses on prevalence of retaliation amongst users of anti-dumping. However, this chapter contributes to literature in the following aspects. In the first place, it vastly expands the scope of study by using a large sample of contingent protection users since the formation of the WTO. To be precise, we look at the determinants of anti-dumping use intensity among the users of contingent protection with a special focus

on the strategic motive of retaliation. Subsequently, this chapter accrues key insights on to the glaring heterogeneity in strategic behaviour of importers by size of importer (by trade value), income levels and whether or not they fall in the traditional users 'club'. Finally, by performing a comprehensive sectoral analysis, this chapter unmasks the exact industries that have a role to play in retaliatory anti-dumping.

Consequently, the main findings can also be summarised in a three-pronged way. *First*, on an aggregate (country) level, trading nations do not exhibit retaliatory behaviour when we control for imports, exchange rate and growth of countries in terms of GDP. Other factors related to anti-dumping behaviour are tested which show that on a country-level, cases *filed* by an importer against third countries, cases *faced* by the importer as well as exporter and a target with higher case filing *experience* are positive determinants of importer's current case filing intensity. *Second*, at the aggregate level, retaliatory anti-dumping practices do not seem to exist across the board for large and small importers as well as new and traditional users of anti-dumping. A positive and significant relationship is discovered when countries are divided based on income levels. A positive relationship is observed in the case of upper and lower middle income countries, with a pronounced effect in the latter. *Third*, the mechanisms of retaliation become well-marked at the sectoral level when dis-aggregated study is conducted. Sectoral retaliatory dumping seems to be favoured by the largest importers (including countries like the US, EU India, China and South Korea). The smaller importers do not seem to engage in retaliatory anti-dumping, however, like larger importers seem to target the countries that experienced anti-dumping users. The substitution effect of tariffs is evident in the top 10 large importers only (includes new liberalised emerging economies like India and South Korea).

1.2   Literature and evidence on anti-dumping

Within the realms of the political-economy approach, researchers have analysed the effect of macroeconomic factors on anti-dumping use and proliferation. Aggarwal (2004); Knetter and Prusa (2003); Tharakan (1995) have highlighted that anti-dumping is used as a mechanism to dowse import competition and protect domestic producers. Aggarwal (2004) emphasises that the calculation of 'injury', which is required to establish that dumping has taken place, are riddled with ambiguity and vary from one country to another. In the event of unfair and unnecessary protection being implemented through anti-dumping and other contingent protection measures, it is the consumers who lose due to the inability to organise and influence the governments undertaking such action. The proclivity to use anti-dumping has its roots

in several macroeconomic factors like increased imports or rising trade deficits (Aggarwal, 2004; Feinberg and Reynolds, 2006; Prusa, 2005), appreciating real external value of domestic currency (Feinberg, 1989; Knetter and Prusa, 2003; Niels and Francois, 2006), weakening economy manifested by lower GDP growth (Bown, 2008; Miranda et al., 1998; Prusa, 2005) and lowering of tariffs (Feinberg and Reynolds, 2006; Moore and Zanardi, 2009, 2011).
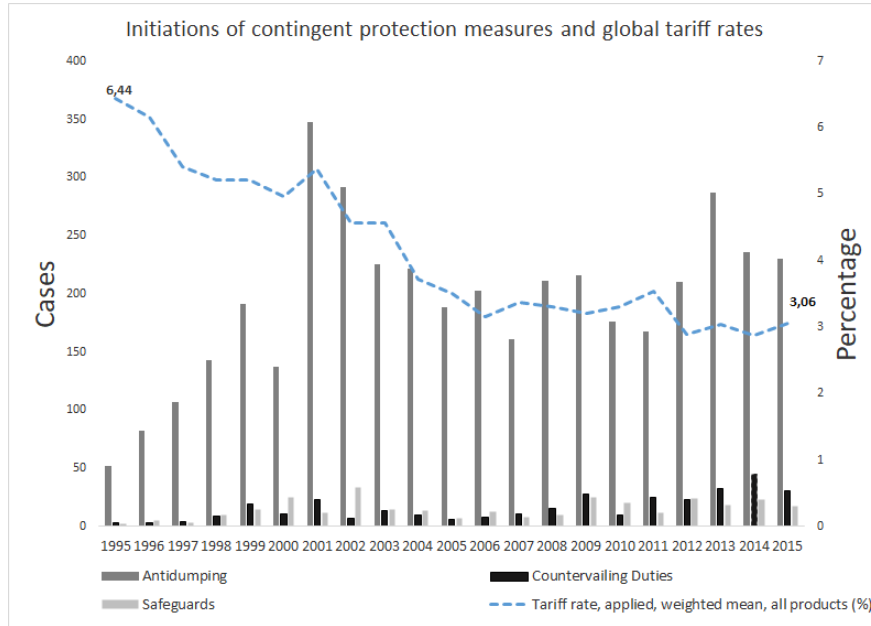
(a) Global
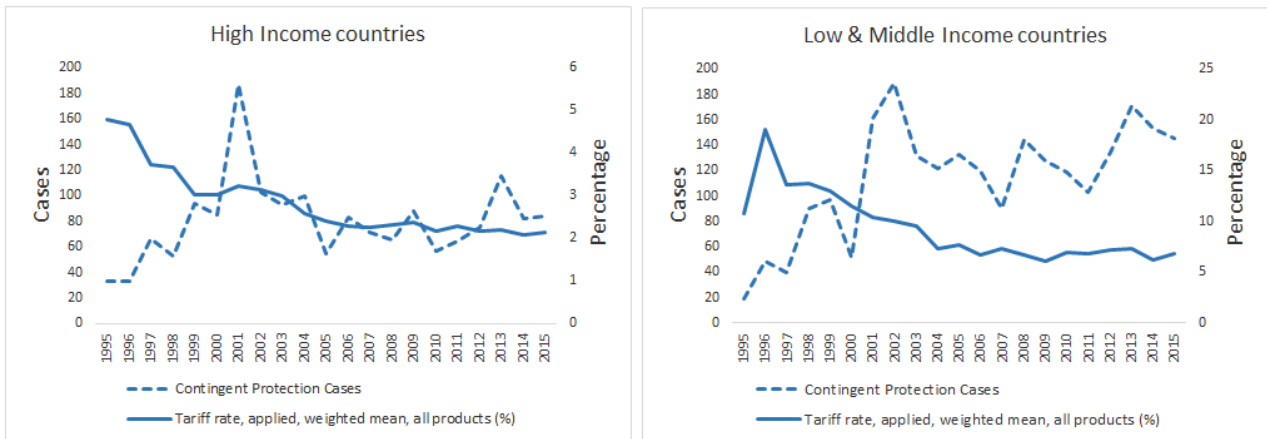
(b) Countries by income

Figure 1.1: Initiations of contingent protection measures and global values of applied tariff (all products, %), 1995-2015

Source : Author's calculation from WTO (2019e) data.

On the topic of lowering tariffs, Moore and Zanardi (2011) question whether trade liberalisation efforts have been undone through a *substitution* from tariffs to non-tariff measures.

At an aggregate level, Figure 1.1 hints at a possible *substitution effect* between tariffs and anti-dumping initiations (which is also corroborated by the results of Moore and Zanardi (2011) who find this effect exists only in a small group of heavy users of anti-dumping amongst developing nations).

With the emergence of newly industrialised developing countries, having a prominent role in the world economy and trade, several researchers have also focused on their escalating participation in anti-dumping usage (Bown, 2008; Feinberg, 2011). Bown (2008) emphasises the importance of analysing developing countries' expanded use of anti-dumping provisions, *first* - because of their increased capacity to initiate and fight disputes at the WTO; and *second* - as an escape valve to manage overall trade liberalisation. While until the early 2000s, the USA and European Union (EU) remained the highest users of anti-dumping provisions by the number of cases filed, on a metric of cases per million dollar of import the *new users*[1] are more intense users of contingent protection (specially anti-dumping provisions). Finger et al. (2001) indicate that for the 1995-1999 period, Brazil was five times and, India was seven times, more intense than the US in anti-dumping filings. Performing similar calculation this chapter finds that India[2] is five times more intense than the US in anti-dumping use for the period 2011-2015.

Figure 1.2 shows the global top ten reporters and targets of anti-dumping cases in 1995-2015 and Figure 1.3 shows the number of cases filed per trillion dollar of import value for the same reporters for the period 2011-2015. For another representation of the proliferation of anti-dumping activity, refer Table 1.1.

Table 1.1: Initiation of AD cases by reporting country income: number of cases and intensity (1995-2015)

Income category	Number of Cases			
	1995-2000	2001-2005	2006-2010	2011-2015
High income	365 (51%)	538 (42%)	365 (38%)	422 (37%)
Lower middle income	118 (17%)	314 (25%)	302 (31%)	259 (23%)
Upper middle income	229 (32%)	423 (33%)	300 (31%)	450 (40%)
Total	712	1,275	967	1,131

Source: Author's compilation using WTO database (WTO, 2019e)

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[1]Traditional users are the USA, the EU, Australia, and Canada (Prusa, 2005). Historical data on anti-dumping usage by Miranda et al. (1998) and Prusa (2001) show that prominent in the new user group are low and middle income economies of India, Mexico, Brazil, South Africa and Argentina.

[2]India is the number one country in terms of total anti-dumping cases filed in the period 1995-2016

We can see that the intensity of usage of anti-dumping as a trade policy has steadily fallen in the high income category from 1995 to 2015. This same intensity, however, has augmented in the lower middle income and upper middle income group. Examining the most active
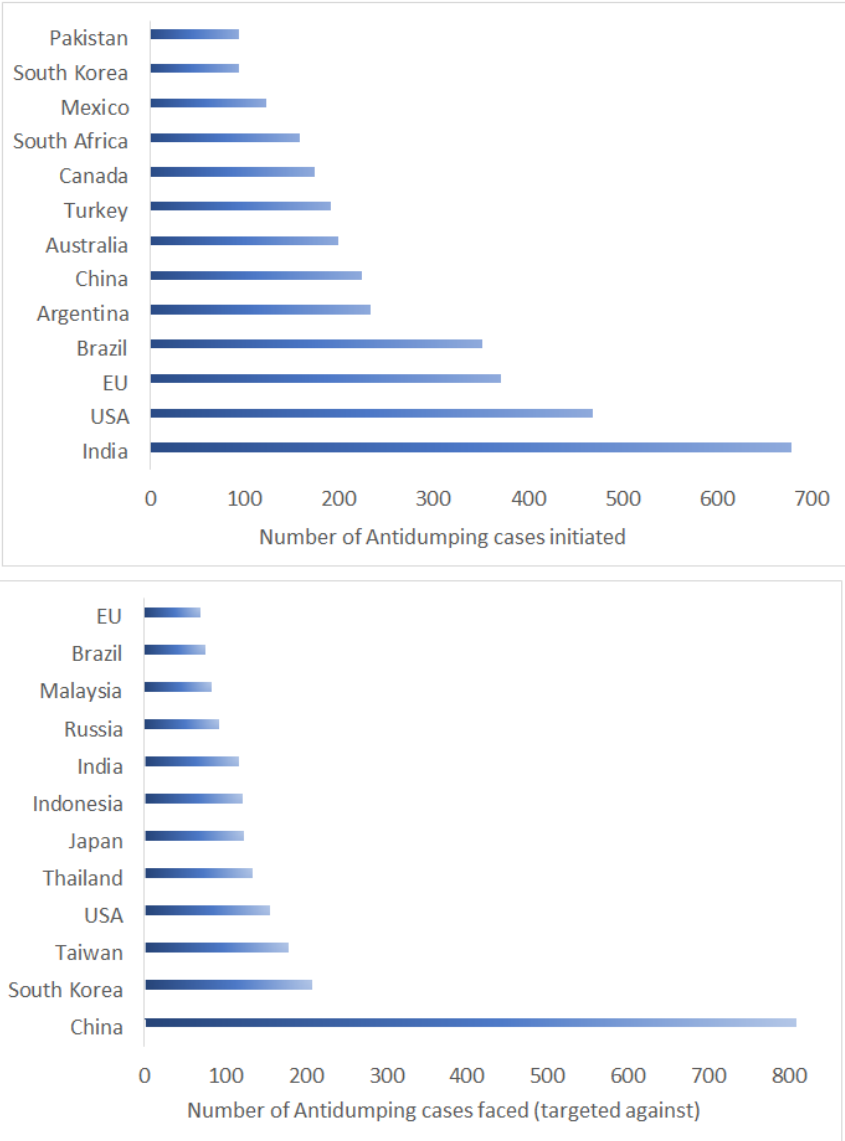
Figure 1.2: Top reporters and targets of anti-dumping cases, 1995-2015
Source : Author's calculation from Global anti-dumping database WTO (2019e)

industry sectors that initiate anti-dumping, we see that base metals and chemical sector are the most active in using anti-dumping policy with 41% of the total cases initiated in the 20 year period 1996 to 2015 (Figure 1.4).
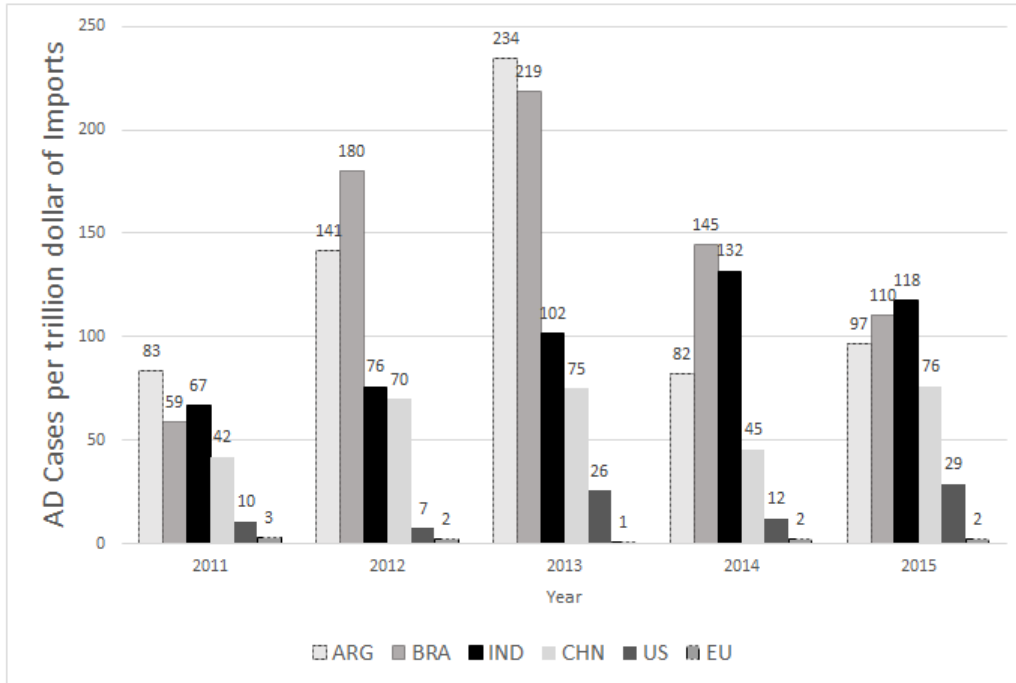
Figure 1.3: Anti-dumping cases per trillion dollar of import for the period 2011-2015

Source : Author's calculation from global anti-dumping database (WTO, 2019e) and (DOTS, IMF, 2019)

Retaliatory anti-dumping

Bown and Reynolds (2014) report that depending on the law firm involved, the private sector legal fees of petitioning a dispute at the WTO likely ranges from USD 250,000 to USD 750,000. In view of these high costs involved in dispute resolution, it is likely that countries may choose retaliation via anti-dumping over disputing an anti-dumping duty at the WTO[3]. The very threat of retaliation could also deter countries from imposing anti-dumping duties (Blonigen et al., 2000). Further, Feinberg and Reynolds (2018) suggest that retaliation is a *strategic tool* which can be used by a country to pressure the trade partner to remove its own anti-dumping measures against said country and that countries find it easier to retaliate via anti-dumping. Feinberg and Reynolds (2006)[4] also ask whether anti-dumping

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[3]The cost of retaliation may be relatively modest when compared to disputing at the WTO since such cases would be processed by existing bureaucrats in the departments responsible for anti-dumping activity (Feinberg and Reynolds, 2018).

[4]Feinberg and Reynolds's paper titled *The spread of anti-dumping regimes and the role of retaliation in filings* (2006), is a critical reference for this study. Therefore, it is important to clarify the parallels and extensions in this chapter vis à vis the aforesaid paper. First, this chapter expands the time period of analysis (we use 20 years between 1996 and 2015 in comparison to Feinberg and Reynolds's 8 year study from 1995-2003). Second, the dataset is bigger in terms of exporters and importers and includes all the users of contingent protection (against 41 importers and 72 exporters used by the authors). Third, the authors use a probit estimation to examine the probability of a country filing a petition in response to a
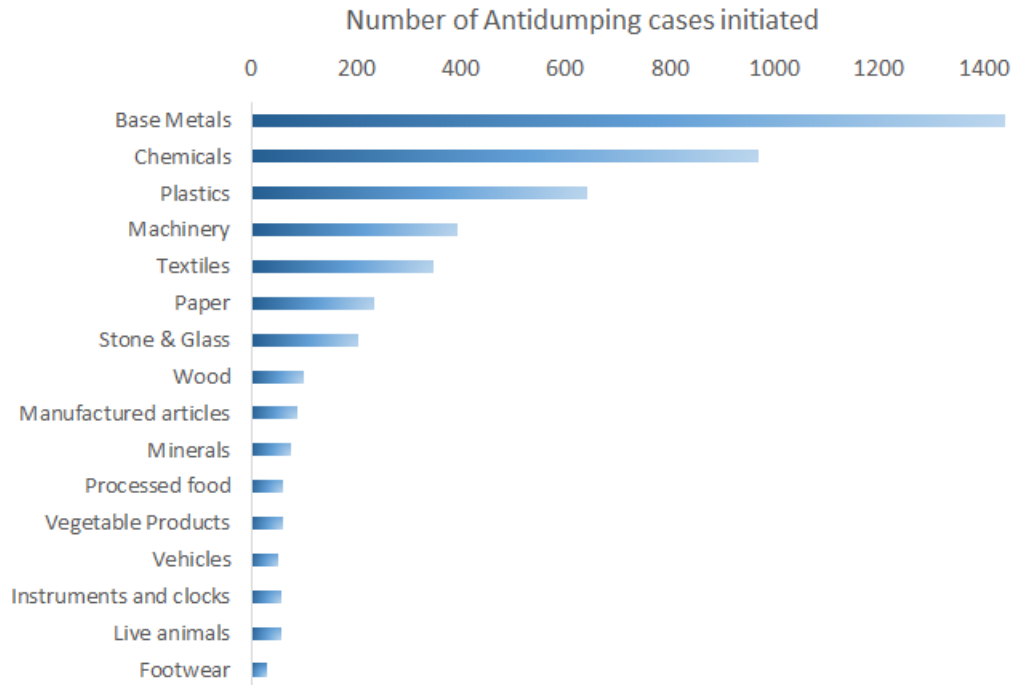
Figure 1.4: Initiations of anti-dumping cases, 1996-2015
Source : Author's calculation from WTO (2019a)

filings are motivated as retaliation against similar measures imposed on a country's exporters. They 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. They also differentiate between the theoretical motivations of 'retaliation' and 'learning' arguing that learning simply reflects changed awareness of the relative costs and benefits of bringing a case in contrast to retaliation which is motivated by a need to maintain credibility to deter future anti-dumping instigation.

Literature has recognised the growth in adoption of anti-dumping, as a defense mechanism and retaliation, specially in case of developing countries. This is the foundation of a prisoners' dilemma type of game in international trade where the non-cooperative equilibrium is inferior to the cooperative equilibrium. Countries support their domestic industry by adopting

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past petition against it. Here, in addition to probability we estimate incidence rates of the petitions filed as retaliation. Fourth, we use additional anti-dumping related variables (Total anti-dumping cases filed by the importer, anti-dumping cases filed globally in the year, importer and exporter's experience in filing anti-dumping cases, and, anti-dumping cases filed against the importer and exporter by third countries) to uncover the motivations of case filing activity in greater detail. Finally, unlike the authors, we provide insights into the importer's size-based and income level disparities between nations' use of retaliation as a strategic anti-dumping policy.

retaliatory practices, however end up decreasing the world welfare by attenuating world trade levels. In this setting, repeated games can bring a cooperative equilibrium (Bagwell and Staiger, 1990, 1999). By employing a sequential game, Bagchi et al. (2014) show that a credible threat of anti-dumping action can deter dumping actions, which ultimately leads to a win-win situation for both domestic and foreign firms. However, information asymmetries may lead nations to act either aggressively or tactically. Thus the payoffs from anti-dumping that a initiator country receives can vary depending on the *type* of target it faces.

Whether retaliation is a definite determinant of current anti-dumping activity is governed by two prerequisites. First, the country (expected to retaliate) must have necessary experience with WTO systems to be able to file an anti-dumping initiation itself. Second, there must be sufficient trade with the anti-dumping imposing country to warrant a retaliatory response (Blonigen and Bown, 2003).

Documenting recent trends in the use of anti-dumping, researchers have observed that traditional users of anti-dumping are increasingly becoming targets at the hands of anti-dumping enforcement authorities of new users. For example, the USA has been target of 276 cases in the 1995-2015 period (against the 606 cases initiated by the USA against global exporters in the same period). New users (who mostly fall in the upper and lower middle income group of countries) could embark on the retaliation route partly because of their dropping tariffs and increased institutional capacities (as discussed before), and also in an effort to establish regional hegemony as their economic importance increases. Studies have demonstrated that the East Asian economies have been targets of anti-dumping actions by the traditional users. This may have provoked retaliatory response from the East Asian economies (James, 2008). Similarly, South Asian (particularly India and Pakistan) and Latin American nations (particularly Argentina, Brazil and Mexico) that have added institutional capacities to initiate protection measures have used them full throttle when other countries target them Feinberg and Reynolds (2006).

It is to be clarified that this chapter captures part of the *retaliation* story in trade disputes because those targeted by anti-dumping have several options to respond. Response could be simply by inaction, retaliation via new anti-dumping petition or go directly to the WTO via a dispute resolution route. In this chapter, we focus on the first and second route i.e. inaction and retaliation via an anti-dumping petition. Feinberg and Reynolds (2018) also find that contingent to large import flows, a retaliatory response from target to instigator country becomes likely, but this response is more likely to be via an anti-dumping case than a dispute

at the WTO. While our results focus on only anti-dumping as the channel of retaliation, they sketch out the ways in which targets of anti-dumping petitions weigh out their options in deciding a response and we capture this through several *determinants* of anti-dumping.

Furthermore, extant literature has generally focused on country-level studies (Blonigen and Bown (2003) for the US, Niels and Francois (2006) on Mexico, and Prusa (2005) on the developed nations), however, to the best of our knowledge, there is no study that captures the mechanisms of anti-dumping retaliation at the industry level, leave alone both industry and country level. This chapter has an intended scope to do just that: study the macro behaviour of trading nations in retaliatory anti-dumping, as well as, take a deeper dive into the sectoral mechanisms of retaliation in contingent protection.

At the ***country-level***, the retaliatory action could be driven by strategic government officials or departments with a mandate to respond to an anti-dumping petition by a trade partner. The government agency responsible for anti-dumping petitioning may be more likely to make affirmative decisions against exporter countries who have targeted them (importer country) in the past (Blonigen and Bown, 2003; Feinberg and Reynolds, 2006). The sectors that the anti-dumping making department chooses could be a vector of political, economic and industry-influence factors. The legal wherewithal that a nation possesses is also an important determinant of a country engaging in retaliation. The examples of these country-level retaliation are wide-ranging. The US and Mexico, Brazil and Argentina, EU and India, have on average 1 anti-dumping case per year against each other in the two decade period 1996-2015. In country pairs with China as the target or instigator, the average number of cases per year go up by 2 to 7 times suggesting the presence of retaliatory motives. Consider the example of the European Union (EU) and China. Since its accession to the WTO in 2001 till 2015, China has been the target of 90 anti-dumping cases from the EU (averaging 6 cases per year). In the same period, China has targeted EU in 26 anti-dumping cases with an average 2 cases per year. In the case of China and US pair, the US has on average filed 7 anti-dumping cases per year against China since its accession to WTO. China on the other hand has filed on average 3 anti-dumping cases per year against the US. Thus, case based evidence points at a natural possibility that anti-dumping filings may be motivated as retaliation against similar measures imposed on a country's exporters.

Considering the ***industry level***[5] driver, as pointed out by Feinberg and Reynolds (2006), it

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[5]The Harmonized Commodity Description and Coding System, also known as the Harmonized System (HS) comprises approximately 5,300 article/product descriptions that appear as headings and subheadings,

is possible that a case against an industry category in a particular country in year *t-1* is filed at the behest of different group of firms than the subsequent case in the same sector in year *t*. They suggest a simple game to better understand the motivation of industry level filings. This chapter expounds the game with a practical example. Let us begin with an assumption that the probability of success of an anti-dumping petition by the leather industry in Morocco is higher when an anti-dumping action was taken against it by the Indian leather industry in the previous year. Subsequently, let us consider two Moroccan firms A and B in the same leather industry producing different set of products, bags and belts respectively. Had an anti-dumping petition been filed against A (bags) in previous year, firm B (belts) will have a higher likelihood of filing an anti-dumping case in period 2 considering that the likelihood of the petition's success are higher (recall our aforesaid assumption). The petition will of course be filed under the head of Leather industry. Thus retaliation by B (belts) is not at the firm level if the anti-dumping authority in Morocco is likely to consider past filings against the leather industry (and not just firm A (bags)) of Morocco into account when making decisions. Of the several instances of industry level retaliation, a recent example is of Israel and Turkey in the glass industry. In 2014, Turkey imposed anti-dumping duties to the tune of 53% on glass coming from Israel. These were followed up with Israel imposing duties on float glass imported from Turkey. The US-China tussle in tire industry has been heavily debated and girdled with continuous retaliatory actions since 2009. The US administration levied safeguard duties to the tune of 35% tariff in year one, 30% in year two and 25% in year three on tires coming from China in a bid to 'protect' domestic jobs in the auto industry. China retaliated by imposing anti-dumping (maximum 21.5%) and countervailing duties on US made special utility automotive in the same year. These were revoked in 2012. Again in 2015, the US imposed countervailing duties in addition to anti-dumping duties ranging from 9% to 22% on truck and bus tires coming from China (Prusa, 2011). What is evident from this particular example is that the retaliatory behaviour does not remain restricted to only one form of protection, but trespasses into the area of other contingent protection measures. Also, countries may target each other not specifically in the same product, rather the same industry, whether it is up or down the supply chain.

In the ensuing sections is provided the empirical model-including data, sample and empirical methodology (Section 1.3); followed by results at country level (Section 1.4) and sectoral levels (Section 1.5) including robustness tests; and, a conclusion (Section 1.6) of the study.

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arranged in 99 chapters, grouped in 21 sections. Like Feinberg and Reynolds (2006), we acknowledge that HS sections are too broad a category to ascertain whether the same firms are involved in *tit for tat* anti-dumping initiations. However, there exists anecdotal evidence that this does happen, which, like the authors, we have also described in the main text.

1.3 Empirical Analysis

1.3.1 Sample and Data

We use data from the World Bank's Temporary Trade Barriers Database (Bown, 2016) for the period 1996-2015. This data-set contains case wise details at product level for 51 countries that have used anti-dumping. In this analysis we exclude Taiwan (due to unavailability of macro-economic indicator data) and the Gulf Cooperation Council (GCC) countries (as they report anti-dumping activity as a group). Therefore, our sample consists of 49 active users of contingent protection, specifically anti-dumping. For the list of contingent protection user countries refer Appendix A Table A.1.

In the first stage of our analysis, we concentrate on the country-level indicators for the construction of the variables. To reiterate, we are examining the role of retaliation in current anti-dumping activity. The dependent variables of interest here is the number of anti-dumping protection cases filed at the WTO by an importing nation (i) against an exporter (e) in the year (t). We call this measure **$Cases_{iet}$**.

The first primary explanatory variable, **Retaliation**$_{ei(t-1)}$ is the number of anti-dumping cases filed by the (now) exporting nation against the (now) importing nation in the previous year[6]. At the aggregate level, it is not clear why countries would retaliate using an anti-dumping petition against a country which has targeted it in a particular industry section. However, in increasingly protectionist stands, specially in developing countries, governments that have *learnt* the nuances of anti-dumping may use them to retaliate against initiators, irrespective of the target industry (Feinberg and Reynolds, 2006; Moore and Zanardi, 2011).

We employ a battery of anti-dumping related explanatory variables to examine what anti-dumping related factors, other than retaliatory motives, explain a country's decision to file an

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[6]Almost all papers that we have reviewed about retaliatory anti-dumping have considered a one year effect to examine the role of Retaliation (Aggarwal, 2004; Blonigen and Bown, 2003; Blonigen et al., 2000; Feinberg and Reynolds, 2006, 2018; Moore and Zanardi, 2011). Prima facie, this may look like an arbitrary choice, however, it seems to be a good start for analysis because prominent users of anti-dumping take between 200-400 days for filing a case at the WTO once the internal decision is taken to initiate an anti-dumping case. For instance, the US government takes on average 200 days for case filing once the decision is made by the US International Trade Commission (ITC) (calculated from(Bown, 2016)). Not only this, even the WTO Dispute Settlement Body *allows* retaliation roughly 550-600 days of a dispute if no agreement is reached between the disputing countries (WTO, 2019b). Considering this, we also proceed with a one year lag, however, we also test our hypothesis with a two and three year lag as a robustness check. Results presented in Appendix A Table A.6

anti-dumping case against trade partners. The first variable to this effect is **Deflection**$_{i(t-1)}$ which is the number of anti-dumping initiations globally (net of the anti-dumping initiations by the importer country). Our intent of including this variable is that increased anti-dumping activity world-wide will lead to a substantial diversion of imports[7], thereby enhancing import competition pressure prompting elevated anti-dumping action from the importer itself. The next variable is **Total AD initiated**$_{i(t-1)}$ which is the total cases filed by the importer country in the year *t-1* net of the cases against the particular exporter. With this variable we endeavour to discern the strategic protectionist behaviour of a country in a particular year. A positive coefficient is consistent with a world in which the importing country is building protection as a matter of global trade policy. This may be reflective of the government and type of leadership, however, in this study, we desist from making an inference about these political aspects.

The next anti-dumping related variable is **Cases faced**$_{i(t-1)}$ which captures the anti-dumping cases against the importer by all countries (net of the cases by exporter) in the previous year. This is in line with anti-dumping *echoing* wherein different countries sequentially impose anti-dumping measures on the same product from the same exporter (Tabakis and Zanardi, 2017). Messerlin (2004) corroborates this concept with US and EU anti-dumping petitions against China wherein a chain reaction is set in motion due to increased awareness about Chinese dumping or higher probability of affirmative action if an anti-dumping case is already filed by a third country. Going a step further, we include **Cases faced**$_{e(t-1)}$ for the exporter. The importer may be prompted to initiate more anti-dumping cases against an exporter which is the target of intensified global anti-dumping with the same incentives of echoing.

As a final anti-dumping related explanatory variable, we include **Experience**$_{i(t-1)}$ since countries with extensive experience with anti-dumping petition activity may have higher proclivity to initiate a case (Feinberg and Reynolds, 2018). This variable is the average annual number of anti-dumping petitions filed by the importer between 1995 and the year previous to the year of current petition (i.e. from 1995 to year (t-1)). The choice of the year 1995 is in line with Feinberg and Reynolds (2018) which coincides with the formation of the WTO. Again, we include this variable for the exporter (target country) as well (**Experience**$_{e(t-1)}$), to uncover whether there is intensified targeting of experienced users of anti-dumping. It is possible that experienced users are targeted less as they have the capacity to retaliate. It is also not unlikely that experienced users may be targeted more to deter their anti-dumping

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[7]There is a limit to which domestic consumption can absorb curtailed exports. Also, exporters cannot immediately stop producing if subject to anti-dumping. Inventories and running stock are diverted to other countries which do not impose anti-dumping duties on the exporters of a country.

action against the (now) initiator. Therefore, we are agnostic about the impact of target's anti-dumping experience on a country's decision to file an anti-dumping petition against the target.

The next set of variables we use relate to the trade policy of a country. We include $\textbf{Tariff}_{i(t-1)}$ which is the applied[8] weighted mean tariff (all products (%)) from the World Bank (2020) to examine the effects of tariff movement on anti-dumping behaviour. Our expectation, specially for developing countries, is that lower tariff rates are substituted by increased anti-dumping activity. Hence we expect a negative sign on this coefficient. Next, we include a variable called $\textbf{Imports}_{ie(t-1)}$ sourced from the DOTS, IMF (2019). Literature is replete with evidence of the positive link between imports and contingent protection activity (Blonigen and Prusa, 2001; Prusa, 2001, 2005; Zanardi, 2004). The results in aforesaid works support the hypothesis that increased imports from the exporter are seen as a threat to domestic industry and hence lead to a surge in contingent protection activity. Finally, we include a dummy $\textbf{Trade Agreement}_{ie(t-1)}$ which takes a value 1 if a trade agreement exists between the two trade partners. Tabakis and Zanardi (2019) investigate the effects of negotiation and implementation of trade agreements on the use of anti-dumping by member countries against non-member countries. Their results show a building-block effect of such trade agreements on multilateral trade cooperation when it comes to anti-dumping. However, it is important to state that we cannot disregard the potential endogeneity arising due to the fact that country-pairs self-select in trade agreements. As suggested by Baier and Bergstrand (2004), this endogeneity of trade agreements biases the estimation of the impact of such agreements within a gravity framework. For the purpose of this analysis, we believe that the presence of a trade agreement could go both ways. It could lead to an increase in imports consequently resulting in more protection or, on the other hand, could lead to better economic relations between the countries, leading to reduced possibility of contingent protection. In view of this ambiguity, we declare an agnostic view on the role of trade agreements in anti-dumping propensity.

In the end, we include standard control variables to account for potential anti-dumping activity. First, we include $\textbf{GDP growth}_{i/e(t-1)}$ rate of the importer (case initiator) and the exporter (target) as macroeconomic determinants of anti-dumping activity. Knetter and Prusa (2003) have shown that one standard deviation fall in domestic real GDP increases filings by

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[8]In line with Moore and Zanardi (2011) we use applied tariffs and not bound tariffs for the reasons cited by the authors which are: (i) whether trade policies in place actually affect anti-dumping behaviour rather than envisaged cuts in the bound (maximum) tariffs; and, (ii) for developing countries, there is a substantial difference between applied and bound tariffs.

23%. Bown (2008) and Feinberg (2011) find a negative correlation between GDP growth and anti-dumping activity. If the real GDP of the importer country grows negatively or stays stagnant, the domestic producers find it hard to be competitive against foreign exporters. Therefore, the domestic producers, and linked lobbies and influence groups, are inclined to pressurise the government to implement protectionist measures which may manifest in the form of anti-dumping instigation against foreign exporters and countries. On the other hand, with a growth in GDP, domestic consumption could increase resulting into increased imports which in turn could accentuate anti-dumping activity. Also, countries with higher GDP growth rate could have better institutional and legal capacities to instigate and maintain anti-dumping actions. Again, at this stage, we have an agnostic view on the sign of GDP growth which can have different effects in different sub-samples of this study.

Another macroeconomic control which literature has stipulated as a determinant of anti-dumping activity is **Real Exchange Rate**$_{ie(t-1)}$ which is the bilateral exchange rate[9] between the importing and exporting country pair in year t-1. One of the first papers that made an empirical inference on the link between exchange rate and anti-dumping was by Feinberg (1989). Using data pertaining to US anti-dumping filings against Brazil, Mexico, Japan and Korea, for 24 quarters between 1982 and 1987, he finds that a depreciation of the US dollar (i.e. higher bilateral exchange rate) against the foreign currency leads to significantly higher incidences of anti-dumping, specially against Japan. The explanation of this phenomenon is attributed to the lowering of foreign firm's export prices to the US leading to higher chances of determination of material injury and therefore higher proclivity of filing anti-dumping petitions. Knetter and Prusa (2003) manifest opposite conclusions showing that US dollar depreciation decreases import penetration, ceteris paribus, making it less likely that an injury is materialised. Citing these two confounding results in their extensive literature review on anti-dumping, Blonigen and Prusa (2001) stipulate that the effect of exchange rate on anti-dumping is equivocal and depends on the importance of decision, i.e. dumping or injury. For the purpose of this study, we are inclined to argue that a decrease in real exchange rate (higher value of domestic currency in terms of the trading partner's currency) implies that exports become more expensive and imports become cheaper; indicating a loss in trade competitiveness which could be a driver of increased anti-dumping.

Summary statistics for the country level analysis variables are provided in Table 1.2. In this study, we envisage a possible shifting of signs with respect to variables and controls from

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[9]We calculate lagged log bilateral real exchange rates using nominal exchange rate and consumer price index data from the OECD's database available for 164 countries (OECD, 2019c,d). However, unavailability of CPI data for several countries reduces the sample size.

Table 1.2: Summary Statistics, Aggregate Analysis

Variables	N	Mean	SD	Min.	Max.	Source
Cases_{iet}	106,820	0.0366	0.326	0	17	
$\text{Retaliation}_{ei(t-1)}$	106,820	0.0297	0.308	0	17	
$\text{Deflection}_{i(t-1)}$	106,820	233.5	58.55	118	365	
$\text{Total AD initiated}_{i(t-1)}$	106,820	4.666	9.613	0	78	WTO (2019e)
$\text{Cases faced}_{i(t-1)}$ (Initiator)	106,820	2.385	6.007	0	57	
$\text{Cases faced}_{e(t-1)}$ (Target)	106,820	1.280	4.250	0	57	
$\text{Experience}_{i(t-1)}$ (Initiator)	106,820	4.487	8.306	0	41	
$\text{Experience}_{e(t-1)}$ (Target)	106,820	2.075	6.078	0	41	
$\text{ln Imports}_{ie(t-1)}$	106,820	13.42	7.951	0	34.46	DOTS, IMF (2019)
$\text{Tariff}_{i(t-1)}$	92,816	6.254	5.000	0	44.94	World Bank (2020)
$\text{Trade Agreement}_{ie(t-1)}$	106,820	0.115	0.319	0	1	WTO (2019c)
$\text{GDP growth}_{i(t-1)}$ (Initiator)	105,576	3.910	3.764	-14.81	18.29	World Bank (2018a)
$\text{GDP growth}_{e(t-1)}$ (Target)	99,910	3.906	5.805	-62.08	123.1	
$\text{ln Real Exchange Rate}_{ie(t-1)}$	70,947	2.62	2.73	-4	11.65	OECD (2019c,d)

the previously established studies in literature. This is because unlike previous studies that focus on a select group of countries[10] and relatively shorter sample periods, we carry out an exhaustive study with all users of contingent protection (except Taiwan and the Gulf Cooperation Council) for a two decade period between 1996 to 2015. As robustness checks, we employ several sensitivity measures by dividing the sample by size of importer in terms of trade value, by income categories, segregating into traditional and new users of anti-dumping, and, excluding heavy users of anti-dumping in recent years.

Political economy literature suggests that non-tariff barriers like anti-dumping duties may pose a potential endogeneity problem with respect to the estimated impact from surge in imports. While research work has relied on lagging of independent variables as a strategy to tackle endogeneity, it is argued that lagging is almost never a robust solution to endogeneity problems in observational data. In our specific case, the strategy of lagging independent variables is different from tackling endogeneity. Lagging is employed to trace out the path dependence of independent variables used in our econometric analysis. We have three reasons for doing this. First, anti-dumping authorities look at past performance to decide on the merit of a filing (and petitioners take this aspect into account when deciding whether to file a case or not) (Moore and Zanardi, 2011). Second, non-tariff barriers and trade defence instruments are often implemented in reaction to an unexpected or rapid increase in imports. Since we use

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[10]Knetter and Prusa (2003) use only the 4 traditional users (Australia, Canada, EU and the US), Michael and Nogués (2006) focus on only Latin America and Caribbean, Bown (2008) uses 9 *new* users, Moore and Zanardi (2011) use 29 developing and 6 developed countries

annual trade data, our analysis cannot control for the exact date of implementation of each policy. Therefore, we have a risk of the estimate biased toward zero if not lagged, leading to an underestimation of the potentially negative treatment effect. Third, using lags ensures that we account for changes in trade, which do not follow immediately, but only after some time of adaptation (Ghodsi et al., 2017).

Therefore, in this chapter which focuses on retaliatory motives of anti-dumping users, we acknowledge that in terms of potential endogeneity, reverse causality is part of the explanation. Retaliation as a motive for greater anti-dumping activity is not new and countries have employed anti-dumping duties as the preferred tool when challenging countries that have targeted them in the past (Bown and Crowley, 2007; Feinberg, 2011).

1.3.2 Estimation Technique

$Cases_{iet}$ is a non-negative count variable, therefore, the regression technique preferred is a negative binomial regression, which is essentially a Poisson model with a flexibility to allow for over-dispersion (variance of observed counts is larger than the mean empirically). In a negative binomial model, an unobserved effect is introduced into the conditional mean (Wooldridge, 2002). Since the data has a large number of zeroes, the distributional assumption of a negative binomial type model may also stand challenged. In this case, a common alternative is a Zero inflated negative binomial model. This type of model has two categories of zeroes. First, structural zeroes - occurring with a probability of one. Second, sampling zeroes - occurring by chance. To distinguish between structural and sampling zeroes, the model warrants identification of some specific indicators (Warton, 2005). In this case, this would mean that some countries do not have the possibility to use anti-dumping. However, since the sample consists of only anti-dumping making countries (on the importer side), we do not find the zero inflated model applicable.

Coming to the choice of fixed effects versus random effects modelling, in case of panel data, fixed effects models are attractive for their ability to control for time invariant characteristics. In the case of count models (specially with over dispersion), a test like the Hausman test to choose between the two (fixed or random effects) is not considered appropriate as a true fixed effects method because it does not control for unchanging covariates (Allison and Waterman, 2002). As a solution they suggest unconditional estimation of a fixed effects negative binomial model by including dummy (indicator) variables for all individuals, in this case the countries. Therefore, we include country and time dummies in all the specifications. However, for large samples, computational issues associated with the multiple fixed effects or time/country

dummies, render the negative binomial regression models ineffective (models do not converge). To address this, we utilise the iterative **poisson pseudo-maximum likelihood** (PPML) estimation procedure that facilitates the inclusion of numerous fixed effects for large data sets and also allows for correlated errors across countries and time (Silva and Tenreyro, 2006, 2011). As a summary of the data and methods, we present the main estimation equation in its multiplicative form:

$$
\begin{aligned}
Cases_{\text{iet}} =exp(&\beta_0 + \beta_1 Retaliation_{ei(t-1)} + \beta_2 Total\ AD\ initiated_{i(t-1)} + \beta_3 Deflection_{i(t-1)} \\
&+ \beta_4 Cases\ faced_{i/e(t-1)} + \beta_5 Experience_{i/e(t-1)} + \beta_6 Tariff_{i(t-1)} \\
&+ \beta_7 ln\ Imports_{ie(t-1)} + \beta_8 Trade\ Agreement_{ie(t-1)} + \beta_9 GDP\ growth_{i/e(t-1)} \\
&+ \beta_{10} ln\ Real\ Exchange\ Rate_{ie(t-1)} + \gamma_t + \nu_i + \lambda_e)\epsilon_{iet}
\end{aligned}
\tag{1.1}
$$

In the Appendix A Table A.7, we also provide results with a probit estimation to check the extensive margin of anti-dumping case filing probability. In this case, the dependent variable ($Cases_{iet}$) is coded as a binary variable taking values 0 if an anti-dumping case is not filed and 1 if a case is filed.

1.4 Results

1.4.1 Baseline specification

Estimation results in the form of Incidence Rate Ratios (IRR) are reported in Table 1.3. Since our study examines the intensity in terms of incidence of cases filed, like Knetter and Prusa (2003) and Prusa and Teh (2010) we report IRRs to better gauge the number of events (case filings) taking place. IRR is the log of the ratio of expected counts[11]. What we refer to as counts is technically a rate. The explained variable $\boldsymbol{Cases_{iet}}$ is the number of anti-dumping cases filed by an importer against an exporter in a year, which by definition, is a rate (since it is an event happening over a period of time). In simple terms,

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[11] Our setup reports Incidence Rate Ratios (IRR) of the distribution which is essentially a Poisson distribution. Poisson / Negative Binomial regression coefficients can be interpreted as follows: the difference between the log of expected counts, where formally, this can be written as $\beta = \log(\mu_{x+1}) - \log(\mu_x)$, where β is the regression coefficient, μ is the expected count and the subscripts represent where the predictor variable, say x, is evaluated at x and x+1 (implying a one unit change in the predictor variable x). As we know that the difference of two logs is equal to the log of their quotient, $\log(\mu_{x+1}) - \log(\mu_x) = \log(\mu_{x+1} / \mu_x)$, and therefore, we could have also interpreted the parameter estimate as the log of the ratio of expected counts. This is the explanation of the *ratio* in the IRR. For example, referring to Table 1.3 column 1, the IRR is 1.070 and std. error 0.0412. This same value can be expressed as negative binomial (or poisson) coefficient as 0.0673 with std. error 0.0385. Thus the IRR provides us an interpretation in respect of a value greater or lesser than one to exhibit a positive or negative relationship between the variables. However, essentially it captures the *count* coefficient and the std errors are also essentially same.

$$\text{IRR} = \frac{\text{counts predicted by the model when the variable of interest is 1 unit above mean value, all other variables at means}}{\text{counts predicted when all variables are at the means}}$$

An IRR of less than 1 indicates a negative relationship between the dependent variable and the regressor. In the first column, we include only **Retaliation**$_{ei(t-1)}$ as the regressor with country and time dummies and standard errors clustered at the country-pair level. We observe that the IRR is 1.07 and significant at the 1% level. However, on a step-wise addition of (i) anti-dumping related variables (column 2) (ii) trade policy variables (column 3) and (iv) Macroeconomic controls (column 4), we observe that the Retaliation$_{ei(t-1)}$ variable is not statistically significant[12].

The variable that is consistently significant is **Total AD initiated**$_{i(t-1)}$ indicating that the anti-dumping activity of a country against an exporter is correlated to its overall anti-dumping activity in the previous year. An interesting result that is evident from Table 1.3 is that *echoing* is a significant determinant of a country's anti-dumping activity. As the **Cases faced**$_{i(t-1)}$ by a country increase, its own anti-dumping activity surges. This means a one-unit increases in cases faced would increase counts of anti-dumping activity by the importer by roughly 2%. From the coefficient of **Cases faced**$_{e(t-1)}$ (target) we observe that the importer also participates in the *echoing* phenomenon against the exporter (target) as the cases against exporter rise by about 1.3% for every one unit increase in cases that the exporter faces globally.

Regarding anti-dumping **Experience**$_{e(t-1)}$, with respect to the target country, Feinberg and Reynolds (2018) show that retaliatory anti-dumping increases as the countries gain experience in anti-dumping filing activity. This may be a results of expenses plummeting as countries establish an order of anti-dumping activity. In our case, the dependent variable is anti-dumping cases and not retaliation. We see a positive correlation between anti-dumping activity against an exporter and its anti-dumping experience. This result supports the argument that more intense users of anti-dumping are also targeted more. This could be attributed to exporter's past anti-dumping behaviour against the importer.

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[12]Note the observations are lesser in column 4 compared to column 3 of Table 1.3 as a result of adding macroeconomic controls like GDP growth and real exchange rate. To ensure that our results are not driven by a reduction in sample size, we estimate equation 1.1 with a step-wise addition of controls and see that the sign and significance of Retaliation$_{ei(t-1)}$ remain unaltered. This check is presented in Appendix A Table A.3 and we observe that despite the reduction in sample size the signs and significance of the variables of interest remain unaltered.

Table 1.3: Intensity of AD initiations: Poisson pseudo-maximum likelihood estimation (Incidence Rate Ratios), 1996-2015, Baseline specification

Variables	(1)	(2)	(3)	(4)	(5)† Target
Retaliation$_{ei(t-1)}$	1.070*	1.071*	1.068*	1.063	1.046
	(0.0412)	(0.0404)	(0.0390)	(0.0485)	(0.0510)
Deflection$_{i(t-1)}$		1.001	1.001	1.002*	1.001
		(0.000685)	(0.000690)	(0.00123)	(0.00132)
Total AD initiated$_{i(t-1)}$		1.016***	1.018***	1.017***	1.017***
		(0.00187)	(0.00238)	(0.00320)	(0.00271)
Cases faced$_{i(t-1)}$ (Initiator)			1.010*	1.014*	1.018**
			(0.00563)	(0.00749)	(0.00727)
Cases faced$_{e(t-1)}$ (Target)					1.013***
					(0.00500)
Experience$_{i(t-1)}$ (Initiator)			0.991	0.994	0.996
			(0.00621)	(0.00806)	(0.00805)
Experience$_{e(t-1)}$ (Target)					1.028**
					(0.0109)
ln Imports$_{ie(t-1)}$				1.099***	1.093**
				(0.0401)	(0.0391)
Tariff$_{i(t-1)}$				0.993	0.992
				(0.00843)	(0.00840)
Trade Agreement$_{ie(t-1)}$				1.394***	1.402***
				(0.138)	(0.138)
GDP growth$_{i(t-1)}$ (Initiator)				1.030**	1.030***
				(0.0124)	(0.0117)
GDP growth$_{e(t-1)}$ (Target)				1.006	0.997
				(0.00998)	(0.00916)
ln Real Exchange Rate$_{ie(t-1)}$				0.690***	0.737***
				(0.0743)	(0.0750)
				(0.0743)	(0.0750)
Constant	0.0288***	0.0225***	0.0250***	0.344*	0.384
	(0.0109)	(0.00916)	(0.0103)	(0.205)	(0.230)
Observations	86,500	86,500	86,500	50,032	50,032
No. of AD initiating countries	49	49	49	49	49
R^2	0.470	0.475	0.475	0.493	0.507

† Includes target side variables for experience and cases faced. Dependent Variable - Number of contingent protection **Cases**$_{iet}$. Coefficients reported as incidence-rate ratios. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies and country fixed effects. We have a balanced panel of 106,820 observations for 49 countries. However, the PPML excludes certain observations to ensure that estimates exist.

Like Moore and Zanardi (2011) we expect to observe a negative relationship between trade liberalisation and anti-dumping use, however, the coefficient of **Tariff**$_{i(t-1)}$ does not achieve nominal statistical significance (although the sign is negative as per our expectation). In case of **Trade Agreement**$_{ie(t-1)}$, contrary to Tabakis and Zanardi (2019) we find that the

presence of an agreement increases the expected counts of anti-dumping cases by 40%. This highly positive effect could be attributed to a rise in imports with the trading partner resulting in an escalation of anti-dumping cases. We must also note here that most Trade Agreement texts retain the WTO statue on anti-dumping measures, thereby not inducing dissuasion of anti-dumping initiations or measures.

In terms of economic performance, importer countries on a positive GDP growth path exhibit higher anti-dumping activity (coefficient of **GDP growth**$_{i(t-1)}$ is positively correlated to anti-dumping cases and statistically significant). We believe, this effect which is opposite to that observed by Knetter and Prusa (2003) and Bown (2008) could be ascribed to two reasons. First, higher growth could lead to higher consumption making way for progressing imports, consequently, surge in anti-dumping activity. Second, higher growth could also describe the overall rising development in a country which could lead to added legal and institutional capacities capable of anti-dumping activity. The results for **Imports**$_{ie(t-1)}$ show a positive relationship and and **Real Exchange Rate**$_{ie(t-1)}$ show a negative relationship with rising anti-dumping activity which is in line with our expectation explained previously.

From Table 1.3, we observe that the **Retaliation**$_{ei(t-1)}$ becomes statistically non-significant when controlling for the *echoing* effect, experience in anti-dumping activity of the initiator and target and other macro-economic factors. We suspect that the aggregate results may camouflage some importer size related or development level heterogeneity that may exist due to difference in anti-dumping use by countries. Researchers have frequently discussed the different behaviour in anti-dumping activity of the developed and developing countries (Blonigen and Prusa, 2001; Miranda et al., 1998; Miyagiwa et al., 2016; Zanardi, 2004) or have focused on individual country behaviour (Feinberg (2010) on India, Niels and Francois (2006) on Mexico and Oliveira (2014) on Brazil). In further sections we tackle the question of retaliation based on size of importer by value of trade. We also perform the analysis based on income levels of countries to understand how the motive of retaliation affects anti-dumping activity of countries. For this part, we use the World Bank's classification of income categories (World Bank, 2019c).

1.4.2   Anti-dumping activity by income level of importer

In Table 1.4, we present results obtained by estimating equation 1.1 segregating our observations by the level of income of the importer. We use income related divisions[13] specified

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[13]We do not report the group of Low income economies since no country from this group features in anti-dumping users.

Table 1.4: Intensity of AD initiations: Poisson pseudo-maximum likelihood estimation (Incidence Rate Ratios), 1996-2015, Income-wise Analysis

Variable	(1) High Income	(2) Upper middle Income	(3) Lower middle Income
Retaliation$_{ei(t-1)}$	1.002	1.097*	1.284*
	(0.0540)	(0.0586)	(0.175)
Deflection$_{i(t-1)}$	0.999	1.002	1.078***
	(0.00207)	(0.00208)	(0.0115)
Total AD initiated$_{i(t-1)}$	1.006	1.015**	1.173***
	(0.00534)	(0.00687)	(0.0286)
Cases faced$_{i(t-1)}$ (Initiator)	1.082***	0.985	1.023
	(0.0299)	(0.0108)	(0.0497)
Cases faced$_{e(t-1)}$ (Target)	1.026***	1.005	0.990
	(0.00685)	(0.00888)	(0.0186)
Experience$_{i(t-1)}$ (Initiator)	0.998	1.052***	0.697***
	(0.0176)	(0.0188)	(0.0526)
Experience$_{e(t-1)}$ (Target)	1.036**	1.005	0.992
	(0.0166)	(0.0161)	(0.0373)
ln Imports$_{ie(t-1)}$	1.196	1.434***	1.336
	(0.226)	(0.124)	(0.250)
Tariff$_{i(t-1)}$	0.966	0.977	0.904**
	(0.0589)	(0.0188)	(0.0376)
Trade Agreement$_{ie(t-1)}$	1.513	1.047	1.408
	(0.389)	(0.164)	(0.340)
GDP growth$_{i(t-1)}$ (Initiator)	1.096**	1.007	0.990
	(0.0459)	(0.0150)	(0.0287)
GDP growth$_{e(t-1)}$ (Target)	1.003	0.994	0.942**
	(0.0165)	(0.0157)	(0.0243)
ln Real Exchange Rate$_{ie(t-1)}$	1.068	0.432***	1.459
	(0.156)	(0.0597)	(0.568)
Constant	0.00102***	0.118*	0.0***
	(0.00188)	(0.131)	(0)
Observations	13,744	19,123	5,477
No. of AD initiating countries	18	21	10
R^2	0.557	0.442	0.341

Dependent Variable - Number of contingent protection $Cases_{iet}$. Coefficients reported as incidence-rate ratios. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies and country fixed effects.

by the World Bank (2019c). We find that Upper and Lower middle income countries have a positive relationship in terms of Retaliation$_{ei(t-1)}$ and anti-dumping activity. This effect is absent in case of the High income countries. However, the echoing effect is prominent

and positive in the High income group of countries. Also, High income countries have a positive correlation between their own anti-dumping activity and the experience of the target country which is again suggestive of the fact that the current anti-dumping activity may be in response to previous anti-dumping activity from the (now) target.

From the results, it can be seen that Upper middle income countries (prominent anti-dumping users being Argentina, Brazil, China, Colombia, Mexico, Malaysia, Thailand) see a surge in anti-dumping activity due to previous anti-dumping activity from exporters (Retaliation). In terms of other anti-dumping activity related variables, Total AD initiated$_{i(t-1)}$ in the previous year and higher Experience$_{i(t-1)}$ (Initiator) (*learning by doing* theory) in filing of anti-dumping cases are positively correlated with the country's own anti-dumping activity.

In Lower middle income countries (prominent anti-dumping users are Indonesia, India, Morocco, Pakistan, Philippines and Ukraine) the positive effect of retaliation is almost three times that in the Upper middle income countries. A counter-intuitive finding is that in the Lower middle income countries, accumulating anti-dumping related experience leads to a drop in anti-dumping activity. This seems in contrast with the fact that Lower middle income countries like India have intensified their anti-dumping activity recent years. However, we may be overlooking the behaviour of other Lower middle income countries. In view of this, it becomes essential to conduct a sensitivity test with a sequential exclusion of intensive anti-dumping initiators (see Appendix A Table A.5). For this group of countries, we see a statistically significant *substitution effect* between tariffs and anti-dumping activity, which is in consonance with the fact that most countries in this group have recently liberalised their economies, however, increasing their anti-dumping activity to protect domestic industries.

1.4.3 Anti-dumping activity of Traditional vs New users

Feinberg and Reynolds (2006) suggest that early 2000s have seen a tremendous growth in the anti-dumping 'club' with *new* users becoming increasingly active in anti-dumping initiations. **Traditional** users include the USA, the EU, Australia, and Canada (all High income countries) while the **New** users of anti-dumping are amongst the Low and Upper middle income economies like India, Mexico, Brazil, South Africa and Argentina (Prusa, 2005). There is a newfound interest in the rapid spread of anti-dumping in these economies since a surge in their anti-dumping activity is seen as a means to overturn the effects of recent liberalisation (Miranda et al., 1998; Zanardi, 2004).

Table 1.5: Intensity of AD initiations: Pseudo Poisson maximum likelihood model (Incidence Rate Ratios), 1996-2015, *Traditional and New* users of AD

Variables	(1) Traditional users	(2) New users
Retaliation$_{ei(t-1)}$	0.978	1.053
	(0.0432)	(0.0521)
Deflection$_{i(t-1)}$	1.000	1.006**
	(0.00236)	(0.00291)
Total AD initiated$_{i(t-1)}$	1.003	1.030***
	(0.00520)	(0.00367)
Cases faced$_{i(t-1)}$ (Initiator)	1.050*	1.005
	(0.0305)	(0.00938)
Cases faced$_{e(t-1)}$ (Target)	1.019***	0.998
	(0.00610)	(0.00632)
Experience$_{i(t-1)}$ (Initiator)	1.000	0.997
	(0.0193)	(0.0112)
Experience$_{e(t-1)}$ (Target)	1.030*	1.000
	(0.0163)	(0.0150)
ln Imports$_{ie(t-1)}$	1.549***	1.346***
	(0.125)	(0.112)
Tariff$_{i(t-1)}$	1.014	0.976**
	(0.0778)	(0.0118)
Trade Agreement$_{ie(t-1)}$	1.110	0.826
	(0.259)	(0.134)
GDP growth$_{i(t-1)}$ (Initiator)	1.026	0.991
	(0.0745)	(0.0113)
GDP growth$_{e(t-1)}$ (Target)	1.004	1.009
	(0.0175)	(0.0137)
ln Real Exchange Rate$_{ie(t-1)}$	0.921	0.486***
	(0.141)	(0.0773)
Constant	0.104**	0.742
	(0.111)	(0.983)
Observations	4,570	5,513
No. of AD initiating countries	5	5
R^2	0.558	0.609

Dependent Variable - Number of contingent protection **Cases**$_{iet}$. Coefficients reported as incidence-rate ratios. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies and country fixed effects. We have 106,820 observations. However, the PPML excludes certain observations to ensure that estimates exist.

In Table 1.5, we see marked differences in the anti-dumping behaviour of traditional and new users. While **Retaliation**$_{ei(t-1)}$ is not statistically significant for both these groups, **Total AD initiated**$_{i(t-1)}$ and **Deflection**$_{i(t-1)}$ are positive and significant determinants of anti-

dumping activity in case of the new users of anti-dumping . The *echoing* effect is prominent in case of traditional users who seem to target exporters who are already being targeted by other importers as well as if they have themselves been targeted intensely in previous year. The *substitution effect* of $\textbf{Tariff}_{i(t-1)}$ is evident in the new users where anti-dumping activity has a negative correlation with rate of applied tariff. Also, in the new users group, $\textbf{Real Exchange Rate}_{ie(t-1)}$ has a negative correlation with anti-dumping activity, which is in line with the argument that a higher domestic currency value leads to a loss in export competitiveness and increased imports, thereby, resulting in increased anti-dumping activity.

1.4.4 Anti-dumping activity by size of trade

To better interpret the characteristics of countries that impose anti-dumping duties as retaliatory measures, we split our sample based on the size of trade[14]. From Table 1.6 we observe that, when it comes to retaliation at the country level, the group of countries consisting of large importers like China, EU, India and the US are no different from group of countries with smaller countries (in terms of trade value) like Honduras, Jamaica and Costa Rica. For the Top 20 countries in terms of trade value, we find that $\textbf{Cases faced}_{i(t-1)}$ $\textbf{(Initiator)}$ is positive and statistically significant indicating that as the cases faced by the importer country increase, its own anti-dumping activity also surges. For the largest importers, $\textbf{Experience}_{i(t-1)}$ $\textbf{(Initiator)}$ is negative and significant. This may be attributed to probable backlog of cases or just an overall reduction in anti-dumping activity due to probable falling back on other protectionist mechanisms. For the top 11 to 20 importers, including new users of anti-dumping in South Asia like Malaysia and Thailand, $\textbf{Experience}_{i(t-1)}$ $\textbf{(Initiator)}$ is positive and significant indicating an escalation in anti-dumping activity attributable to recently acquired experience and capacities. It is worth noting that most of the Top 11-20 countries by trade value are the new users of anti-dumping with the exception of Australia.

$\textbf{Total AD initiated}_{i(t-1)}$ is positive and significant for the Top 10 importers indicating that anti-dumping activity by the importer in the preceding year could be positively correlated with their anti-dumping activity in the current year. It is important to reiterate that Total AD initiated$_{i(t-1)}$ and Experience$_{i(t-1)}$ (Initiator) are different from each other as the latter captures the stock of anti-dumping experience while the former is more temporal.

The substitution effect of lowered tariffs is evident from the negatively correlated and significant coefficients for the Top 20 importers in Table 1.6. This is indicative of the fact

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[14]We rank the countries by using the average of their imports in the period of our study, i.e. 1996-2015

Table 1.6: Intensity of AD initiations: Poisson pseudo-maximum likelihood estimation (Incidence Rate Ratios), 1996-2015, Country level analysis based on size of importer in terms of trade value

VARIABLES	(1) Top 10 by value of trade	(2) Top 11-20 by value of trade	(3) Bottom 11-20 by value of trade	(4) Bottom 10 by value of trade
Retaliation$_{ei(t-1)}$	1.043	1.069	1.041	0.889
	(0.0474)	(0.0909)	(0.038)	(0.0653)
Deflection$_{i(t-1)}$	0.999	1.006*	0.996	1.066***
	(0.00138)	(0.00317)	(0.0132)	(0.00604)
Total AD initiated$_{i(t-1)}$	1.009***	1.015	0.935	0.465
	(0.00332)	(0.00929)	(0.0915)	(0.389)
Cases faced$_{i(t-1)}$ (Initiator)	1.025***	1.054**	3.898***	4.549
	(0.00736)	(0.0270)	(2.006)	(5.611)
Cases faced$_{e(t-1)}$ (Target)	1.023***	0.999	0.975	0.897**
	(0.00605)	(0.00975)	(0.0210)	(0.0477)
Experience$_{i(t-1)}$ (Initiator)	0.975**	1.062***	1.586	1.584
	(0.0103)	(0.0228)	(0.602)	(3.505)
Experience$_{e(t-1)}$ (Target)	1.020	1.006	0.998	1.283*
	(0.0126)	(0.0159)	(0.0468)	(0.164)
Tariff$_{i(t-1)}$	0.984*	0.860***	1.430	1.028
	(0.00985)	(0.0362)	(0.330)	(0.290)
ln Imports$_{ie(t-1)}$	1.029	1.606***	2.382***	2.311**
	(0.0411)	(0.143)	(0.319)	(0.772)
Trade Agreement$_{ie(t-1)}$	1.349**	1.189	1.616	1.332
	(0.195)	(0.180)	(1.291)	(1.065)
GDP growth$_{i(t-1)}$ (Initiator)	1.068***	1.033*	1.443***	0.889
	(0.0200)	(0.0204)	(0.149)	(0.132)
GDP growth$_{e(t-1)}$ (Target)	1.000	0.993	0.926*	1.036
	(0.0121)	(0.0175)	(0.0403)	(0.149)
ln Real Exchange Rate$_{ie(t)}$	0.982	0.480***	0.798	0.321
	(0.133)	(0.0698)	(0.370)	(0.603)
Constant	0.344**	0.0119***	0.298***	0.13**
	(0.173)	(0.0150)	(0.162)	(0.052)
Observations	9,655	9,989	2,144	677
R^2	0.579	0.516	0.452	0.136

Dependent Variable - Number of contingent protection **Cases**$_{iet}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Top 10 importers by value of trade are Canada, China, EU, India, Japan, South Korea, Mexico, Russia, Singapore & US. Top 11-20 importers by value of trade are Argentina, Australia, Brazil, Indonesia, Israel, Malaysia, Thailand, Turkey, Vietnam & South Africa. Bottom 11-20 importers by value of trade are Bulgaria, Chile, Dominican Republic, Ecuador, Guatemala, Jordan, Lithuania, Panama, Peru, Slovenia. Finally, bottom 10 importers by value of trade are Costa Rica, Honduras, Jamaica, Kazakhstan, Latvia, Nicaragua, Paraguay, Trinidad & Tobago, Ukraine and Uruguay.

that large importers who have reduced tariffs have replaced them with contingent protection duties like anti-dumping duties.

All in all, the heterogeneity in anti-dumping activity is evident based on level of development, size of trade and experience of being anti-dumping users. This was presented in the aforesaid results. As a robustness check, we also provide an analysis based on regional divisions in the Appendix A Table A.4. In the next section, we endeavour to uncover more details based on sectoral anti-dumping activity.

1.5 Sectoral Analysis

In previous sections, we have used an enlarged concept of retaliation, including *any* anti-dumping action filed by an exporter against an importer in the previous year, as a determinant of anti-dumping action by the importer against exporter in the current year. Looking back on research which has pointed out that anti-dumping policy is not equally applied across industries and, in fact, a simple count of case initiations (refer Figure 1.4) suggests that anti-dumping is concentrated in a few sectors (Vandenbussche and Viegelahn, 2011). Therefore, in order to better uncover the mechanism of retaliatory anti-dumping as a strategic motive, we carry out an analysis with a focus on the industry dis-aggregation. Some of our variables change in the following way: in the aggregate analysis, the dependent variable $\mathbf{Cases}_{iet}$, was the number of anti-dumping cases filed by an importer against an exporter in a particular year. This variable is now constructed to include sectoral cases and notified as $\mathbf{PCases}_{iest}$. Therefore, the variable has four dimensions now - importer, exporter, year and sector. $\mathbf{Retaliation}_{eis(t-1)}$ is constructed in the same way as PCases$_{iest}$ - to indicate the cases filed by (now) exporter $\mathbf{e}$/target against the (now) importer $\mathbf{i}$/initiator in sector $\mathbf{s}$ in previous year $\mathbf{t\text{-}1}$. Note that this variable which is now binary, is essentially a count of anti-dumping cases. This is because, in our sample, at the industry level, there is only one case filed in a year by an importer against an exporter. While the target exporters may be several under one case head, the bilateral count of case in a particular sector in a year does not exceed one[15].

The other anti-dumping related variables i.e. $\mathbf{Total\ AD\ initiated}_{i(t-1)}$, $\mathbf{Deflection}_{i(t-1)}$, $\mathbf{Cases\ faced}_{i/e(t-1)}$ (Initiator/Target) and $\mathbf{Experience}_{i/e(t-1)}$ (Initiator/Target) have also been modified to include the sectoral component and therefore become $\mathbf{Total\ AD\ initiated}_{is(t-1)}$,

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[15]For example, in 2015 the US filed an anti-dumping case in the base metal industry and named Australia, Brazil, Japan, South Korea, Turkey and the EU. Therefore $\mathbf{PCases}_{iest}$ for US-Australia, US-Brazil, US-Japan, US-South Korea, US-Turkey and US-EU will be coded as 1 for the year 2015 in base metal sector.

Deflection$_{is(t-1)}$, **Cases faced**$_{i/es(t-1)}$ (Initiator/Target) and **Experience**$_{i/es(t-1)}$ (Initiator/Target). The source for this data remains the same i.e. World Bank's Temporary Trade Barriers Database (Bown, 2016). Similarly **Imports**$_{ie(t-1)}$ and **Tariff**$_{i(t-1)}$ of the baseline aggregate analysis transform into the **Sectoral Imports**$_{ies(t-1)}$ and **Sectoral Tariff**$_{is(t-1)}$ in the sectoral dis-aggregate analysis. Data on sectoral imports is obtained from WTO (2019e) (who extract it from UNCOMTRADE) and on sectoral tariffs from the Most Favoured Nation (MFN) tariffs applied by the reporting country/economy by sector available on a yearly basis at WTO (2020). Macro-economic control variables remain identical to the baseline aggregate analysis described previously. Summary statistics for the variables used in the sectoral analysis specification are shown in Table 1.7.

Table 1.7: Summary Statistics, Sectoral Analysis

Variables	N	Mean	SD	Min.	Max.	Source
PCases$_{iest}$	2,159,388	0.0019	0.0434	0	1	
Retaliation$_{eis(t-1)}$	2,159,388	0.0015	0.0380	0	1	
Deflection$_{is(t-1)}$	2,159,388	9.696	15.00	1	99	
Total AD initiated$_{is(t-1)}$	2,159,388	0.201	1.058	0	33	Bown (2016); WTO (2019e)
Cases faced$_{is(t-1)}$ (Initiator)	2,159,388	0.154	0.645	0	13	
Cases faced$_{es(t-1)}$ (Target)	2,159,388	0.09	0.474	0	13	
Experience$_{is(t-1)}$ (Initiator)	2,159,388	0.209	0.789	0	17	
Experience$_{es(t-1)}$ (Target)	2,159,388	0.098	0.552	0	17	
ln Sectoral Imports$_{ies(t-1)}$	2,159,388	5.502	7.055	0	26.17	WTO (2019e)
Sectoral Tariff$_{is(t-1)}$	1,509,759	10.55	11.51	0	216.4	WTO (2020)
Trade Agreement$_{ie(t-1)}$	2,159,388	0.11	0.309	0	1	WTO (2019c)
GDP growth$_{i(t-1)}$ (Initiator)	2,062,317	3.946	3.962	-22.93	18.29	World Bank (2018a)
GDP growth$_{e(t-1)}$ (Target)	1,985,481	3.912	5.901	-62.08	123.1	
ln Real Exchange Rate$_{ie(t-1)}$	1,406,931	2.608	2.747	-4.163	10.84	OECD (2019c,d)

As can be observed, the dependent and main independent variable transform from a count type of distribution to a binary distribution i.e. taking values 0 or 1, due to disaggregation. Therefore, the estimation technique changes in the sectoral analysis from count models to technique used for dichotomous or binary outcome variables[16]. Standard ordered probit models cannot account for the preponderance of zero observations when the zeros relate to

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[16]It is pertinent to note that Poisson pseudo-maximum likelihood (PPML) can be applied to any dependent variable with non-negative values without the need to explicitly specify a distribution for the dependent variable. Additionally, unlike the log-linear model, PPML regression provides a natural way to deal with zero values on the dependent variable (Correia et al., 2019). Therefore, while we switch to the probit model for our estimation, we also present results of PPML estimation in the baseline specification in Appendix A Table A.8. We observe that the sign and significance for our key variables remains consistent with both estimation techniques. It is important to state that Table A.7 and Table A.8 serve a purely illustrative purpose in terms of comparability of the signs of coefficients.

an extra, distinct source. Since our data also has a large number of zeroes, the distributional assumption of a probit model may stand challenged. In this case, a common alternative is a Zero inflated probit model. However, like the aggregate model (discussed in section 1.3.2), the presence of a large number of zeroes is neither structural nor due to sampling. The zero inflated model would be applicable if our sample had countries that do not have the possibility to use anti-dumping (like non-WTO members). However, since the sample consists of only anti-dumping making countries (on the importer side), we do not find the zero inflated probit model applicable.

The sectoral analysis is carried out using the following specification of maximum likelihood estimation technique where the dependent variable is $PCases_{iest}$, i.e. if an anti-dumping case is filed by an importer against an exporter in a particular year in sector s (1) or if not (0).

$$
\begin{aligned}
P(PCases_{\text{iest}} = 0|1) = G(&\beta_0 + \beta_1 Retaliation_{eis(t-1)} + \beta_2 Total\ AD\ initiated_{is(t-1)} \\
&+ \beta_3 Deflection_{is(t-1)} + \beta_4 Cases\ faced_{i/es(t-1)} \\
&+ \beta_5 Experience_{i/es(t-1)} + \beta_6 Sectoral\ Tariff_{is(t-1)} \\
&+ \beta_7 Sectoral\ Imports_{ies(t-1)} + \beta_8 Trade\ Agreement_{ie(t-1)} \\
&+ \beta_9 GDP\ Growth_{i/e(t-1)} + \beta_{10} Real\ Exchange\ Rate_{ie(t-1)} \\
&+ \gamma_{ie} + \nu_{it} + \lambda_{et} + \mu_s)
\end{aligned}
\tag{1.2}
$$

The likelihood for country i to instigate a case against country e is defined as follows where G represents the link function that follows a standard normal cumulative distribution function. It is assumed that the error term is independent and normally distributed. One way of controlling unobserved heterogeneity is using a specification with importer*exporter*sector (*ies*), importer*exporter*year (*iet*), importer*sector*year (*its*) and exporter*sector*year (*ets*) fixed effects. However, due to computational limitations in introducing so many high level fixed effects, this is rendered unfeasible. Therefore, we use the importer*year (*it*), exporter*year (*et*), importer*exporter (*ie*) and sector (*s*) fixed effects in the above specification. Additionally, since the probit estimators can be biased due to the incidental parameter problem, we use the special command (probitfe[17]) (Cruz-Gonzalez et al., 2017) to arrive at our estimates.

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[17]The probitfe fits a probit fixed-effects estimator that can include individual and/or time effects, and account for both the bias arising from the inclusion of individual fixed-effects and/or the bias arising from the inclusion of time fixed-effects.

1.5.1   Econometric results obtained from sectoral analysis

1.5.1.1   Sectoral anti-dumping activity - Baseline specification

In case of a probit model, the coefficients cannot be directly interpreted. So, in order to comment on the magnitude of the coefficients, we have calculated and reported the average marginal effects. We report results with and without target side variables related to echoing and experience. Since the primary focus of this chapter is on whether there is an evidence of **Retaliation**$_{eis(t-1)}$ in filing anti-dumping petitions, we focus on this variable first. In Table 1.8 we see evidence that on a sectoral level Retaliation$_{eis(t-1)}$ has a positive influence on the propensity of anti-dumping petitioning. The coefficients are positive and significant at the 1% level indicating that at a sectoral level, retaliation does determine anti-dumping activity. This helps us uncover the potential of retaliation which was not evident in the aggregate study (Refer Table 1.3 and Appendix A Table A.7). The interpretation of probit margins coefficients is as follows: **Retaliation**$_{ei(t-1)}$ increases the probability of a country to file an anti-dumping case against an exporter in sector **s** by 35 percentage points (Column 2 of Table 1.8) compared to a scenario when there was no case by the exporter against the importer in the previous year. The estimate is statistically significant at a 1% level.

With respect to other anti-dumping related variables, we see a positive effect in the **Total AD initiated**$_{is(t-1)}$ cases filed by a country in the previous year. This result suggests that sectors which initiate anti-dumping petitions in a particular year have a history of anti-dumping petitioning in the previous year, throwing light on the fact that targeting is sticky and persists for atleast 2 years as shown by our analysis. **Deflection**$_{is(t-1)}$ (number of anti-dumping initiations worldwide, exclusive of the importing country, in sector s) is negatively related to anti-dumping activity. Our results are different from Moore and Zanardi (2011) who show that anti-dumping actions in third countries can increase the probability that a sector may file an anti-dumping petition against a partner. In our case, this effect is the opposite and seems to favour the argument that trade deflection is negative indicating that sectors do not target a partner country if there are higher anti-dumping cases by third countries against this particular sector. It seems that a sector cares less about deflected trade at the sectoral level on a short run of one year. Deflected trade as a motivation of anti-dumping can be investigated for periods of two or three years lag, however, this is not covered in this chapter.

We also see consistent evidence that *echoing* is a positive and significant determinant of anti-dumping activity at the sectoral level. Cases faced by an importer itself in a certain sector will have a positive influence on its own anti-dumping activity in that sector. This is

Table 1.8: Determinants of AD initiations, Probit regression analysis, 1996-2015, Baseline specification on sectoral level

Variables	(1) All Sectors	(2) All Sectors [†]
Retaliation$_{eis(t-1)}$	0.747***	0.353***
	(0.0543)	(0.0635)
Deflection$_{is(t-1)}$	0.00209***	-0.0107***
	(0.000480)	(0.000647)
Total AD initiated$_{is(t-1)}$	0.150***	0.170***
	(0.00315)	(0.00342)
Cases faced$_{is(t-1)}$ (Initiator)	0.0200***	0.0636***
	(0.00622)	(0.00681)
Cases faced$_{es(t-1)}$ (Target)		0.262***
		(0.00555)
Experience$_{is(t-1)}$ (Initiator)	-0.0236***	-0.00921
	(0.00564)	(0.00614)
Experience$_{es(t-1)}$ (Target)		0.0879***
		(0.00602)
ln Sectoral Imports$_{ies(t-1)}$	0.0852***	0.0625***
	(0.00204)	(0.00196)
Sectoral Tariff$_{is(t-1)}$	0.00207***	0.00152**
	(0.000602)	(0.000678)
Trade Agreement$_{ie(t-1)}$	-0.0242	0.0412*
	(0.0216)	(0.0231)
GDP growth$_{i(t-1)}$ (Initiator)	0.00455	0.00182
	(0.00295)	(0.00314)
GDP growth$_{e(t-1)}$ (Target)	0.0388***	0.00467*
	(0.00231)	(0.00268)
ln Real Exchange Rate$_{ie(t)}$	0.00242	-0.00433
	(0.00338)	(0.00366)
Constant	-0.0953*	-0.592***
	(0.0506)	(0.0560)
Observations	1,075,571	1,075,571
Pseudo R^2	0.35	0.42

[†] Includes target side variables for experience and cases faced. Dependent Variable- Contingent protection $\boldsymbol{PCases_{iest}}$. Results of the probit regression (probitfe command (Cruz-Gonzalez et al., 2017)) have been reported with average marginal effects. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

also true with respect to the target where we see that sectors are more likely to file a petition against a partner country in a sector which is already being targeted by third countries attributable to purported reasons like reputation of dumping being high in case of the named sector.

In terms of experience at filing cases, we see that sectors in countries with higher anti-dumping experience are targeted more, while the importer's own sectoral case filing experience is negatively linked to anti-dumping activity. While the first result related to $\textbf{Experience}_{es(t-1)}$ (Target) is identical to the baseline aggregate results, the negative effect of $\textbf{Experience}_{is(t-1)}$ (Initiator) with anti-dumping activity is negative and significant. This indicates that sectors that have more experience or familiarity in anti-dumping activity see a drop in anti-dumping filings. This may be driven by the fact that past anti-dumping activity may have been a deterrent to dumping (from exporter) leading to a lower likelihood of requiring an anti-dumping action from the importer.

Unlike the aggregate specifications seen in previous section, we do not see the *substitution effect* of sectoral tariffs. Other control variables have coefficients in line with the aggregate results.

Like Vandenbussche and Viegelahn (2011) we find that anti-dumping policy for importers is not equally applied across industries. As discussed in the introduction of this chapter, a simple count of case initiations suggests that anti-dumping protection policy is concentrated in a few sectors (Refer Figure 1.4). Of course, the caveat is that these figures are not representative of either the industry size or product scope within each industry. It is for this reason our sectoral analysis is carried out for *all* industry sectors (21 sections of the Harmonized System). However, when performing the analysis for industry sectors one by one, we observe that the **chemicals** and **base metals** sectors are significant in using anti-dumping as a retaliatory force. These results are corroborated by regression results presented in Appendix A Table A.9. Other sectors which have a positive link between retaliation and current anti-dumping activity are plastics & rubber, paper & wood, machinery & mechanical appliances and vehicles & transport equipment. For rest of the 15 sectors, retaliation and anti-dumping activity have scant statistically significant relationship. To better visualise the sectoral analysis with respect to strategic motive of retaliation, in Figure 1.5 are shown the predicted values of anti-dumping $\textbf{PCases}_{iest}$ varying $\textbf{Retaliation}_{eis(t-1)}$, holding all other variables at mean (for continuous variables) and at median (for categorical variables).

1.5.1.2 Sectoral anti-dumping activity of Traditional vs New users of anti-dumping

In the Table 1.9, we show the results of regressions on sectoral level sub-samples of Traditional and New users of anti-dumping. The results from these sub-samples are coherent with the sectoral baseline specification (Table 1.8) with $\textbf{Retaliation}_{eis(t-1)}$ being a positive determinant
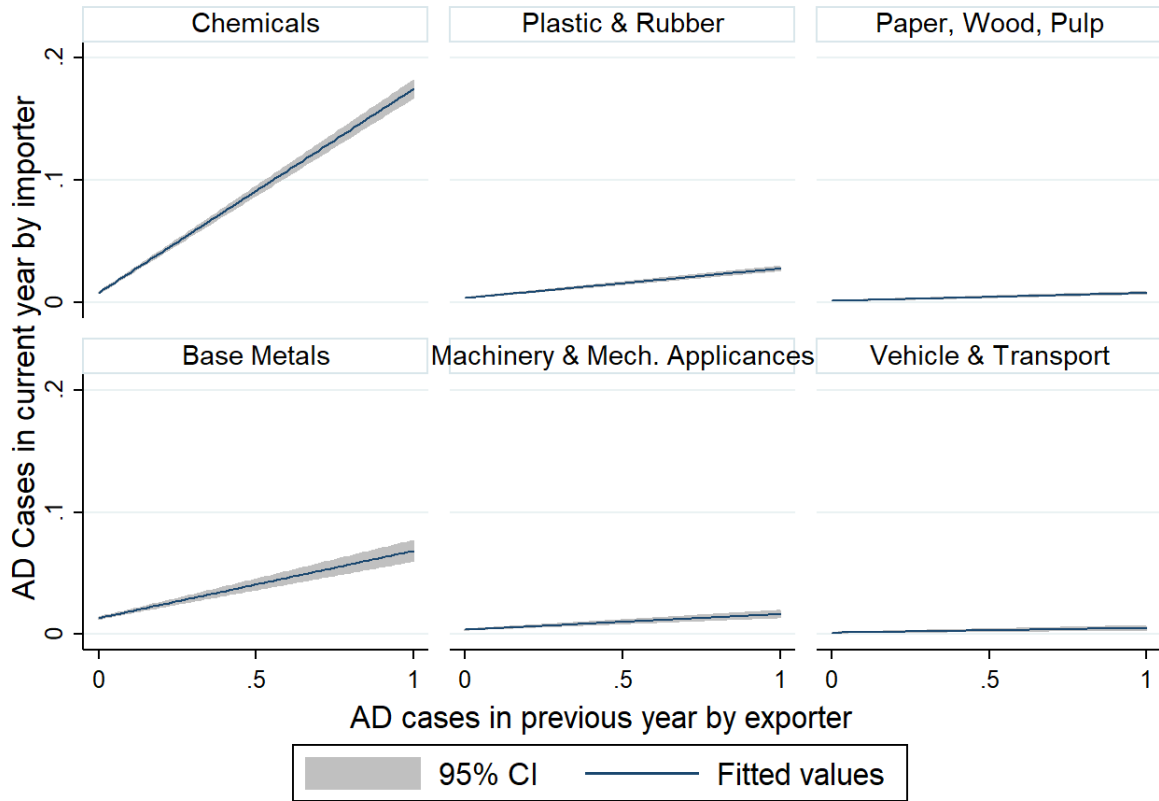
Figure 1.5: Retaliation by Sector (predicted values of cases filed vs. indicator for retaliation)
Source : Author's calculation. The classification of sectors is provided in Appendix A Table A.2

of anti-dumping activity at the sectoral level both in case of traditional and new users of anti-dumping. Other anti-dumping related variables broadly retain the signs and significance from the sectoral level baseline results in Table 1.8.

Sectoral Tariff$_{is(t-1)}$ exhibits the *substitution effect*, albeit, this is statistically significant only in case of traditional users. However, even for the new users while statistical significance is not achieved, the negative coefficient is quite intuitive as almost all the new users have recently witnessed trade liberalisation and have almost concurrently become heavy users of anti-dumping. The mechanisms of **Experience**$_{is(t-1)}$ (Initiator) become further clear where again we can see that new users with higher acquired experience in terms of anti-dumping case filing will have higher proclivity to initiate cases.

Table 1.9: Determinants of AD initiations: Probit regression analysis, 1996-2015, *Traditional and New* users of AD on sectoral level

	(1) Traditional	(2) Traditional†	(3) New	(4) New†
Retaliation$_{eis(t-1)}$	0.640***	0.294**	0.806***	0.420***
	(0.122)	(0.138)	(0.0635)	(0.0742)
Deflection$_{is(t-1)}$	0.00293**	-0.0109***	0.00382***	-0.00770***
	(0.00120)	(0.00149)	(0.000531)	(0.000722)
Total AD initiated$_{is(t-1)}$	0.111***	0.135***	0.176***	0.193***
	(0.00555)	(0.00609)	(0.00395)	(0.00425)
Cases faced$_{is(t-1)}$ (Initiator)	0.0259	0.0932***	-0.0224***	0.0179**
	(0.0168)	(0.0181)	(0.00786)	(0.00856)
Cases faced$_{es(t-1)}$ (Target)		0.294***		0.245***
		(0.0136)		(0.00618)
Experience$_{is(t-1)}$ (Initiator)	-0.0148	0.00122	0.0116	0.0180**
	(0.00907)	(0.00981)	(0.00781)	(0.00842)
Experience$_{es(t-1)}$ (Target)		0.0750***		0.0839***
		(0.0138)		(0.00683)
ln Sectoral Imports$_{ies(t-1)}$	0.182***	0.133***	0.0706***	0.0517***
	(0.00671)	(0.00692)	(0.00212)	(0.00204)
Sectoral Tariff$_{is(t-1)}$	-0.00967*	-0.00800	-0.000371	-0.000524
	(0.00546)	(0.00571)	(0.000912)	(0.000977)
Trade Agreement$_{ie(t-1)}$	-0.172***	-0.0691	0.0234	0.0915***
	(0.0547)	(0.0574)	(0.0246)	(0.0262)
GDP growth$_{i(t-1)}$ (Initiator)	0.0925***	0.0739***	0.00230	0.00126
	(0.0213)	(0.0222)	(0.00335)	(0.00357)
GDP growth$_{e(t-1)}$ (Target)	0.0386***	0.000887	0.0396***	0.00765**
	(0.00513)	(0.00578)	(0.00266)	(0.00310)
ln Real Exchange Rate$_{ie(t)}$	0.185***	0.235***	-0.00947**	-0.0105**
	(0.0531)	(0.0556)	(0.00411)	(0.00436)
Constant	-7.48***	-5.256***	-3.851***	-2.485***
	(0.562)	(0.532)	(0.190)	(0.166)
Observations	122,360	122,360	953,211	953,211
Pseudo R^2	0.400	0.459	0.351	0.416

Dependent Variable - Number of contingent protection $\boldsymbol{PCases_{iest}}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. † The specification include target related variables for echoing and experience. Coefficients are estimated using probitfe command (Cruz-Gonzalez et al., 2017)

1.5.1.3 Sectoral anti-dumping activity by size of importers

With the sectoral analysis pertaining to size of importers shown in Table 1.10 we are able to see that current anti-dumping activity of large importers (Top 10) in a specific sector has a positive and significant relationship with anti-dumping activity for exporter in the same

Table 1.10: Determinants of AD initiations: Probit regression analysis, 1996-2015, Sectoral analysis based on size of importer in terms of trade value

VARIABLES	(1) Top 10 by value of trade	(2) Top 11-20 by value of trade	(3) Bottom 11-20 by value of trade	(4) Bottom 10 by value of trade
$\text{Retaliation}_{eis(t-1)}$	0.302***	0.0922	0.135	0.287
	(0.0763)	(0.169)	(0.143)	(0.369)
$\text{Total AD initiated}_{is(t-1)}$	0.135***	0.176***	0.681***	0.732***
	(0.00431)	(0.00667)	(0.0687)	(0.0582)
$\text{Deflection}_{is(t-1)}$	-0.0140***	-0.0117***	-0.0106***	-0.0105***
	(0.00102)	(0.00148)	(0.00293)	(0.00368)
$\text{Cases faced}_{is(t-1)}$ (Initiator)	0.0516***	0.0354		-0.275***
	(0.00852)	(0.0277)		(0.0876)
$\text{Cases faced}_{es(t-1)}$ (Target)	0.347***	0.286***	0.151***	0.251***
	(0.00955)	(0.0112)	(0.0333)	(0.0245)
$\text{Experience}_{is(t-1)}$ (Initiator)	0.0304***	0.0993***	0.510**	-0.117
	(0.00729)	(0.0172)	(0.223)	(0.115)
$\text{Experience}_{es(t-1)}$ (Target)	0.109***	0.0894***	-0.0571	0.0740***
	(0.00932)	(0.0123)	(0.0588)	(0.0266)
$\text{Sectoral Tariff}_{is(t-1)}$	0.00934***	-0.00419*	-0.00269	0.00311
	(0.00155)	(0.00248)	(0.0122)	(0.0125)
$\text{ln Sectoral Imports}_{ies(t-1)}$	0.0652***	0.0429***	0.120***	0.0583***
	(0.00321)	(0.00322)	(0.0172)	(0.00963)
$\text{Trade Agreement}_{ie(t-1)}$	0.0520	0.0489	-0.00344	0.768***
	(0.0374)	(0.0441)	(0.150)	(0.105)
$\text{GDP growth}_{i(t-1)}$ (Initiator)	0.0107**	0.0245***	-0.0293	-0.00744
	(0.00480)	(0.00839)	(0.0238)	(0.0201)
$\text{GDP growth}_{e(t-1)}$ (Target)	-0.00501	0.0125**	0.0318*	0.0133
	(0.00397)	(0.00504)	(0.0166)	(0.0140)
$\text{ln Real Exchange Rate}_{ie(t)}$	-0.00740	-0.111***	0.00128	-0.0658***
	(0.00894)	(0.0179)	(0.0396)	(0.0254)
Observations	249,869	227,468	149,027	223,288
Pseudo R^2	0.433	0.407	0.462	0.574

Dependent Variable - Number of contingent protection $PCases_{iest}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Coefficients are estimated using probitfe command (Cruz-Gonzalez et al., 2017) (Cruz-Gonzalez et al., 2017). Top 10 importers by value of trade are Canada, China, EU, India, Japan, South Korea, Mexico, Russia, Singapore & US. Top 11-20 importers by value of trade are Argentina, Australia, Brazil, Indonesia, Israel, Malaysia, Thailand, Turkey, Vietnam & South Africa. Bottom 11-20 importers by value of trade are Bulgaria, Chile, Dominican Republic, Ecuador, Guatemala, Jordan, Lithuania, Panama, Peru, Slovenia. Finally, bottom 10 importers by value of trade are Costa Rica, Honduras, Jamaica, Kazakhstan, Latvia, Nicaragua, Paraguay, Trinidad & Tobago, Ukraine and Uruguay.

sector in the previous period. We must take note that this result is in line with the estimates obtained in Table 1.9 where we see that both traditional and new users of anti-dumping evidence a similar relationship between $PCases_{iest}$ and $Retaliation_{eis(t-1)}$. It is to be noted that the Top 10 large importer group consists of both new and traditional users of anti-dumping.

We obtain reinforced evidence about $\text{Deflection}_{is(t-1)}$ which is negatively correlated with current anti-dumping activity at the sectoral level indicating that sectors do not target a

partner country if there are existing cases by third countries against the particular sector. The Cases faced$_{is(t-1)}$ (Initiator) is positive and significant for the Top 10 importers but negative and significant for the bottom 10 importers. This is evidence that bigger importers increase their anti-dumping activity in the sector where they are themselves targeted by third countries while for smaller importers the effect is negative. This could be evidence of the strength that industry lobbies hold in smaller importer nations which may deter from petitioning further if already faced with cases themselves. Cases faced$_{es(t-1)}$ (Target) is statistically significant and positive across the board indicating that small and large importers alike target partner countries in a sector which is already being targeted by third countries.

Before concluding this section, it is important to state that subsequent to the aggregate analysis, we carry out sectoral analysis on the sample of anti-dumping users and different sub-samples. What we observe from the results based on the whole sample (Table 1.8) is that retaliation seems to be a determinant of sectoral anti-dumping activity. However, this result does not seem enough to point into the direction of the countries driving this result. Subsequently, we carry out the analysis on a sub-sample of *traditional* and *new* users to uncover that retaliation is a statistically significant determinant of higher anti-dumping activity (Table 1.9). Furthermore, we split the sample based on size of importer (Table 1.10) and find that retaliation is a significant determinant for anti-dumping case filing only for the Top 10 importers. This is coherent because of the Top 10 importers (by trade value) 8 are from the traditional and new user group. Therefore, we have been able to identify the group of countries that use retaliation strategy in their anti-dumping case filing decision at the sectors level.

1.6   Conclusion

This study contributes to the broader literature of contingent protection concerning the strategic motives of anti-dumping activity (Anti-dumping being over 85% of contingent protection). We focus on the particular aspect of retaliation since recent years have seen a surge in 'tit for tat' behaviour in terms of tariffs and non-tariff measures by leading economies of the world. We begin with an aggregate country level analysis and find that *retaliation* is not a strategic motive for anti-dumping activity. The strategic retaliatory motive is uncovered at the importer's size and income level of countries with Lower & Upper middle income countries having higher incidences of retaliation in anti-dumping petitions. Upon a deeper dive into sectoral analysis, we find that retaliatory practices do exist at the sector level albeit only for a select group of large importers. As many other researchers have found in narrower

settings, we find robust evidence that sectors are more likely to file anti-dumping cases against countries and sectors where petitions have been filed against them in the past. This effect is positive and significant for large importers, however, does not manifest in smaller importers. Strategic considerations in the use of anti-dumping are also evident through other indicators like total anti-dumping cases that a country files, the global use of anti-dumping (*deflection*), targeting countries that are already being targeted by third nations (*echoing*) and accumulating anti-dumping petitioning related *experience*.

The results of this study also support the proposition that countries are more likely to file anti-dumping petitions when applied tariffs are declining. We find this negative correlation between applied tariffs and anti-dumping activity across all the sub-samples in the aggregate analysis. In the sectoral analysis, the results are mixed with a substitution effect becoming evident in case of traditional users or anti-dumping and the top 11-20 countries by trade size. The empirical evidence that this chapter presents reinforces the viewpoint that increased imports are seen as a threat to domestic industry and may lead to an increased anti-dumping activity as a channel of local industry protection enhancement.

On a final note, there certainly maybe other channels of retaliation for protection that we are not able to capture in this study. However, we are assured that the other forms of protection are sparse while anti-dumping is the most conspicuous form of trade protection. The results of this chapter suggest that as more and more countries use anti-dumping, the use of anti-dumping as a trade remedy intensifies, in developed as well as developing countries. Nevertheless, it would be interesting to see the escalation of other NTMs in response to contingent protection.

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Chapter 2

Are only men fighting trade wars?
Role of national leadership in contingent protection activity

2.1 Introduction

Trade wars are not new[1]. 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*[2] 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, 2020). 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; Dube and Harish, 2020; Koch and Fulton, 2011)

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[1]The 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).

[2]De Sousa et al. (2018) present an analysis on the role of national security on bilateral trade. Their results suggest that counter-terrorism security measures matter for US imports which witness a drop if the exporter has perpetrated a terrorist act against the US. In 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. 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.

and economic development (Chattopadhyay and Duflo, 2004) there is lack of attention to role of female leadership in international trade policy. Despite its importance[3], 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 unclear[4].

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 leadership[5] characteristics with more assertive, controlling and confident tendencies (Eagly and Johannesen-Schmidt, 2001). Women leaders who have exhibited such agentic attributes, for example Indira Gandhi[6], 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

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[3]Globally, trade accounts for 57.8% of world GDP (2017) (World Bank, 2018b)

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

[5]The words **agentic leadership.** come from the concept of agency. This style of leadership is attributed to a person who is respected by subordinates (Eagly et al., 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 (Andersen and Hansson, 2011)

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

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.

Trade policy reform can be prescribed in numerous ways, however solutions that ignore underlying determinants of trade policy run the risk of being economically inappropriate and infeasible, or simply politically unacceptable. Therefore, the understanding of the various political economy forces, in this case - leadership, that interact to shape trade policy becomes crucial (Gawande et al., 2015). Consequently, 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 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 non-credible threats leading to uninhibited trade conflict attracting action (for example, dumping or subsidising 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 analyse the contingent protection measures instigated by 49[7] WTO member countries between 1998 and 2018 (see Appendix B Table B.2 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

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[7] WTO 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.

abatement of the chief's propensity of trade conflicts, irrespective of the chief being a male or female. We believe, this chapter 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 chapter 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 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 chapter contributes to the prolific literature on role of women leaders in conflicts. As a policy implication, we do 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 leaders[8].

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.

2.2   Gender and trade policy

2.2.1   A general framework of Gender and Trade Policy

In this study, our analytical interest covers the role of women's representation in politics and international trade policy. In this section, we summarise the key findings of literature on gender stereotypes using evidence from experiments. We believe that literature has uncovered the motives behind gendered actions based on two directions. One, women **are** different than men (selection); and, two, women **behave** differently than men depending on the situation.

Several studies in experimental economics investigate if and how a person's competitiveness depends on their own gender and on the gender of people with whom they interact. Numerous experiments have compared behaviours based on gender in different situations and find evidence that men and women behave differently in different situations. This could be not only because of nature, but also because the repertoire of actions and behaviours that society makes available for men and women is girdled by stereotypes (Martin, 2003). Generally, men

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[8]The 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, 2020)

and women are engaged in different types of jobs and relatively few women hold top office positions. Women are also less likely to run for elections and hold less seats in parliaments (Kanthak and Woon, 2015). While former literature has attributed this to a demand-supply phenomenon, recent studies have focused on gender differences in competitiveness, investigating both the effect of gender on the productive efficiency of incentives and the effect of gender on the selection of competitive incentives.

Using real-effort experiment Kuhn and Villeval (2015) find that women have a higher attraction to co-operative incentives which is a result in part from their more optimistic assessments of their prospective teammate's ability. Using another experimental setting Datta Gupta et al. (2013) find that men compete less against other men than against women and a higher predicted competitiveness of women induces more competition. Using data from 15 sets of experiments, Charness and Gneezy (2012) find that women are more risk averse than men when it comes to financial decisions.

When it comes to political positions, researchers suggest that navigating the political arena is more complicated for women than for men (Lawless, 2009). Also, women and men continue to be perceived differently in terms of their ideologies, characteristics and policy expertise (Lawless, 2004) and voters simply transfer their stereotypical expectations about men and women to male and female candidates (Dolan, 1997). There can be a common social practice that holds women up to more scrutiny than men, particularly in traditionally male-dominated spheres - like politics (Eagly, 1995).

The gender identity of politicians can have varied implications on policy outcomes. As established in literature, since women are perceived as possessing traits of kindness, cooperation, compassion and warmth; they have a higher propensity to contribute to causes like health (Mavisakalyan, 2014), education (Duflo, 2012), foreign aid (Hicks et al., 2016), betterment of institutions and stricter climate change policies (Mavisakalyan and Tarverdi, 2019).

While this could be true for the positions where women are parliamentarians, when it comes to high office positions which are perceived as more masculinized - like supreme leader of the nation, women may present themselves as more masculine in order to tackle the gender stereotype and gain more credibility of actions (Adams and Funk, 2012). Women may confront credibility challenges since men and women are perceived with different stereotypes, specially in offices traditionally held by men.
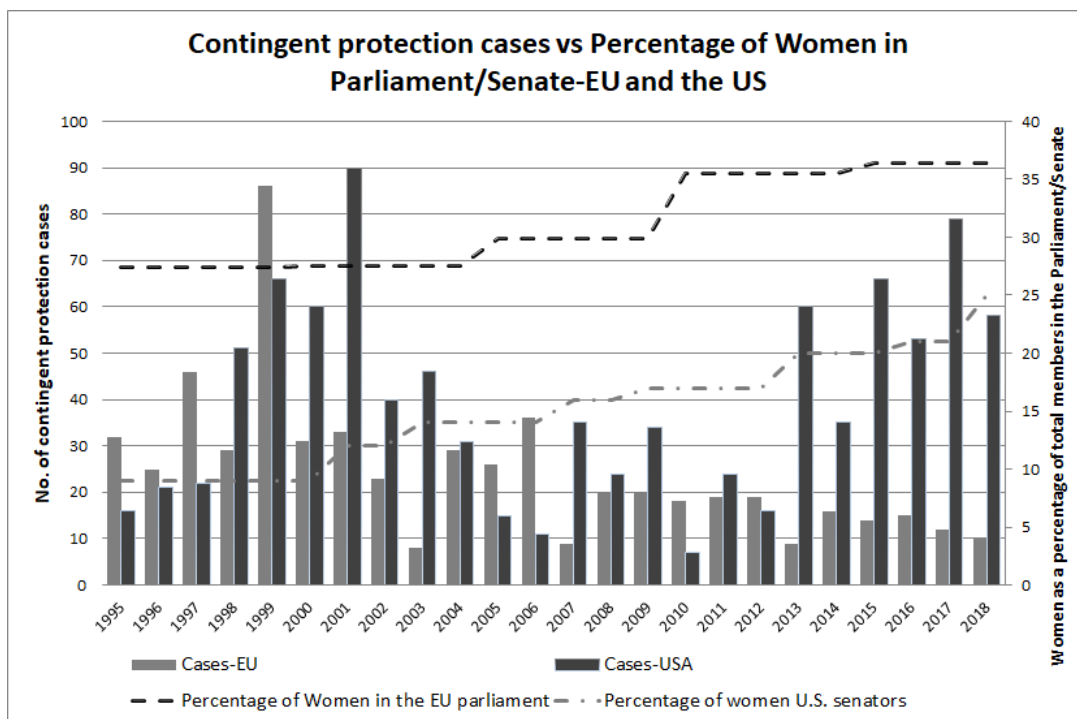
Figure 2.1: Non-tariff contingent protection initiations in the US and EU (two of the traditional users) vs. Percentage of women in the respective parliaments
Source : Author's calculation from the Temporary Trade Barriers Database (Bown, 2016) and Inter Parliamentary Union (IPU) data on women parliamentarians

Therefore, it is likely that 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 2.1 and Figure 2.2, where, prima facie, we see that there is an increasing trend in the number of women parliamentarians while the number of contingent protection cases filed have come down progressively[9]. However, our analytical interest, more prominently, concerns the role of **Woman Chief** executive in international trade policy. Regarding increased numbers of **Women in Parliament** we expect an inverse relationship with the propensity of trade conflicts, holding all else equal.

To conduct our analysis, we use the Anti-dumping and Countervailing duty cases 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 case[10]. This is in line with the results in Chapter 1 which are discussed in further

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[9]Obviously, 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.

[10]Feinberg and Reynolds (2006) use data pertaining to 1996-2003 and find strong evidence that a significant
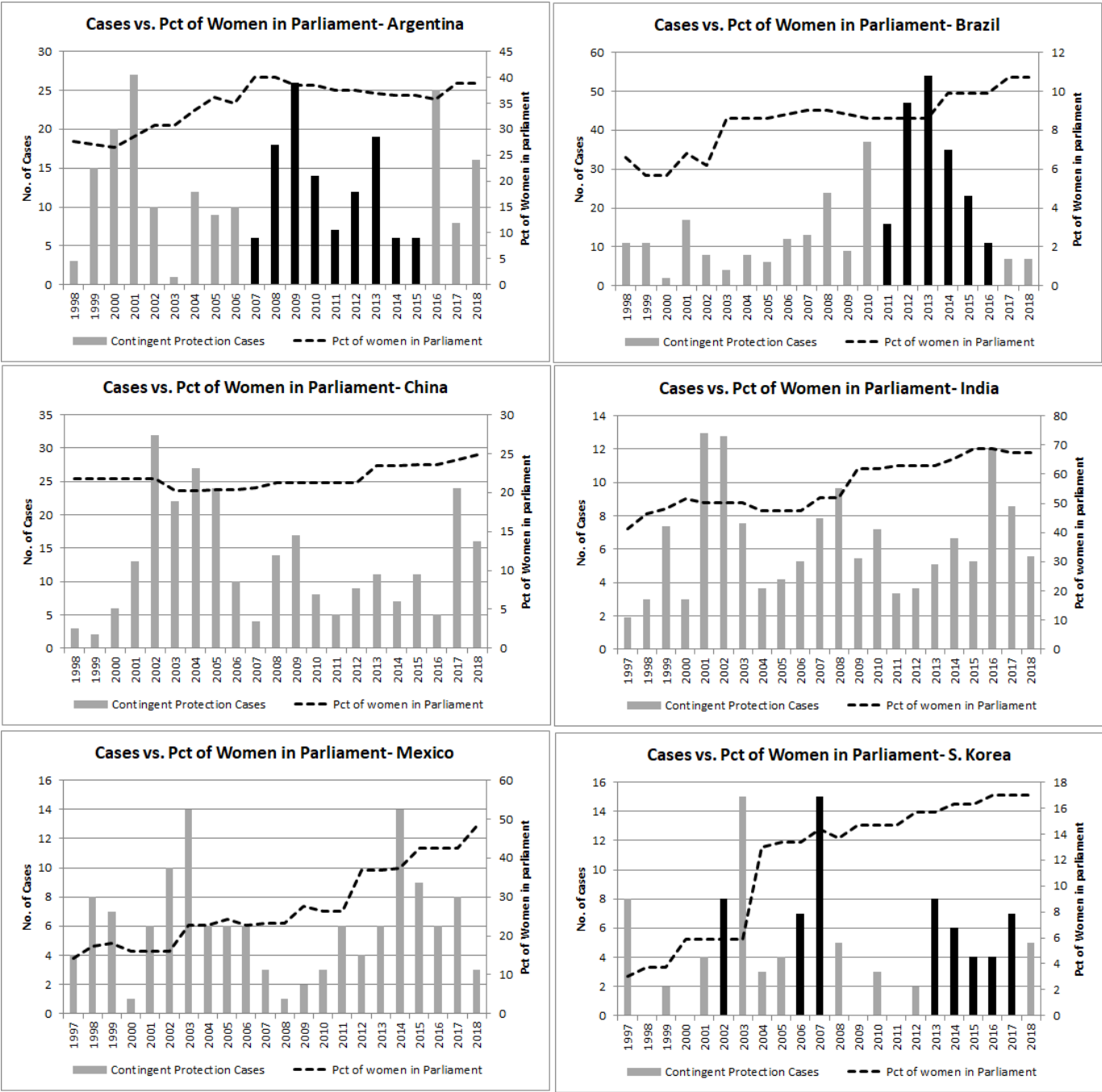
Figure 2.2: Non-tariff contingent protection initiations in the prominent new users in Asia and South America vs. Percentage of women in the respective parliaments
Source : Author's calculation from the Temporary Trade Barriers Database (Bown, 2016) and Inter Parliamentary Union (IPU) data on women parliamentarians. Dark bars indicate the years in which a woman was Chief Executive of the country.

detail in the Results Section. In some cases, Anti-dumping and countervailing duties are met with formal disputes raised at the Dispute Settlement Body (DSB) of the WTO[11]. Therefore, we model the start of a trade war with an event of filing a contingent protection case at the WTO.

Consequently, the governing hypothesis of this study are as follows:

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

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

Furthermore, we conceive a generic game theory set-up to explain the role of threat in the initiations of trade war. This illustrative framework is presented in the Appendix B.

2.2.2 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[12].

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

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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 Blonigen and Bown (2003), Feinberg and Reynolds (2006, 2018) and Knetter and Prusa (2003).

[11]Since 1995, over 500 disputes have been brought to the WTO and over 350 rulings have been issued (WTO, 2019b).

[12]Bros and Borooah (2013) show that participation in social activities is strongly correlated to trust in public bodies, which in turn favours participation in political life through voting.

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.

2.3   Empirical framework

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. We develop a general model of our empirical estimation which is constructed as below:

$$
\begin{aligned}
Cases_{iet} =& exp(\beta_0 + \beta_1 \times Initiator_{i(t-1)} + \beta_2 \times Target_{e(t-1)} + \\
& \beta_3 \times Pair_{ie(t_1)} + \eta_{ie} + \phi_t)\epsilon_{i,e,t}
\end{aligned}
\tag{2.1}
$$

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-pair specific effects. In our regressions, standard errors are clustered across importer*year and robust estimators are used to control for the existing heteroskedasticity. As specified before, since the dependent variable is of count type, the estimation technique used is Negative Binomial regression.

Our data constitute of a balanced panel composed of 49 importer countries (**i**) that have used a contingent protection provision of the WTO against 106 exporter trade partner countries (**e**) that are members of the WTO. The period for this study is 1998-2018 i.e. a 21 year period[13]. The list of countries used in empirical analysis is given in Appendix B as Table B.2 and B.3.

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[13]While 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 onward from the World Bank which in turn sources data from the Inter-Parliamentary Union (IPU) (www.ipu.org).

We examine the relationship between gender and trade conflicts using contingent protection data from the WTO (2019e) available from 1995 to 2019 for 49 reporting economies and 106 trade partners (refer Data quality and availability). 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 $\textbf{Cases}_{iet}$.

Our first primary explanatory variable, $\textbf{Woman Chief}_{i(t-1)}$ is a dummy taking a value 1 when the chief executive of the government is a woman in the year previous to the year in which a trade conflict is initiated. Data on national leaders is obtained from *Archigos database* (Goemans et al., 2009) which we have further updated for years and countries till 2018. Wherever data was not available or missing, we employed self investigation of respective government ministry websites. The other primary predictor of interest is $\textbf{Women in Parliament}_{i(t-1)}$ (Pct) which is the percentage of women in the parliament[14] of the importer country in the year previous to the year in which 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 portfolios[15] in the trade policy decision. We include two cabinet posts in our analysis, viz. $\textbf{Woman Minister of Finance}_{i(t-1)}$ and $\textbf{Woman Minister of Foreign Affairs}_{i(t-1)}$. We expect a negative relationship between woman foreign affairs minister and tendency for trade conflict because in most countries the ministry of foreign affairs 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

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[14]24 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.

[15]This 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.

affairs, and in some cases also the monetary policy. This ministry profile often calls for close dealing with industry leaders and also focus on small and medium enterprise sector. Since trade and protectionist measures are closely related with economic condition of the industries in a country (Blonigen and Bown, 2003; Feinberg, 1989; Niels and Francois, 2006) we have reason to argue that the behaviour of a woman finance minister will be more hawkish than their male counterparts. In other words, we expect woman finance minister to behave similarly to women chief executives.

In this analysis, we include measures on regime, parliamentary structure and government system, as controls. Given that these are likely to increase women's representation in elected positions this inclusion is significant to examine the effect of women leaders on conflicts (Koch and Fulton, 2011; McAllister and Studlar, 2002).

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 democratisation, 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**$_{i(t-1)}$ 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 (2019).

To understand the effects of divergent constitutional arrangements on power distribution and policy making, we include a control **Government System**$_{i(t-1)}$ 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 government 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 favourable outcomes than parliamentary government regimes: slower output growth, higher and more volatile

inflation and greater income inequality (McManus and Ozkan, 2018). Moreover, Prusa and Skeath (2004) 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 system 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, 2019). 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**$_{i(t-1)}$ 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**$_{i(t-1)}$ 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 executives 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.

In line with extant literature, we include controls for determinants of contingent protection measures including **GDP growth** of the initiator as well as the target country for economic performance, **Imports**$_{ie(t-1)}$ from the trade partner, **Real Exchange Rate**$_{ie(t-1)}$ and, **Retaliation**$_{ei(t-1)}$ 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 (World Bank, 2018a) and on imports is obtained from International Monetary Fund's Direction of Trade Statistics (DOTS) (DOTS, IMF, 2019). The variable on retaliation is constructed from the Temporary Trade Barriers Database (Bown, 2016).

Summary statistics on all our variables of interest are presented in Table 2.1.

Table 2.1: Descriptive Statistics

Variables	Observations	Mean	Std. Dev.	Source
Cases$_{iet}$	103,005	0.049	0.423	WTO (2019e)
Woman Chief$_{i(t-1)}$	103,005	0.120	0.325	Goemans et al. (2009)
Women in Parliament$_{i(t-1)}$(Pct)	97,301	0.172	0.092	IPU.org (2019)
Woman Min. of Foreign Affairs$_{i(t-1)}$	103,005	0.127	0.333	Ministry websites
Woman Min. of Finance$_{i(t-1)}$	103,005	0.054	0.226	Ministry websites
Democracy$_{i(t-1)}$	103,005	0.764	0.424	Anckar and Fredriksson
Parliament Structure$_{i(t-1)}$	103,005	0.510	0.500	IPU.org (2019)
Government System$_{i(t-1)}$	103,005	0.728	0.913	IPU.org (2019)
GDP Growth Rate$_{i(t-1)}$(Initiator)	100,605	3.7	3.4	World Bank (2018a)
GDP Growth Rate$_{e(t-1)}$(Target)	98,423	3.67	5.12	World Bank (2018a)
ln Imports$_{ie(t-1)}$	79,973	17.5	3.65	IMF (2019)
ln Real Exchange Rate$_{ie(t-1)}$	96,831	0.010	0.323	OECD (2019c,d)
Retaliation$_{ei(t-1)}$	103,005	0.031	0.376	WTO (2019e)

2.4 Results

2.4.1 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 2.1 with **Woman Chief**$_{i(t-1)}$ 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. The results in this chapter are presented as negative binomial coefficients. Since 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. Additionally, Incidence Rate Ratios corresponding to each result table are presented in the Appendix B.

Table 2.2 depicts the results 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 coefficient in Table 2.2 Column 3 (0.599)[16] is the estimated coefficient comparing female leaders to male leaders, given the other variables are held constant in the model. Female chiefs compared to male chiefs, while holding the other variable constant in the model, are expected to have a higher expected count for **Cases**$_{iet}$.

Women in Parliament$_{i(t-1)}$ (Pct) is statistically significant at conventional levels of significance, and also bears the expected negative sign on the coefficient. As expected, **Woman Minister of Foreign Affairs**$_{i(t-1)}$ has a significant and positive effect on the case filing intensity[17]. In the baseline, **Democracy**$_{i(t-1)}$ 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. This may be an effect of the realisation of threats that masses may

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[16]With a corresponding IRR of 1.820 (See Appendix B Table B.4)

[17]This result is non-compliant with our initial hypothesis. At this juncture, it seems that the women foreign affairs minister have a positive effect on protectionist activities indicating that higher office is commensurate with tougher policies and a departing from gendered roles. Nevertheless, as shall be seen in further sections, the sign of this variable changes in favour of our original hypothesis after addition of several control variables. However, we receive this result with caution due to lack of its robustness across all specifications.

Table 2.2: The impact of woman leadership on contingent protection, Negative Binomial regression, 1998-2018, Baseline specification

Variables	(1)	(2)	(3)
Woman Chief$_{i(t-1)}$	0.354**	0.263	0.599***
	(0.173)	(0.177)	(0.146)
Women in Parliament$_{i(t-1)}$(Pct)	-0.621	-1.442*	-2.246***
	(0.689)	(0.771)	(0.812)
Woman Minister of Foreign Affairs$_{i(t-1)}$		0.265	0.265**
		(0.187)	(0.125)
Woman Minister of Finance$_{i(t-1)}$		-0.590**	-0.0685
		(0.268)	(0.218)
Democracy$_{i(t-1)}$		0.750***	1.181***
		(0.171)	(0.159)
GDP Growth Rate$_{i(t-1)}$(Initiator)			0.128***
			(0.0182)
GDP Growth Rate$_{e(t-1)}$(Target)			0.0334***
			(0.00358)
ln Imports$_{ie(t-1)}$			0.612***
			(0.0199)
ln Real Exchange Rate$_{ie(t-1)}$			0.0736
			(0.206)
Retaliation$_{ei(t-1)}$			0.132***
			(0.0171)
Constant	-3.404***	-3.959***	-17.05***
	(0.321)	(0.332)	(0.549)
Observations	97,301	97,301	73,083
Pseudo R^2	0.01	0.01	0.139

Dependent variable - Number of contingent protection **Cases$_{iet}$**. Clustered (at importer-year) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include country-pair fixed effects and year dummies. Incidence Rate Ratios (IRR) are presented in Appendix B Table B.4.

feel due to increased free trade and thereby making the initiation of a protectionist cases necessary.

In the baseline model, we see significant and positive coefficients on **GDP growth$_{i(t-1)}$** of the initiator, on **Imports$_{ie(t-1)}$**, **Real Exchange Rate$_{ie(t-1)}$** 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 (Aggarwal, 2004; Knetter and Prusa, 2003; Miyagiwa et al., 2016). 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 real exchange rate and need for protection has shown a positive correlation between the two (Irwin, 2005; Knetter and Prusa, 2003; Stallings, 1993) due to the rising imports (as they become cheaper) resulting in a loss in trade competitiveness. Our results are consistent with this finding and we observe a positive and significant relationship between real exchange rate and trade conflict cases.

Feinberg and Reynolds (2006, 2018) 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**$_{ei(t-1)}$ in our analysis indicating that protection begets protection. It is worthwhile to recall the findings of Chapter 1 where we observe that retaliatory strategic motive was a positive and significant determinant of anti-dumping case filing for the Upper and Lower middle income countries sub-sample at the country level. When broken down at the sectoral level, retaliation was a strategic determinant for traditional and new users of anti-dumping as well as large importers by size of trade value. However, it is also important to note the difference between the study in Chapter 1 and the current chapter in view of the overall significance of retaliation. In Chapter 1 the dependent variable measured only anti-dumping cases for the period 1996 to 2015. In the current chapter, the dependent variable is a sum of anti-dumping and countervailing duty cases and the period of study is 1998-2018.

2.4.2   Additional controls and interactions of key variables

The interpretation of effect of leadership on any kind of policy decision can becomes compelling with the incorporation of interaction variables. This is because interaction variables can help us uncover the effects of two key variables of interest on each other. In our sample of 49 importers and 106 exporters there is a high probability that the effect of female leadership on trade policy can be heterogeneous in contrasting regimes, disparate parliament structures or diverse government structures. In other words, the interaction between an explanatory variable (Woman Chief or Women in Parliament) and an environment variable (like regime)

can modify the effect of the explanatory variable on trade policy decisions.

To address this, in Table 2.3 we present results using augmented controls (Column 1) and interactions (Column 2). The results suggest that the effect of **Woman Chief**$_{i(t-1)}$ on the proclivity to instigate contingent protection remains positive and statistically significant. Increasing percentage of **Women in Parliament**$_{i(t-1)}$ has a negative and statistically significant effect on the trade conflicts.

As stipulated before, **Woman Minister of Foreign Affairs**$_{i(t-1)}$ 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. Female ministers of foreign affairs when compared to male ministers, while holding the other variable constant in the model, are expected to have a lower **Cases**$_{iet}$ by 0.236 (refer Table 2.3 column 2). The presence of a female **Woman Minister of Finance**$_{i(t-1)}$ 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 on **Government System**$_{i(t-1)}$ that when compared with presidential 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 between key variables (Column 2 of Table 2.3), 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**$_{i(t-1)}$ and other controls as well as **Women in Parliament**$_{i(t-1)}$ and other controls. First, we discuss the interactions between Woman Chief$_{i(t-1)}$, Women in Parliament$_{i(t-1)}$, Government System$_{i(t-1)}$ and Parliament Structure$_{i(t-1)}$.

Table 2.3: The impact of woman leadership on contingent protection, Negative Binomial regression, 1998-2018, Additional controls and Interaction Results

Variables	(1) (Other controls)	(2) (With interactions)
Woman Chief$_{i(t-1)}$	0.117*	1.288***
	(0.0607)	(0.273)
Women in Parliament$_{i(t-1)}$(Pct)	-0.500	-2.916***
	(0.420)	(0.881)
Woman Chief$_{i(t-1)}$ x Women in Parliament$_{i(t-1)}$(Pct)		-0.469
		(0.615)
Woman Min. of Foreign Affairs$_{i(t-1)}$	-0.228***	-0.236***
	(0.0570)	(0.0579)
Woman Min. of Finance$_{i(t-1)}$	0.178	0.218*
	(0.108)	(0.112)
Democracy$_{i(t-1)}$	0.557***	0.524***
	(0.101)	(0.105)
GDP growth$_{i(t-1)}$ (Initiator)	0.0446***	0.0496***
	(0.00821)	(0.00851)
GDP growth$_{e(t-1)}$ (Target)	0.00440	0.00955
	(0.00591)	(0.00621)
ln Imports$_{ie(t-1)}$	0.570***	0.594***
	(0.0174)	(0.0182)
ln Real Exchange Rate$_{ie(t-1)}$	0.444***	0.517***
	(0.0893)	(0.0987)
Government System$_{i(t-1)}$(Semi Pres)	0.222*	0.318**
	(0.117)	(0.152)
Government System$_{i(t-1)}$(Parliamentary)	0.0805	0.626***
	(0.0887)	(0.167)
Woman Chief$_{i(t-1)}$ x Government System$_{i(t-1)}$(Semi Pres)		0.193
		(0.419)
Woman Chief$_{i(t-1)}$ x Government System$_{i(t-1)}$(Parliamentary)		-0.735***
		(0.134)
Women in Parliament$_{i(t-1)}$ x Government System$_{i(t-1)}$		-1.016**
		(0.451)
Parliament Structure$_{i(t-1)}$ (Bicameral)	0.569***	-0.175
	(0.0920)	(0.173)
Woman Chief$_{i(t-1)}$ x Parliament Struct.$_{i(t-1)}$ (Bicameral)		-0.694***
		(0.224)
Women in Parliament$_{i(t-1)}$ x Parliament Struct.$_{i(t-1)}$ (Bicameral)		4.951***
		(0.880)
Retaliation$_{ei(t-1)}$	0.0263*	0.0261*
	(0.0146)	(0.0143)
Constant	-13.20***	-13.50***
Observations	73,083	70,788
Pseudo R^2	0.16	0.14

Dependent variable - Number of contingent protection **Cases$_{iet}$**. Clustered (at importer-year) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include country-pair fixed effects and year dummies. Incidence Rate Ratios (IRR) are presented in Appendix B Table B.5.

The negative, albeit, statistically insignificant interaction term **Woman Chief$_{i(t-1)}$ x Women in Parliament$_{i(t-1)}$(Pct)** 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 2.3 we plot the predicted values of trade conflicts varying Woman Chief$_{i(t-1)}$ and Women in Parliament$_{i(t-1)}$(Pct), holding all other variables at mean (for continuous variables) and at median (for categorical variables). While we observe no significant change
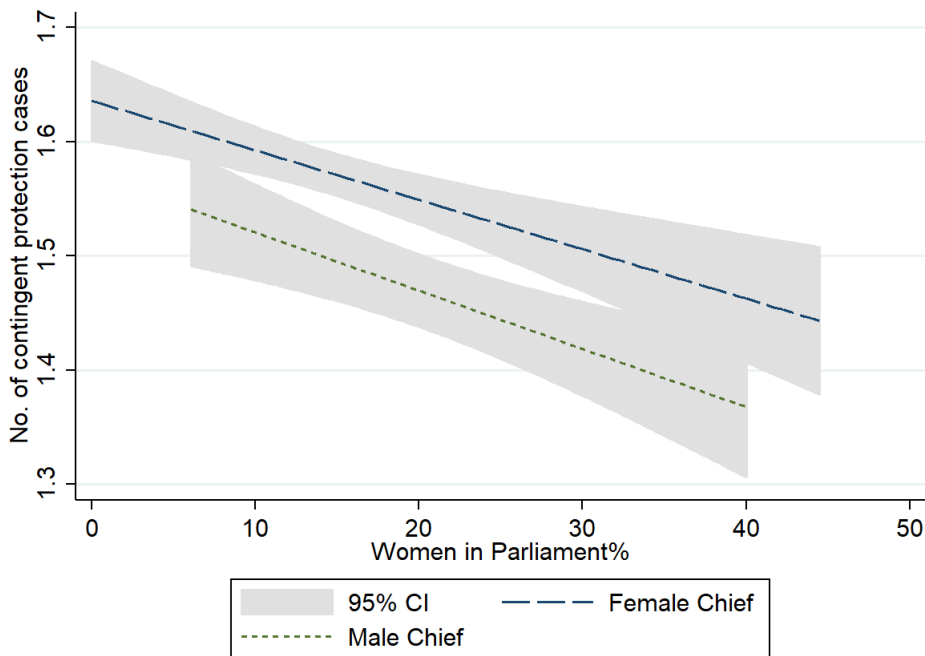
Figure 2.3: Effect of women in parliament on predicted values of contingent protection cases

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.[18]

The next interaction is between **Woman Chief**$_{i(t-1)}$ and **Government System**$_{i(t-1)}$ 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) 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 parliament structure on the higher propensity of woman leader to instigate

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[18]When 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 women and men 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.

contingent protection.

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**$_{i(t-1)}$ (Pct) and the positive coefficient of **Women in Parliament**$_{i(t-1)}$ **x Parliament Structure**$_{i(t-1)}$ **(Bicameral)** 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 for 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**$_{i(t-1)}$**(Pct) x Government System**$_{i(t-1)}$ 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.

2.4.3   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%[19]).

We estimate the empirical model using measures similar to Table 2.3 Column 2 and present results (for temporal segregation) in Table 2.4.

For both the periods, we find **Woman Chief**$_{i(t-1)}$ and **Women in Parliament**$_{i(t-1)}$ variable in accordance with our hypothesis. The interaction term **Woman Chief**$_{i(t-1)}$ **x Women in Parliament**$_{i(t-1)}$ is positive and significant in the 2009-2018 period. However, the cumulative effect (1.307-6.277+2.820 = -2.15) is negative in support of our hypothesis that conditional to the rising numbers of women in parliament, protectionist activity is reduced.

As in the baseline results, **Woman Minister of Foreign Affairs**$_{i(t-1)}$ has a negative effect on the propensity of case filing in the first period, however is not statistically significant in the more recent period. As seen before, countries that are democracies have a higher propensity

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[19]World trade in 2008 - USD 16.265 trillion and world trade in 2009 - USD 12.636 trillion (World Bank, 2018b)

Table 2.4: The impact of woman leadership on contingent protection, Negative Binomial regression, 1998-2018, Temporal analysis

Variables	1998-2008	2009-2018
Woman Chief$_{i(t-1)}$	3.433**	1.307*
	(1.438)	(0.740)
Women in Parliament$_{i(t-1)}$(Pct)	-4.152**	-6.277***
	(2.076)	(1.677)
Woman Chief$_{i(t-1)}$ x Women in Parliament$_{i(t-1)}$(Pct)	-1.538	2.820*
	(3.362)	(1.706)
Woman Min. of Foreign Affairs$_{i(t-1)}$	-1.012***	-0.00286
	(0.256)	(0.165)
Woman Min. of Finance$_{i(t-1)}$	-0.708*	0.512*
	(0.392)	(0.293)
Democracy$_{i(t-1)}$	0.943***	0.725***
	(0.236)	(0.174)
Constant	-8.332***	-9.502***
	(0.978)	(0.845)
Observations	35,133	35,702
Control variables	Yes	Yes
Pseudo R^2	0.09	0.08

Dependent variable - Number of contingent protection **Cases$_{iet}$**. Clustered (at importer-year) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include country-pair fixed effects and year dummies. Incidence Rate Ratios (IRR) are presented in Appendix B Table B.6.

to initiate contingent protection measures.

The effect on protectionist cases of **Woman Minister of Finance**$_{i(t-1)}$ when compared to men is negative in the first period and positive in the second. A more thorough investigation needs to be made on this reversal of signs in the two periods with respect to this ministerial portfolio. However, we may attribute it to the more protectionist stands adopted by countries due to bad economic performance in the period after the global financial crisis.

2.4.4 Robustness checks

As stipulated by our two hypothesis presented in earlier sections, we expect a difference between the impact of leading women from that of women in parliament on protectionist cases. From our results presented in Table 2.2 and 2.3 we find results in line with these hypotheses. However, as a robustness method, we also test four key variables **Woman Chief**$_{i(t-1)}$, **Women in Parliament**$_{i(t-1)}$, **Woman Minister of Foreign Affairs**$_{i(t-1)}$ and **Woman Minister of Finance**$_{i(t-1)}$, each on its own (Table 2.5). We can observe that in individual

capacities too, the variables exhibit the same qualitative behaviours as they do together. To reiterate, what is being identified in this chapter is the impact on protection of being a leading woman versus being a leading man, impact of being a woman foreign minister vs man foreign minister. In the last column of Table 2.5 we also present the result of interacting women chief of the initiator and target country. The results show that **Woman Chief**$_{e(t-1)}$ **(Target)** is negative and significant indicating either of two possibilities. First, countries with women chief are not engaging in dumping activity, therefore, are not targeted. Second, countries with women chief are expected to take more countermeasures (maybe as retaliation or because of weak threat of countermeasure) and therefore not targeted. The latter explanation also falls in line with our own argument that countries with women chief take more protectionist measures and the reputation built can deter other countries from targeting them (even when instigator is led by women). However, the interaction term **Woman Chief**$_{ie(t-1)}$ **(Both)** is not significant indicating the absence of a conflict only against men leaders.

Table 2.5: The impact of woman leadership on contingent protection, Negative Binomial regression, 1998-2018, Robustness checks

	(1)	(2)	(3)	(4)	(5)	(6)
Woman Chief$_{i(t-1)}$	1.025***				1.021***	1.168***
	(0.219)				(0.221)	(0.229)
Women in Parliament$_{i(t-1)}$(Pct)		-2.729***				-2.985***
		(0.871)				(0.875)
Woman Min. of Foreign Affairs$_{i(t-1)}$			-0.219***			-0.237***
			(0.0576)			(0.0578)
Woman Min. of Finance$_{i(t-1)}$				0.199*		0.204*
				(0.111)		(0.111)
Woman Chief$_{e(t-1)}$ (Target)					-0.0734**	-0.0666**
					(0.0759)	(0.0761)
Woman Chief$_{ie(t-1)}$ (Both)					0.0411	0.0394
					(0.164)	(0.163)
Democracy$_{i(t-1)}$	0.513***	0.502***	0.542***	0.511***	0.514***	0.529***
	(0.105)	(0.104)	(0.105)	(0.105)	(0.105)	(0.105)
Constant	-13.87***	-13.45***	-13.92***	-13.91***	-13.87***	-13.50***
	(0.420)	(0.438)	(0.420)	(0.421)	(0.420)	(0.439)
Observations	70,788	70,788	70,788	70,788	70,788	70,788
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.147	0.143	0.148	0.147	0.147	0.147

Dependent variable - Number of contingent protection **Cases**$_{iet}$. Clustered (at importer-year) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include country-pair fixed effects and year dummies.

Additionally, 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 B Table B.8 and Table B.9). 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 and South Africa). 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.

2.4.5 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 $\mathbf{Cases}_{iet}$ and the presence of a woman chief in the following manner: Our main hypothesis is that having a woman head of country (Woman Chief$_{i(t-1)}$) leads to higher trade conflicts with partner trading nations. But there might be an alternative explanation for our positive 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 globalisation or free trade. In this scenario, the leaders voted into office are under pressure to 'fulfil their promise' of opposing free trade (Van der Waal and De 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 could 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 government[20]. Identification of

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[20]While 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

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 $\mathbf{Cases}_{iet}$ through channels other than the potential endogenous variable, i.e. the presence of a $\mathbf{Woman\ Chief}_{i(t-1)}$.

The instrument we use is $\mathbf{Gender\ Quota}_{i(t-1)}$. 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 quotas[21]. 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. However, researchers believe that more effective quota strategies are warranted in view of the asymmetrical results quotas produce (Campbell and Heath, 2017; Franceschet, 2011).

We assume that our instrument is exogenous 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 2.6 (the coefficient estimates of other controls are not reported here to conserve space).

We observe that our main variable of interest, i.e. $\mathbf{Woman\ Chief}_{i(t-1)}$ continues to remain statistically significant and with positive effect on the case filing propensity. In comparison to the estimates presented in Table 2.3 column 1 (without interaction terms), the estimated coefficient sees an upward revision (0.178 against 0.117) and higher significance level (1% against 10%). As can be seen from the IV results, the interaction term Woman Chief$_{i(t-1)}$ × Women in Parliament$_{i(t-1)}$(Pct) is statistically significant with a coefficient of minus 0.482 reconfirming the moderating effect of higher percentages of women parliamentarians in the propensity to initiate trade conflicts.

After including the instrument in the analysis, we see an effect similar in nature to the Woman Chief$_{i(t-1)}$ on the Women in Parliament$_{i(t-1)}$(Pct) with higher percentages of women

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two step IV method.

[21]In 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.

Table 2.6: The impact of woman leadership on contingent protection, Instrumental Variable (IV) analysis, 1998-2018

Variables	*Second stage estimates*
Woman Chief$_{i(t-1)}$	0.178***
	(0.0503)
Women in Parliament$_{i(t-1)}$(Pct)	0.304
	(0.157)
Woman Chief$_{i(t-1)}$ x Women in Parl$_{i(t-1)}$(Pct)	-0.482***
	(0.186)
Constant	0.0546
	(0.0344)
Observations	73,083
Standard Controls	Yes
Excluded Instrument	Gender Quota
Interaction Terms	No
R^2	0.04
F stat (Prob > F)	23.16
Hansen J Stat Chi^2 (p-value)[†]	

First Stage (Instrumented: Woman Chief)	
	Woman Chief
Gender Quota$_{i(t-1)}$	0.461***
	(0.0557)
Pseudo R^2	0.15
Observations	73,083
Standard Controls	Yes
Interaction Terms	No

Dependent variable in the second stage - Number of contingent protection **Cases$_{\textbf{iet}}$**. Clustered (at importer-year) 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. Incidence Rate Ratios (IRR) for the second stage is presented in Appendix B Table B.7.

parliamentarians leading to a reduction in the contingent protection cases. We also report the coefficient estimate of our instrument **Gender Quota$_{i(t-1)}$** in the first stage of the regression. We observe that **Gender Quota$_{i(t-1)}$** is statistically significant and positive determinant of **Woman Chief$_{i(t-1)}$** and **Women in Parliament$_{i(t-1)}$** 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.

2.5 Conclusion

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 pertinent in current times where major trading nations of the world have leaders who exhibit masculinity in their personalities. These leaders have come head on in small and large 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 start with a general framework 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 parliamentarian level women are under *less pressure to prove themselves.*

We find empirical evidence corroborating our hypotheses using a panel of 49 contingent protection users against 106 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 parliamentarians, 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 government system of the country, parliament structure and; whether the country is a democracy or not. Our results help us conclude that irrespective of whether women ***are*** more protectionist or ***behave more*** protectionist based on the situation, their stands on protection are different from those

of male counterparts.

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 chapter is the first study which examines the role of leader's gender 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 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. This is because in recent times, in almost all cases protectionist policies are driven by the popular electorate.

<p style="text-align:center">***</p>

Chapter 3

Medicine with side effects
Aid for Trade followed with targeted protection

3.1 Introduction

USD 4 trillion (2018 constant) have flowed from official donors[1] to developing countries
between 1960 and 2018 under the categories of Official Development Assistance (ODA) and
Other Official Flows (OOF)(OECD, 2019f). However, research is fairly undivided about the
partial success of this aid in promoting growth and reducing poverty (Alesina and Dollar,
2000; Berthélemy, 2006). Baldwin (1969) was amongst the first researchers to point out that
while there appeared to be a connection between aid and influence[2], the exact nature of this
connection is unknown. Over the years, a number of researchers as well as policy makers
continue to question whether there are significant and positive effects of aid on the recipient's
macroeconomic policies and growth (Alesina and Dollar, 2000; Kono and Montinola, 2015;
Lundsgaarde et al., 2010). In a recent reflection on rethinking economic development, Nunn
(2019) stipulates that there are several reasons to think that the adverse effects of foreign
aid are being underestimated because of the unintended consequences that foreign aid may
give rise to. In summary, if foreign aid is not an inviolable policy to *fix the deficiencies* in
developing countries, do other feasible policy interventions exist to tackle underdevelopment?

A possible answer to this question may be that in addition to foreign aid, international

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[1]Originally conceived as the Development Assistance Group in 1960, now called the Development Assistance
Committee which has 30 members, including the European Union as a stand alone entity

[2]Baldwin (1969) used the following definition of influence: The ability of A to get B to do something he/she
would otherwise not do.

trade policies are significant instruments for generating and reallocating wealth in the world economy and represent important ways through which developed economies can contribute to the development of disadvantaged nations (Lundsgaarde et al., 2010; Nunn, 2019). In the context of Aid, specifically, Aid for Trade (AfT)[3] programmes have received swelling interest from researchers and policy makers alike in the past decade subsequent to the formal revival of the programme in 2005[4]. There is evidence that AfT, has a negative impact on cost of trading and boosts export activity (Cali and Te Velde, 2011); increases trade (both imports and exports) between donor and recipient (Nunnenkamp and Thiele, 2006; Pettersson and Johansson, 2013); is strongly linked with bilateral greenfield investment, and; boosts investment in infrastructure (Lee and Ries, 2016).

This chapter is an attempt to answer the following question: whether the aforesaid (and purported) benefits of AfT have really provided a 'level playing field' to developing economies. In other words, this chapter investigates, whether the donor countries assist in the AfT objectives by not only providing aid, rather also opening up their markets to the new export potential that the recipient countries develop as a result of AfT. We use data pertaining to the United States of America (USA/US) as the donor of interest and with empirical analysis examine whether the US has opened or closed its markets to its AfT recipients through more or less incidences of contingent protection (anti-dumping and countervailing duties). We find considerable evidence that the proceedings of aid allocation are followed by a surge in contingent protection activities. We find evidence that USA's contingent protection activity increases against a country which has been the recipient of its Aid under the AfT programme in the previous year. This is a surprising result and could be prevailing for multiple reasons. First, it is possible that this effect exists because of the inefficiencies of government departments in initiating and seeing through conflicting policies. Second, donor governments could be indulging in giving from one hand and taking from another just to boost their own exports and curb exports from the recipients. This strategy also ensures a *moral economy* win for the donor government, albeit, making the playing field difficult to

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[3]Foreign aid or official development assistance (ODA) under the Creditor Reporting System (CRS) is classified according to the purpose that that it is designed to address in the recipient's economy (OECD, 2019b). It does not refer to the type of goods or services provided. All of the ODA is classified into purpose codes and Aid for Trade (AfT) is a subset of ODA. AfT is further divided into two broad categories - Economic Infrastructure & Services (DAC code 200) and Production (DAC code 300). Within these two categories, there are further divisions based on coverage area of the aid. Refer Table C.1 for details.

[4]In December 2005, at the 6th Ministerial Conference of the WTO in Hong Kong, the participating WTO members launched an AfT initiative. AfT has been an element of the WTO since its inception. However, it maintained a low profile until 2005. During the Hong Kong Ministerial conference in 2005, the WTO vigorously pushed the AfT agenda (amongst others) evincing it as a strategic means to pursue trade liberalisation thereby furthering the cause of poverty reduction and enhancing fair North-South trade.

attain for the recipient. Third, this could be a spurious correlation. Further analysis would be necessary to determine which explanation is the most relevant. However, investigating the precise channel is beyond the scope of this study and is therefore assigned to further research.

In this chapter, we also undertake a systematic evaluation of specific types of AfT - that is *aid to economic infrastructure & services* and *aid to productive capacity* - on rise in contingent protection against the recipient by the donor. We believe that the virtuous effects of AfT for economic infrastructure & services in terms of increased exports from the recipient could be linked to the increase in contingent protection against the recipient. One may question if donor would eventually like to curb imports from the recipient why give aid (to enhance trade facilitating infrastructure) in the first place? Here, we argue that through the overarching goal of trade facilitation the donors action may tilt towards their own interest of improving donor imports to the recipient[5].

This chapter finds considerable evidence that the proceedings of aid allocation are followed by a surge in protectionist activities. One could think, given the complexities of government systems, the decision to give aid or decision to initiate contingent protection may not be conditional on each other. We have reason to believe that they are linked because of the great overlap between congressional committees that take decisions on foreign policy (including aid) and trade policy (Box 1). Additionally, as a testament to this linkage, in this chapter, we include case studies on US shrimp, cotton and honey markets. Our empirical findings are in line with these case studies (presented in Box 2, 3 and 4 in Appendix C).

The organisation of this chapter is as follows: Section 3.2 discusses the marked results of available literature on foreign aid, aid effectiveness, AfT and protection and highlights the theoretical motivation for the relationship between aid and protection. Within Section 3.3, which is the empirical framework, we provide reasons for the choice of donor, following it with the data source, variable construction and remedy of potential endogeneity. Section 3.4 provides baseline results and Instrumental Variable (IV) approach results. Section 3.5 is an extension of the base work by dis-aggregating aid into aid for **Economic Infrastructure & Services** (Sector 200) and **Production Sector** (Sector 300). Section 3.6 provides a battery of sensitivity and robustness checks alongwith results for other significant donors of interest (Australia, Canada, European Union and New Zealand); Section 3.7 concludes this chapter.

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[5]Amongst vocal critics of Aid for Trade (AfT) and related programmes are Langan and Scott (2014) who suggest that question the 'development' credentials of AfT assistance. They suggest that AfT instruments are often captured by corporate interests, failing to deliver poverty reduction or economic development.

3.2 Foreign Aid and Aid for Trade - Related literature

The literature on foreign aid has two distinct strands: one on the **determinants of foreign aid**, i.e. why do donors give and to whom; and the second on the **effects of foreign aid** on the recipient countries in terms of impact. There are numerous studies trying to evaluate the relationship between aid, growth, investment and development, however, the findings have been divided, with no consensus on either direction or size.

On the many motives of foreign aid allocation, Apodaca (2017) explains that the official government rhetoric endorsing disbursement of aid is: *to assist in development and poverty reduction.* Amongst the global guiding principles of donors are also amelioration in global security by tackling threats to human security which arise due to poverty and growth in extreme inequalities between rich and poor. Among developed nations, the allocation of foreign aid to developing countries, has become a 'norm' (Lancaster, 2008). However, amongst the many motives of foreign aid by developed countries the following donor agenda points seem to take the spotlight: *Historical colonial power* (Alesina and Dollar, 2000; Lavallée and Lochard, 2019); *Geopolitical Influence* (Apodaca, 2017); *Commercial Gains* (Nunn, 2019; Radelet, 2006; Riddell, 2009); and, *Prevention of effects of negative externalities* (Burnside and Dollar, 2000).

In a turn of the tide, we are increasingly seeing the rising prominence of new donors like China, India, Gulf Cooperation Council (GCC) members and Russia (Gulrajani and Swiss, 2018). These are nations with strong economies that are increasing their global footprint by foreign aid to less developed nations. In these countries, poverty levels remain high and they continue to be top recipients of foreign aid themselves, stirring the debate whether scarce resources should be focused domestically instead of being spent in foreign lands. However, the current chapter focuses on traditional donors and the analysis for new donors (who are also active users of contingent protection) is an interesting prospect for future research.

3.2.1 Effectiveness of Aid

The issue of foreign aid effectiveness and whether aid causes economic growth is highly debated. The results of previous empirical studies have been mixed. On the positive effects of foreign aid, Martínez-Zarzoso et al. (2017) find that development aid has a robust direct effect on donor exports and an indirect positive effect on income levels in the recipient countries. Burnside and Dollar (2000) find that aid has a positive impact on growth in developing

countries with good fiscal, monetary, and trade policies but has little effect in the presence of poor policies. Hansen and Tarp (2001) find that aid is effective with the results *not dependent on policy.* At the same time, many studies find deleterious consequences of foreign aid like fuelling conflict, rise of dictatorial or autocratic powers and increased corruption (Nunn, 2019).

On the economic front, Werker et al. (2009) find that aid substitutes for domestic savings, has no effect on the financial account, and leads to unaccounted capital flight. Martínez-Zarzoso et al. (2017) point out that while many studies have found aid as an ineffective contributor to per capita income and recipient-country exports, majority of the studies fail to differentiate between the types of aid like AfT, technical assistance, military aid, humanitarian assistance, or sector specific aid.

Before getting into the the core of this analysis, it is pertinent to point out that literature has laid significant stress on the discussion of Aid and Trade ***flows*** rather than ***policies***. The trade policy vector may contain various instruments like tariffs, taxes, quotas or protective administrative procedures like anti-dumping and countervailing duties as well as discriminatory policies like subsidies, barriers to entry and overarching regulations to trade. The aid policy vector is typically constituted of bilateral and multilateral aid instruments including conditional and tied aid, targeted versus general funds and safety nets. Also, while literature focuses on an aggregate view of these policies, a targeted policy recommendation becomes applicable if the various instruments of these policy areas are studied with a degree of disaggregation (Suwa-Eisenmann and Verdier, 2007).

In this analysis, we augment the focus on aid and trade policy vectors by focusing on the AfT instrument of aid policy with specific scrutiny on the protectionist instruments in trade policy that donors may or may not adopt subsequent to aid commitment.

3.2.2 Aid for Trade (AfT)

The 6th Ministerial Conference of the WTO in Hong Kong was followed by the setting up of a task force which was made responsible for the operationalisation of the AfT programme[6]. The WTO noted that it had a catalytic role to play in the working of relevant agencies and organisations which were entrusted with the responsibilities of ensuring effective flow of aid between donors and recipient developing countries. A key point that the WTO focuses on

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[6]For a summary on the significant numbers related to AfT refer Appendix C AfT in numbers. For details on the composition of AfT categories see Martínez-Zarzoso et al. (2017)

is the encouragement of mainstreaming trade into national development strategies of the recipient countries. As an after effect of the recommendations of the task force constituted in 2006, 2007 onward the WTO started global monitoring of the aid for trade flows[7]. This included monitoring of individual donors to ensure additional aid for the AfT programme, and, monitoring whether the needs of developing countries for additional AfT were effectively communicated and met by the international donor community. In the WTO set-up, activities under the AfT programme are carried out in a biennial fashion and reviews are available from 2007 up to the most recent one in July 2019.

Is Aid for Trade working?

On the role of aid flows influencing trade flows, Suwa-Eisenmann and Verdier (2007) present a survey of theoretical and empirical literature with a special focus on AfT initiatives. They postulate that aid may affect trade in multiple ways. First, through general economic betterment effects that aid induces in the recipient country. Second, aid could be directly tied to trade. Third, aid reinforces stronger economic and political links and finally, aid may affect trade as a combination of all the above factors. However, in the classical sense, theoretical arguments indicate that aid is a more direct instrument for a donor rather than providing market access to the recipient.

Lundsgaarde et al. (2010) provide evidence that donors employ aid as a complement to trade[8]. They challenge the purportedly altruistic motives of aid disbursement suggesting that aid allocation patterns have underlined the differences between developing countries with respect to possibilities of development. Their argument is that recipient nations privileged with international market integration are also privileged with aid reception.

In other empirical studies, Brazys (2013) also finds considerable variation in the export effects of the AfT programs, ranging from programs with no impact on recipient country exports to programs that are positively correlated with recipient country exports to the donor country and/or the rest of the world. Cali and Te Velde (2011) establish empirically that while AfT has a substantial negative impact on the cost of trading and boosts export activity, the impact is heterogeneous. Additionally they find that the strong positive association with exports at the sectoral level is due to an allocation skewed toward already well performing sectors. They identify several sources of market failures and provide an avenue for the role of

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[7]Based on work of the OECD (2019a)
[8]Lundsgaarde et al. (2010) use 22 donors and 187 recipient countries

AfT in each of these failures. Consequently, they suggest that if AfT instruments are applied effectively, they can achieve the goals set out by the WTO task force back in 2006[9].

However, Nunn (2019) raises a germane issue calling the present equilibrium between donors and recipients *strange.* This is due to the fact that while the donor countries offer *help* to developing countries, they potentially countervail development by protectionist policies, including anti-dumping duties.

In summary, it can be said that evidence on the impact of AfT on recipient countries (first on trade and second on alleviation of poverty) are scant (Langan and Scott, 2014) and mostly released by donors themselves or international organisations like the OECD. To this effect, this chapter is a novel attempt to investigate **whether donor nations open their markets to developing nations who are recipients of their AfT assistance?** We reiterate, the goal of this chapter is to investigate whether the benefits from AfT programmes are offset by increasing protectionist policies against recipients. In order to do this, we commence with a theoretical model for the relationship between aid and protectionist policies.

3.2.3   Theoretical motivation for this study

Cali and Te Velde (2011) identify how AfT may address market and governance failures. They elicit that market failures could take place through lack of coordination, inefficient development, adaption and adoption of technology, underdeveloped skills formation or poor infrastructure; and, AfT is expected to assist in the fixing of these market failures. Let us assume that AfT is successful in mitigating the constraints that developing countries experience due to the aforesaid failures. Consequently, developing nations develop necessary coordination, technology, skills and information to integrate into the global trading system by bringing down costs of trading. This is empirically tested by Cali and Te Velde (2011) and subsequently by Hühne et al. (2014) who suggest that AfT increases recipient exports to donors as well as recipient imports from donors, with the former effect dominating the latter. Vijil and Wagner (2012) go a step further to examine the channel that affects trade performance. They find evidence that, through the infrastructure channel, AfT has a positive effect on exports from the recipient.

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[9]These include: improving trade policy co-ordination (Task Force AfT category: trade development); developing standards to improve access for exports (trade facilitation); improving skill formation (trade related adjustment); improving infrastructure (trade-related infrastructure); overcoming governance failures, such as weak institutions or weak administrative procedures (trade policy and rules)(Cali and Te Velde, 2011; Hühne et al., 2014).

Lahiri et al. (2002), through a two-country-two-goods trade model, exhibit that when the level of aid is decided before the level of trade tariffs, foreign aid may induce the recipient country to a more open trade policy and therefore give the donor an incentive to choose aid in the first place. It is common knowledge that a transfer (of aid), may turn the terms-of-trade[10] effect in favour of a recipient country. In such a situation since the terms of trade have already been moved in the right direction, the recipient country is prompted to adopt a more open trade policy, at any level of the trade policy by the donor country.

Subsequently, the onus of increased trade flows between the countries now rests **with the donor country** by less protectionism towards the recipient country. In such a setting, aid tied to reducing protectionism in the recipient country may be Pareto improving[11] for both economies, as it can be perceived as a commitment towards trade liberalisation. In such a case, AfT implements a better world-economy in a way which is credible and politically feasible (Suwa-Eisenmann and Verdier, 2007). Lahiri et al. (2002) suggest that without altruism[12], the only value of aid for the donor is from the strategic spillover effects it has in terms of the trade instruments between the two countries. They suggest that in cases when level of aid is decided before level of tariffs, aid induces the recipient to more open trade policies giving an incentive to the donor to choose aid first. Subsequent increase in trade flows between the two countries now depends on what the donor country does. Does it enhance or curtail market access to the recipient? Suwa-Eisenmann and Verdier (2007) suggest that this question is not particularly relevant for LDCs, as they already have free access to donor country markets through preferential trade agreements. Here, the question turns to the emerging economies who have ascended the economic order in recent decades. These Lower middle and Upper middle income countries continue to receive aid, however, are significant exporters supplying to donor countries. Could there be a link between the rising export capacity of these countries (possibly ameliorated because of AfT) and increased targeting by donors?

At this juncture, it is important to reiterate that the link between increased imports from a trading partner and contemporaneous increased protection is well established in literature. Blonigen and Prusa (2001); Prusa (2001, 2005); Zanardi (2004) present empirical analysis which supports the hypothesis that increased imports from the recipient (exporter) are seen as a threat to domestic industry and hence lead to a surge in contingent protection activity. This

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[10]ratio of export prices to import prices

[11]a Pareto improvement occurs when a change in allocation harms no one and helps at least one player, given an initial allocation of goods for a set of player.

[12]Assuming that aid is given or received only if it increases welfare for both the donor and recipient.

dissertation also finds evidence of increased imports being positively linked with contingent protection activity consistently in Chapters 1 and Chapter 2.

Therefore, the theoretical argument of this chapter can be summarised in two steps

- AfT increases export capacity of the recipients and the exports to donors witness a surge
- Increased imports from the recipient lead to tacit curtailment of market access through contingent protection activities

In Figure 3.1 is provided a diagrammatic framework of the potential link between *aid flows*, *trade flows* and *protection* flows. Our argument is that flow of aid from the donor to recipients (indicated by solid arrows titled *aid flows*) leads to an augmentation of export capacities (indicated by solid arrows titles *trade flows*)[13]. Subsequently, due to increased import flows from the recipient to the donor, protectionist flows (indicated by dotted arrows) from the donor to recipient can manifest. This is the exact factor at the core of this chapter.

Coming to the last leg of the framework presented in Figure 3.1 we see that conditional to the recipient's capacity to initiate protectionist cases[14] there can be an upsurge in protectionist cases from the recipient to the donor. While this aspect of retaliatory protectionist flows from the recipients is observed in the findings of Chapter 1 for upper and lower middle income countries (recipients of aid), it is not reviewed in this chapter from the lens of aid flows. A detailed analysis of inter-link between aid received by recipient and increase in its protectionist stand (as retaliation) against donor is an interesting path for future research.

With this theoretical background, we investigate empirically whether increasing aid flows act as drivers of increased protectionist policies by the donors in recipient markets.

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[13]We do not overrule the fact that aid can also be used as a means to promote the donor's imports into the recipient nation, in other words the phenomenon of *tied aid*. However, since the contingent protection action of donor nations is directly related with trade flows from the recipient to the donor (as evidenced in Chapter 1 and Chapter 2) this chapter focuses on these. The inter-play between donor imports *from* the recipient nation and donor imports *to* the recipient nation is an avenue for further research.

[14]As explained by Bown (2008) the retaliation from a trading nation depends on the capacity to initiate and fight disputes at the WTO.
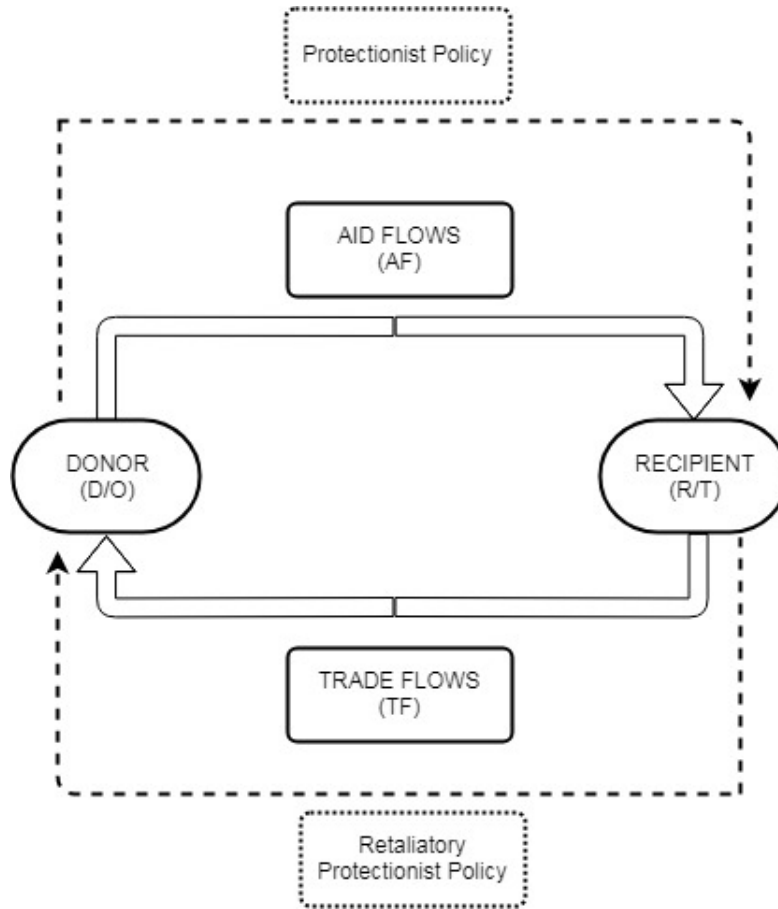
Figure 3.1: Interactions of aid, trade and protection policies
Source : Author

3.2.4 Policy dynamics in donor country of interest

The aforesaid theoretical hypothesis innately leads to the question of practical overlaps in terms of aid and trade policy jurisdictions in donor nations - which is a difficult knot to disentangle. However, we find affirmative evidence of such an intersection in case of the USA. We present information about jurisdictional overlaps in US congressional committees in Box 1. This helps us understand the overlap between policy makers when it comes to aid and trade policy design.

Box 1   How is trade and aid policy designed in the US?

The US Congressional Research Service (2019) states that foreign aid is an essential element of US foreign policy. The other tools of foreign policy being US defense establishment, the diplomatic corps, public diplomacy, and *trade policy*. The same report by The US Congressional Research Service (2019) says:

> *Foreign aid is a particularly flexible tool — it can act as both carrot and stick, and is a means of influencing events, solving specific problems, and projecting US values.*

Aditionally,

> *More broadly, as countries develop economically, they are in a position to purchase more goods from abroad and the United States benefits as a trade partner. Since an increasing majority of global consumers are outside of the United States, some business leaders assert that establishing strong economic and trade ties in the developing world, using foreign assistance as a tool, is key to US economic and job growth.*

Numerous congressional authorising committees and appropriations subcommittees maintain responsibility for US foreign assistance (Interaction.org, 2019). These are:

Senate Committees	House of Representatives Committees
on appropriations	on appropriations
on foreign relations	on foreign affairs
on the budget	on the budget

Of the aforementioned, the committees on appropriations, foreign affairs and foreign relations are consulted with the most to create trade policy (Office of the U.S. Trade representative, 2019).

Therefore, we can say that there is considerable overlap between committees and therefore, decision makers of US foreign assistance and trade policy.

While we see overlaps in the policy design at the senate committee levels, it is plausible that lack of coordination and communication at the executive level could cancel the positive effects of Aid for Trade. It is possible that the expenditure on AfT is merely a means to achieve the moral economy objectives diverting attention from other factors, for example, the WTO's lopsided negotiating rules, or the tacit objective to change exports away from sectors in which the US may also have a comparative advantage. While the AfT commitments have presented themselves in support of liberalisation of developing countries to pull them out of poverty, the commensurate liberalising by developed countries (specially towards the recipients) remains to be tested (Langan and Scott, 2014). Thus, while not entirely clear which is the dominant route, there is possibility that on one hand aid policy makers continue to approve funds for trade liberalising efforts, they are weighed down by commensurate protectionist measures which may be economically more attractive for the donor.

With the aforesaid in background as our theoretical inducement, we present details on the data and empirical framework in subsequent section.

3.3 Empirical Framework and Analysis

3.3.1 Data
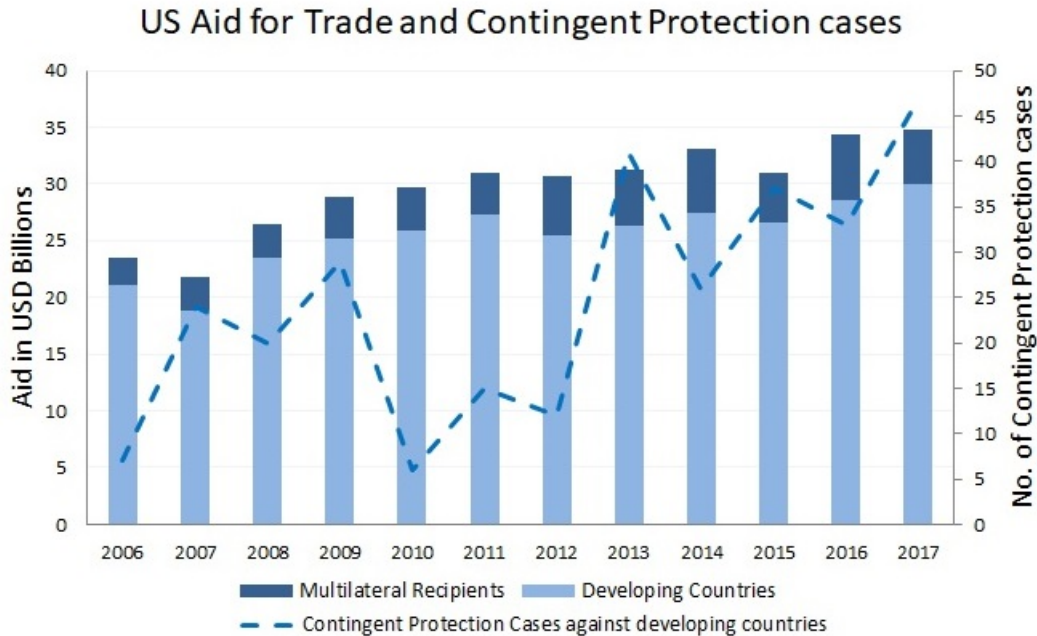
Figure 3.2: US AfT commitment and contingent protection case initiation from 2006 to 2018
Source: Author's calculation based on OECD-DAC CRS, aid activity database (OECD, 2019f) and
Temporary Trade Barriers Database (Bown, 2016)

Aid literature has classified donors into two broad categories. The *traditional* donors who are members of the OECD's DAC and the *emerging* donors like China, Brazil and Saudi Arabia[15]. Within the group of DAC donors, US tops the chart in aid disbursement with 18% share of all donors globally and 28% share in the DAC donors group (OECD, 2019e). While the US is a major donor, they have also been very active in initiating contingent protection cases against developing countries[16] (Figure 3.2). Amongst the developed countries or traditional[17] users of Anti-dumping, the US ranks first in initiating contingent protection cases since the

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[15] China, Brazil and Saudi Arabia give more ODA than half of the DAC donors (Walz and Ramachandran, 2011)

[16] The US has initiated 666 contingent protection cases against developing countries between 1995 and 2018. Between 2006 and 2018, this number is 438 cases.

[17] Traditional users of contingent protection are the USA, the EU, Australia, New Zealand and Canada (Prusa, 2005)

formation of the WTO in 1995 till most recent recorded data for year 2018 (Refer Figure 2 in the General Introduction for a visualisation of top countries using non-tariff measures).

USA's commitments in the AfT category have come down from USD 4.4 billion in 2006-2008 (average) to USD 2.4 billion in 2017[18] (disbursements for 2017 are also USD 2.4 billion). Nevertheless, the US is a major donor in the African Development Bank (AfDB) with its AfT to the AfDB reaching a high of USD 285.85 million (constant 2017) in 2004. The International Development Agency (IDA) which committed average USD 213 billion in 2016-2017, and disbursed USD 110 billion in the same period, received on average USD 1.34 billion per year between 2012 to 2017 (Nelson, 2018; OECD, 2019f) from the USA. The Asian Development Bank has also received on average USD 108 million from the US between 2013 and 2015. This amount came down drastically to USD 5.72 million in 2016 (OECD, 2019f). In summary, as corroborated in Figure 3.3 and 3.4, it is clear that US commitments as a percentage of GNI in AfT as well as total ODA have come down.
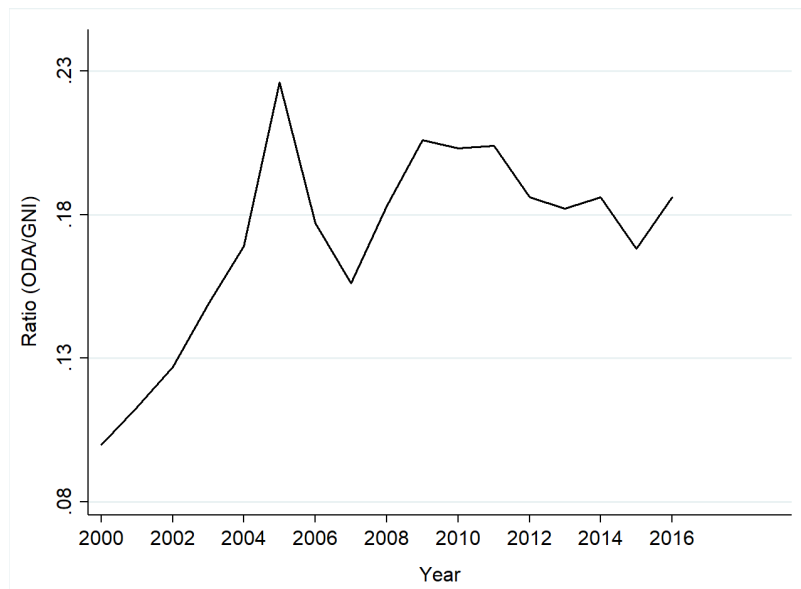
Figure 3.3: US Net ODA provided (bilateral & multilateral), total (% of GNI)
Source: World Bank (2019d)

Nevertheless, the US is a major donor to multilateral agencies which in turn are the top donors in the AfT programmes. However, it is not possible for us to match exactly how much of the US aid to multilateral agencies is used for AfT programmes, specially recipient-wise. To this effect, Apodaca (2017) explains that multilateral aid is perceived as politically neutral and autonomously controlled by the multilateral lending agencies. Therefore, we restrict our

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[18]This amount is 0.012% of US GDP in 2017.
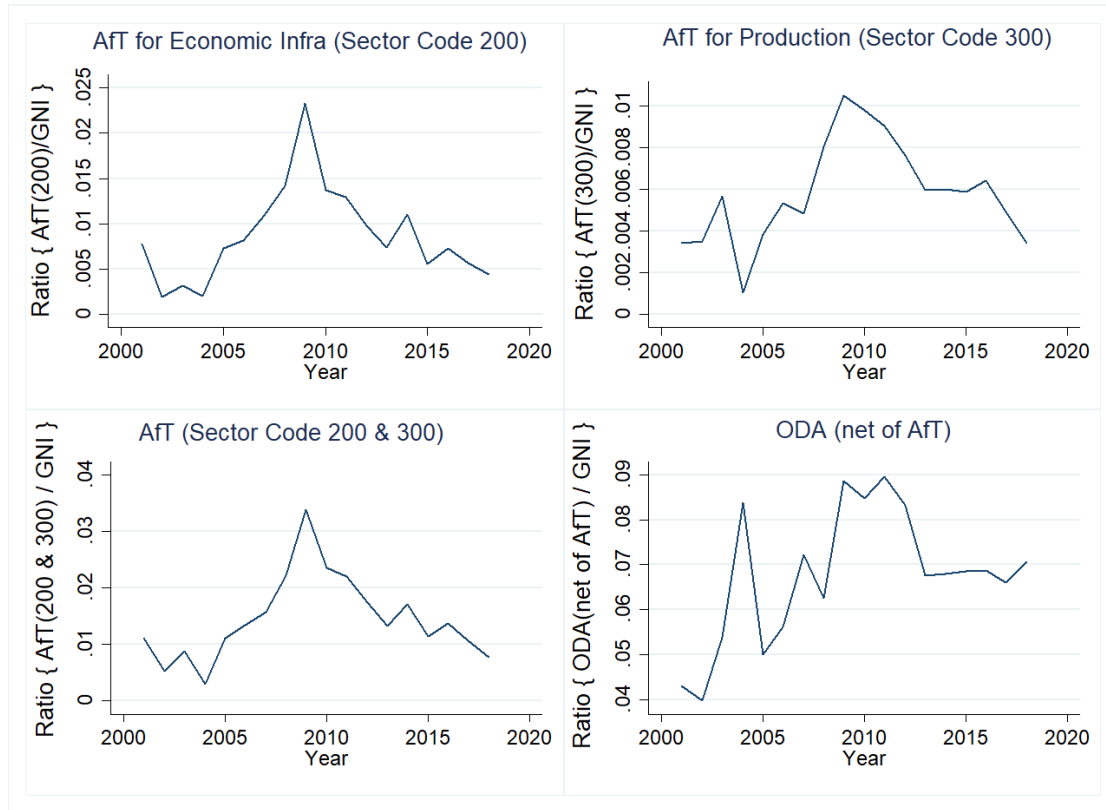
Figure 3.4: US Aid commitment to bilateral recipients (as a percentage of GNI)
Source: Author's calculation based on OECD-DAC CRS, aid activity database (OECD, 2019f) and
World Bank (2019b)

analysis to bilateral AfT to gauge the impact of direct US Aid decisions.

As mentioned before, for the first part of the analysis with the US as donor of interest, on
the recipient side, we have 106 developing countries which have received US ODA in the
2001-2018 period (not necessarily having received US AfT). For a list of recipient countries
targeted under US contingent protection refer Appendix C Table C.2.

3.3.2 Empirical specification and construction of key variables

Our econometric model is developed as below with contingent protection on the left hand
side of the equation and trade and other controls on the right hand side. To control for
unobserved country and time characteristics - including multilateral resistance (Anderson
and Van Wincoop, 2003) - we include dummies for exporter (recipient) and time. The
empirical specification is presented in Equation 3.1 with an expansion of variable meaning
and construction in the next sub-section. Note that the determinants of contingent protection

cases are consistent with the specification in Chapter 1 and Chapter 2.

$$
\begin{aligned}
Cases_{\text{drt}} =& exp(\beta_0 + \beta_1 ln(max\{1, AfT_{dr(t-1)}\}) + \beta_2 NAD_{dr(t-1)} + \\
& \beta_3 ln\ GDP\ per\ Capita_{r(t-1)} + \beta_4 ln\ Import_{dr(t-1)} \\
& + \beta_5 ln\ Real\ Exchange\ Rate_{dr(t-1)} + \beta_6 Retaliation_{rd(t-1)} + \beta_7 RTA_{dr(t-1)} \\
& + \beta_8 New\ Donor_{r(t-1)} + \gamma_r + \lambda_t)\epsilon_{drt}
\end{aligned}
\tag{3.1}
$$

In the specification presented in Equation 3.1, the dependent variable is $\mathbf{Cases_{drt}}$ which is an arithmetic sum of the number of contingent protection initiations (anti-dumping cases and countervailing duty cases)[19] initiated by the US (donor/$\boldsymbol{d}$) against a recipient country ($\boldsymbol{r}$) in year $\boldsymbol{t}$.

In their data reporting the World Trade Organisation makes clear distinction between *cases initiated* - number of investigations initiated by the country as importer; and *measures implemented* - number of final measures implemented or imposed by the country as importer. Prusa (1992) and Blonigen and Prusa (2001) suggest that just initiations can also lead to a drop in exports even if they do not result in imposition of duties. There is a numerical difference in the number of cases initiated and imposed (measures), albeit, not a very large difference. In addition to *initiations*, this chapter also tests the effect of AfT on protection *measures*[20]. The specification in Equation 3.1 is repeated with the dependent variable as $\mathbf{Measures_{drt}}$ and results are presented in the Appendix C Table C.3.

In order to avoid the loss of the observations with zero or very small values of aid, in line with Cali and Te Velde (2011) and Pettersson and Johansson (2013), we use natural log of the maximum value between 1 and Aid for Trade$_{dr(t-1)}$(AfT)[21]. Here $\mathbf{AfT_{dr(t-1)}}$ is the Aid committed by the US (donor/d) to a recipient country (recipient/r) in the previous year (t-1). This variable measures the 2017 constant USD amount of Aid committed[22] by the US in the

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[19]We exclude Safeguard cases (restrict imports of a product temporarily) because safeguards do not have a single target country (Refer Contingent Protection - Safeguards)

[20]In our sample pertaining to the US, the mean of difference between $\mathbf{Cases_{drt}}$ (initiated) and $\mathbf{Measures_{drt}}$ is 0.04 which is fairly low.

[21]One commonly employed method to tackle the issue of small or zero values is to use natural log of (1 + Aid for Trade value). However, this approach overlooks the fact that '1+' is not an immaterial adjustment when aid is zero (or close to it). Therefore, we use $ln(max\{1, AfT_{dr(t-1)}\}$

[22]For the purpose of this study, we consider the committed amounts in line with the methodology adopted by Berthélemy (2006) and Hansen and Tarp (2000) who use commitments rather than disbursements because commitments better reflect donor's decisions. Disbursements depend on recipient characteristics like willingness and administrative capacity to receive the aid which dilutes the significance of donor decisions and is therefore not considered appropriate for this study.

Development Assistance Committee (DAC) Sector codes between 200 and 332 (inclusive)[23]. Given that AfT commitments are reported for very few countries until year 2000, we run the estimations for post-2000 period only. Thus the period of our estimations is 2001-2018.

It is possible that in many cases, we may not have any AfT flows from the US to recipients and therefore we include a no-Aid for Trade dummy **$NAD_{dr(t-1)}$** which takes the value 1 when $AfT_{dr(t-1)}$ is Zero and 0 otherwise. In this fashion, β_1 measures the elasticity of the protection measure where $AfT_{dr(t-1)}$ is positive and β_2 acts as an adjustment to the constant for cases when $AfT_{dr(t-1)}$ is Zero. This means, number of cases when $AfT_{dr(t-1)}$ is positive exceeds the number of cases when $AfT_{dr(t-1)}$ is zero by $(\beta_1 \times \ln AfT_{dr(t-1)} - \beta_2)$.

Other indicators that are determinants of contingent protection activity are **GDP per Capita$_{r(t-1)}$** of the recipient[24], **Imports $_{dr(t-1)}$** between the US and the aid recipient country, **Real Exchange Rate$_{dr(t-1)}$**, **Retaliation$_{rd(t-1)}$** (contingent protection cases filed by the recipient country against the US (donor) in the previous year), presence of **RTA$_{dr(t-1)}$** (Regional Trade Agreement) between the US (donor) and the recipient country and **New Donor$_{r(t-1)}$** (whether the recipient country falls in the category of new donors[25]). The logic behind the choice of these variables and the related references in literature are provided further.

Feinberg (2011) was one of the first researchers to stimulate discussion on contingent protection (particularly Anti-dumping) as a 'development issue'. He raised an important question on whether there existed a relationship between typical development challenges like GDP per capita, GDP growth, income inequality and becoming targets of contingent protection measures. **GDP per Capita$_{r(t-1)}$** allows us to control for wealth of the recipient country and observe the correlation between targeted contingent protection activity by the US. Does the US *spare* a country with lower GDP per capita or targets it more intensely because the

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[23]The broad categories under this head are Transport and Storage (210), Communications (220), Energy (230), Banking and Financial Services (240), Business and other services (250), Agriculture, Forestry and Fishing (310), Industry, Mining and Construction (320), Trade Policies and Regulations (330), and Tourism (332).

[24]We use the control of GDP per capita instead of GDP growth rate as the previous two chapters. GDP per capita is considered a better control for aid related studies since it captures donor considerations when committing aid. A country which has a high GDP growth rate may still be receiving higher amounts of aid due to low GDP per capita. This is evident in the case of several Asian and African developing economies which have shown high GDP growth rates in past years, however, the GDP per capita growth rate is either stagnant or sometimes negative. The use of the control of GDP per capita is also consistent with foreign aid literature (Alesina and Dollar, 2000; Berthélemy, 2006; Lundsgaarde et al., 2010).

[25]Brazil, Chile, China, Colombia, India, Gulf Cooperation Council (GCC) members, Russia, South Africa, Thailand and Turkey (Gulrajani and Swiss, 2018)

country would not have the institutional or legal means to challenge such a measure? We are agnostic about the signs of the coefficients of the GDP per capita variable and rely on empirical results to make an inference.

With regard to the link between **Real Exchange Rate$_{dr(t-1)}$** and need for protection, research has mixed results. While some studies have shown a positive correlation between the two (Irwin, 2005; Knetter and Prusa, 2003; Stallings, 1993) due to the rising imports as domestic currency appreciates, others have shown an inverse relationship observed between contingent protection case filings and the real external value of the US dollar which is attributed to the rent-seeking activities of lawyers and economists representing petitioners. Using data pertaining to US anti-dumping filings against Brazil, Mexico, Japan and Korea, for 24 quarters between 1982 and 1987, Feinberg (1989) finds that a depreciation of the US dollar (i.e. higher bilateral exchange rate) against the foreign currency leads to significantly higher incidences of anti-dumping, specially against Japan. The explanation of this phenomenon is attributed to the lowering of foreign firm's export prices to the US leading to higher chances of determination of material injury and therefore higher proclivity of filing anti-dumping petitions. In our expectation, with the US's strong domestic industry lobbies and high trade deficit[26], we believe that the first explanation is in line with the contextual premise and hence we can expect a positive sign on the coefficient for Real Exchange Rate.

Feinberg and Reynolds (2006, 2018) 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. In a future study Prusa and Skeath (2004) find that Anti-dumping users are likely to target other users of Anti-dumping than those without such an enforcement, and that countries are more likely to petition against those countries who have, in the past, petitioned against them. We also expect a positive and significant coefficient on the variable of **Retaliation$_{rd(t-1)}$** in our analysis.

A variable that fits within the interest of donor-recipient relationship in terms of determining the extent of protectionist activity is **RTA$_{dr(t-1)}$** (Regional Trade Agreement)[27]. The presence of a RTA can have dualistic effect on the propensity to initiate contingent protection activity by a country[28]. RTAs can intensify product-market competition in the markets of member

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[26]See Appendix C Figure C.4 for a graphic on USA's trade deficit

[27]Data available on https://rtais.wto.org

[28]As a torchbearer in formalising the elimination of anti-dumping and countervailing duty measures between member states, the EU, with common competition rules and a common competition authority to enforce

countries thereby leading to a lowering of product prices and consequently altering dumping margins of the product. A member country may be promoted or prevented from using contingent protection depending on the extent of the government's motivation to protect domestic industry as well as the costs of implementing these measures. In other words, the RTA leads to a growth in imports between the member nations. However, in the absence or ambiguity of a provision related to anti-dumping or countervailing duty, an RTA can in reality lead to an increase in the contingent protection cases against the other member[29], specially if the initiator government is driven by populist intentions of protecting domestic industry (Dukgeun et al., 2016). In the case of the US[30], we observe that out of 14 RTAs (covering 19 countries), 6 are with NATO or major non-NATO allies, 7 RTAs are with countries in North and South America (close neighbours), 3 RTAs with oil-rich countries and 3 RTAs with South American nations-emphasising the strategic importance of these agreements for the US. In the case of US, existence of an RTA could lead to an import surge from the RTA partner and since almost all RTAs that the US has signed do not include a special provision for protectionist measures, we have reason to believe that the RTAs will have a positive effect on propensity to initiate protection.

Finally, we include a dummy variable for **New Donor$_{r(t-1)}$** which takes a value of 1 if the recipient country is also an aid giver itself, zero otherwise. Gulrajani and Swiss (2018) identify a marked difference in the styles and modalities of new and traditional donors where new donors seem to exhibit more non-interference and less conditionality. They also note that while the presence of new donors leads to increased financing options, they may also pose existential challenges to the bargaining power and established modalities of the traditional donors. Dreher et al. (2011) observe that one may suspect new donors may better understand the need of recipients and also provide more targeted aid, however, in terms of self-interest, new donors are no more altruistic than traditional donors. New donors have often been blamed for commercial and political selfishness with a quest for energy security, enlarged

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these rules, has acted as the best example of regional integration. Nevertheless, in regional trade agreements with third countries, the EU maintains the right to use anti-dumping measures, despite provisions on competition being included in most agreements (Kasteng and Prawitz, 2013)

[29]Rey (2012) concludes based on an analysis of 192 RTAs that most regional anti-dumping regimes do not fundamentally change the Parties' rights to take anti-dumping measures, as compared with the multilateral regime.

[30]In 2019, the US has 14 active Regional Trade Agreements (RTA) in place with Dominican Republic-Central America (CAFTA), South Korea, Canada and Mexico (NAFTA), Australia, Bahrain, Chile, Colombia, Israel, Jordan, Morocco, Oman, Panama, Peru and Singapore. Of these, only NAFTA stipulates specific provisions of dispute resolution within the agreement. For all the other RTAs, either no specific provisions exist (3 RTAs with Jordan, Bahrain and Oman) or parties retain their rights and obligations under the WTO Agreement, including non-tariff measures like Anti-dumping duties (remaining 10 RTAs) (Source: Author's perusal of the factual presentations under each RTA involving the US, published by WTO (2019c).

trading opportunities and new economic partnerships being the main motives behind aid from new donors (Woods, 2008). We posit that the possibility of pronounced economic and trading relations between new donors and recipients may pose a threat for the US and may lead to a precipitation of contingent protection activities by the US against the recipient (new donor).

For ease of reading and interpretation, we categorise the variables as:

- **AfT related variables** ($\text{AfT}_{\text{dr(t-1)}}$, $\text{NAD}_{\text{dr(t-1)}}$)
- **Macroeconomic controls** (GDP per $\text{Capita}_{\text{r(t-1)}}$, $\text{Imports}_{\text{dr(t-1)}}$, Real Exchange $\text{Rate}_{\text{dr(t-1)}}$)
- **Strategy control variables** ($\text{RTA}_{\text{dr(t-1)}}$, $\text{Retaliation}_{\text{rd(t-1)}}$, New $\text{Donor}_{\text{r(t-1)}}$)

Panel data are often plagued with serial correlation problems. Also, since budget decisions are sticky, we have reason to believe that previous aid disbursements will have influence on current protectionist action. We respond to this issue by including lagged independent variables and covariates. For the estimation technique, since our response variable is of *count* type, the iterative **poisson pseudo-maximum likelihood** (PPML) estimation procedure is considered since it facilitates the inclusion of numerous fixed effects for large data sets and also allows for correlated errors across countries and time (Silva and Tenreyro, 2006, 2011).

3.3.3   Descriptive Statistics

The summary statistics for variables used in baseline estimation (Equation 3.1) are provided in Table 3.1.

As recorded before, **Cases$_{\text{drt}}$** (initiated) is a count variable which is the arithmetic sum of Anti-dumping and countervailing duty cases. In the sub-sample pertaining to US as the donor, the positive values of Cases$_{\text{drt}}$ are 6% of the observations. For Cases$_{\text{drt}}$, values greater than 10 are observed in the US-China country pair for years 2007, 2009, 2016 and 2018. The next top targets for the US are India, Mexico, Turkey and Brazil.

To better visualise the pattern of our data, a distribution of **Cases$_{\text{drt}}$** is provided in Figure 3.5. In Figure 3.6 is provided a correlation plot of **Cases$_{\text{drt}}$** and **Measures$_{\text{drt}}$** against AfT and Total ODA (net of AfT) for the US in the period 2001 to 2018.

Table 3.1: Summary Statistics for the main variables, USA sub-sample

Variables	Obs	Mean	Std. Dev.	Min	Max	Source
Contingent Protection Variable						
Cases_{drt} (initiated)	1,908	0.150	0.893	0	14	WTO (2019e)
Measures_{drt}	1,908	0.107	0.712	0	12	
AfT Variables						
$\text{AfT}^{\dagger}_{dr(t-1)}$	1,908	21.35	86.63	0	1,335	OECD (2019f)
$\text{NAD}_{dr(t-1)}$	1,908	0.458	0.498	0	1	
Macroeconomic Controls						
GDP per Capita$^{\ddagger}_{r(t-1)}$	1,886	3,348	3,126	214.1	16,821	World Bank (2019a)
$\text{Imports}^{\dagger}_{dr(t-1)}$	1,843	8,218	41,196	0.00562	505,597	DOTS, IMF (2019)
Real Exchange Rate$_{dr(t-1)}$	1,616	853.8	2,748	0.342	23,439	OECD (2019c,d)
Strategy Controls						
$\text{Retaliation}_{rd(t-1)}$	1,908	0.0818	0.479	0	6	WTO (2019e)
$\text{RTA}_{dr(t-1)}$	1,908	0.0713	0.257	0	1	WTO (2019c)
New Donor$_{r(t-1)}$	1,908	0.0660	0.248	0	1	Gulrajani and Swiss
Instruments used in 2 stage regressions						
Liberties Index$_{r(t-1)}$	1,847	7.475	3.133	2	14	Freedom House (2018)
$\text{Affinity}_{rd(t-1)}$ (with US)	1,895	-0.992	0.116	-1	1	Bailey et al. (2017)

† USD million (constant 2017) value. ‡ USD, constant 2011
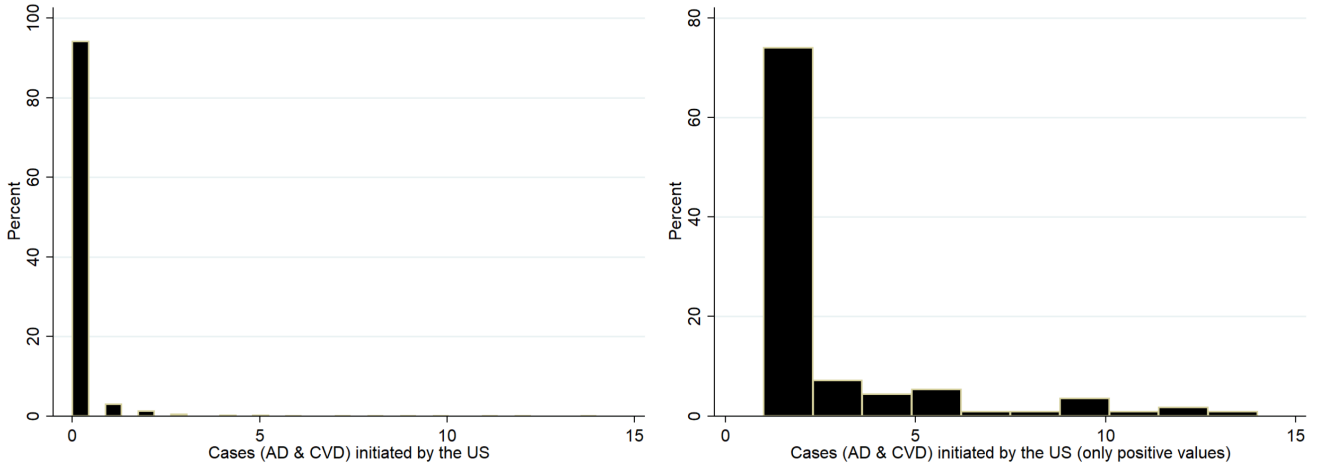
Figure 3.5: Distribution of dependent variable
Source: Author's calculation from WTO (2019e) data

3.4 Results

3.4.1 Contingent Protection and AfT

Table 3.2 presents the results, which exhibit that AfT facilitation by the US has a substantial positive impact on the contingent protection activity by the US against the recipient country. In Poisson regression models, the interpretation of the estimated coefficients is similar to the one in the standard log-linear model (Winkelmann, 2008). The coefficient in column 1
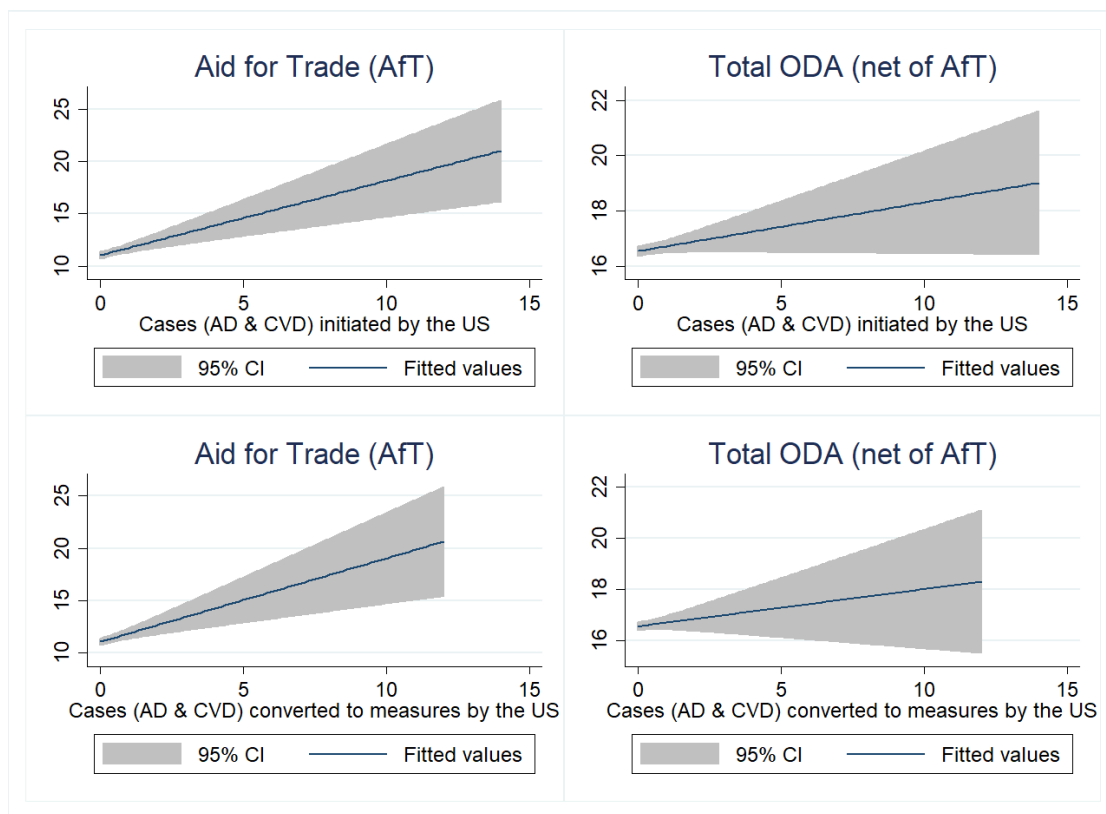
X axes represent counts of cases and Y axes represent natural log of Aid values

Figure 3.6: Distribution of Cases initiated and Measures implemented vs. AfT and Total ODA (net of AfT)

Source: Author's calculation from WTO (2019e) and OECD (2019f) data

suggests that 10% increase in AfT from the US to the exporter leads to an increase in the expected counts of contingent protection cases by 1.78. In Column 3 are shown the results after including all the controls which are conventional determinants of contingent protection case activity.

It is important to read the coefficient of the $\mathrm{NAD}_{\mathrm{dr(t-1)}}$ in tandem with the $\mathrm{AfT}_{\mathrm{dr(t-1)}}$ coefficient. Looking at Column 3 of Table 3.2, the number of contingent protection cases when AfT is positive differs from the number of cases when the AfT is zero by $\{(0.215 \times \ln \mathrm{AfT}_{\mathrm{dr(t-1)}})$ - 2.884$\}$. To explain this with an example, let us consider the median $\ln \mathrm{AfT}_{\mathrm{dr(t-1)}}$ value of 14.26 (corresponding to median AfT value of USD 1.56 mln). The expected counts of protection cases against a recipient country when compared to a non-recipient would be higher by (0.215×14.26) - 2.884 = 3.06 - 2.884 = 0.18 cases.

There is marked consensus amongst researchers on the positive link between imports and contingent protection activity (Blonigen and Prusa, 2001; Lindsey and Ikenson, 2001; Prusa,

Table 3.2: The impact of US Aid for Trade (AfT) on contingent protection case initiations against recipients, 2001-2018

	Poisson pseudo-maximum likelihood estimation			Neg. Binomial
	(1)	(2)	(3)	(4)
$\text{AfT}_{dr(t-1)}$	0.178**	0.175**	0.215**	0.196**
	(0.0886)	(0.0844)	(0.0889)	(0.0883)
$\text{NAD}_{dr(t-1)}$	2.022	2.358*	2.884**	2.626*
	(1.328)	(1.235)	(1.293)	(1.399)
ln GDP per Capita$_{r(t-1)}$		-0.0138	0.139	-0.0952
		(0.381)	(0.361)	(0.287)
ln Imports $_{dr(t-1)}$		0.812***	0.471**	0.768***
		(0.179)	(0.199)	(0.136)
ln Real Exchange Rate $_{dr(t-1)}$		0.703	0.975**	0.0225
		(0.473)	(0.484)	(0.106)
Retaliation$_{rd(t-1)}$			-0.0461	-0.439
			(0.0346)	(0.736)
$\text{RTA}_{dr(t-1)}$			16.47***	1.711***
			(1.064)	(0.599)
New Donor$_{r(t-1)}$			18.98***	-0.0416
			(2.095)	(0.0590)
Constant	-21.20***	-22.21***	-34.69***	2.015***
	(1.949)	(4.689)	(4.752)	(0.644)
Observations	1,908	1,551	1,551	1,551
Recipient countries	106	106	106	106
$R^{2\dagger}$	0.828	0.844	0.848	0.045

Dependent Variable - Number of contingent protection $\textbf{\textit{Cases}}_{drt}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. PPML regressions include recipient fixed effects and year dummies. † In case of the negative binomial model, this is pseudo R^2 and only year dummies included to ensure convergence.

2001, 2005; Tharakan and Waelbroeck, 1994; Zanardi, 2004). Staying with column 3 in Table 3.2 we see that the results also support the hypothesis that increased imports from the recipient (exporter) are seen as a threat to domestic industry and hence lead to a surge in contingent protection activity. We also see a positive and significant coefficient on bilateral real exchange rate signifying that imports from trade partners become cheaper resulting in a surge in protection activities.

Coming to the strategic determinants of $\text{RTA}_{dr(t-1)}$ and New Donor$_{r(t-1)}$, recall that these are dummy variables. Pfaffermayr (2019) suggest that PPML while beneficial to achieve convergence in case of large data sets with fixed effects, is of limited use for calculating the standard errors and confidence intervals of the estimated slope parameters of dummies. It seems we also encounter this issue for $\text{RTA}_{dr(t-1)}$ and New Donor$_{r(t-1)}$ where the estimated

coefficients are very large values with high standard errors. To check the robustness of our main results, we employ Negative Binomial estimation technique, with only year dummies (since with recipient fixed effects, the models do not converge in statistical software packages like Stata or R). We can see from Column 4 of Table 3.2 that coefficients of main dependent variables remain fairly consistent in sign and significance. There is however, a correction to the estimates of dummy variable's used as controls i.e. $RTA_{dr(t-1)}$ and New $Donor_{r(t-1)}$. As explained in preceding section, the presence of a regional trade agreement could go both ways. It could lead to an increase in imports consequently resulting in more protection or, on the other hand, could lead to better economic relations between the countries, leading to reduced possibility of contingent protection. In the case of the US the positive effect of RTA on protectionist cases seems to be driven through the increased imports channel.

3.4.2 Instrumental Variable (IV) analysis

This chapter does not reject the possibility of potential endogeneity of aid and protection when estimating the specification in Equation 3.1. First, it is a possibility that due to the voluntary nature of aid reporting, the data may be inflicted with errors in measurement. This type of error can creep in because of mis-classification of projects or erroneous reporting by the respective donors. This could lead to inefficient coefficients. Also, the specification may suffer to some extent from bias related to omitted variables of cross-country regressions. This could be due to unobservable time varying differences across countries (e.g., country-specific shocks to productivity or quality of institutions).

We employ the instrumental variable approach in order to control for the aforesaid possible issues.

Recent work in development economics has highlighted how factors at the recipient level can condition aid effectiveness (Davies and Klasen, 2019; Lundsgaarde et al., 2010). Therefore, the first instrument we use is **Liberties Index$_{r(t-1)}$**[31]. This instrument is so coded that higher values mean less political freedom[32]. We believe that the Liberties Index$_{r(t-1)}$ variable satisfies the exclusion restriction since it is not related to the propensity of a country to

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[31]The Liberties Index$_{r(t-1)}$ is the sum of the *political* liberty and *civil* liberty scores from the Freedom House (2018). Political and civil liberty index are each measured on a one-to-seven scale, with one representing the highest degree of freedom and seven the lowest (Davies and Klasen, 2019).

[32]According to the Freedom in the World 2018 report published by Freedom House (2018) 88 countries (45% of the 195 countries in the world accounting for 40% of the world's population) are designated free. Countries regarded as Partly Free are 58 (30%) with 24% world population and 49 countries (25%) countries are deemed not free (2.7 billion residents or 37% of global population).

initiate contingent protection case against an exporter. Like Cali and Te Velde (2011) we also argue that respect of political and civil liberties could be related with a countries political institutions, but a link with the economic institutions remains elusive. Also, like Cali and Te Velde (2011), countries like Myanmar and North Korea are not in our sample. This becomes important to state because the United States has started including respect for human rights as one of the condition precedent before signing Free Trade Agreements (FTA). Hence, any possibility of a link between a country's respect for political and civil liberties (together noted as Liberties Index$_{r(t-1)}$) and signing of FTAs - that could invalidate our exclusion restriction- can be dismissed.

The second instrument used in this analysis is **Affinity$_{rd(t-1)}$** (with US). Our hypothesis is that the aid received is contingent on the political objectives of donors. Therefore, the political affinity of each country with the United States can serve as a proxy for the political interests of the United States and its allies. We calculate the *affinity of nations* based on United Nations General Assembly (UNGA) Voting Data available from Bailey et al. (2017)[33]. The affinity variable can be considered orthogonal to the contingent protection case initiation by the US therefore reasonably fulfilling the exclusion restriction.

The foregoing theoretical claims about the effect of the selected instruments on the aid variables are sustained by the first stage regressions which also include other control variables. In Table 3.3 are presented the results (first stage regressions) by using the instruments sequentially (column 1, 2) and finally together (column 3). The signs of Liberties Index$_{r(t-1)}$ and Affinity$_{rd(t-1)}$ (with US)[34] are in conjunction with our expectation and the coefficients also achieve conventional levels of statistical significance. The US aid to recipient countries is positively correlated with respect of human rights, i.e. political and civil liberty in a country. Lower scores of Liberties Index$_{r(t-1)}$ are associated with higher freedom and therefore we conclude that as the Liberties Index$_{r(t-1)}$ score goes down (which means political and civil liberties increase), the aid from US increases.

Apodaca (2017) argues that both the granting and the denial of foreign assistance can be a

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[33]Values for the Affinity data can range from -1 (least similar interests) to $+1$ (most similar interests). The Affinity data are coded with the 'S' indicator ('S' is calculated as $1 - 2x$ (d/d$_{max}$), where d is the sum of metric distances between votes by country pairs in a given year and d$_{max}$ is the largest possible metric distance for those votes (Signorino and Ritter, 1999)) from 2 category UNGA vote data (1 = "yes" or approval for an issue; 2 = "no" or disapproval for an issue.), coded as follows: Code for Votes 1 for "Yes", 2 for "Abstain", 3 for "No", 8 for "Absent (country cast no vote and no evidence of non-participation)", 9 for "Non-member"

[34]The potentially contemporaneous effect of Aid and Affinity is treated by lagging the Affinity variable

Table 3.3: Explaining the Aid for Trade (AfT) variable, first stage Ordinary Least Squared (OLS) regressions, 2001-2018

	(1)	(2)	(3)
Liberties Index$_{r(t-1)}$	-0.180***		-0.172***
	(0.0254)		(0.0260)
Affinity$_{rd(t-1)}$ (with US)		1.001*	1.115*
		(0.845)	(0.839)
Other Controls	Y	Y	Y
Constant	6.723***	5.296***	7.651***
	(1.743)	(1.982)	(1.999)
Observations	1,516	1,542	1,507
R^2	0.129	0.097	0.123
Adjusted R^2	0.07	0.03	0.06
F-stat	29.95	22.09	24.65

Dependent Variable - $\ln(\max\{1,\text{AfT}\})$. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All regressions include recipient fixed effects and year dummies.

valuable mechanism designed to modify a recipient state's behaviour. Traditional donors[35], including the US, have used foreign aid as a foreign policy tool to further their geopolitical motives and business interests in the recipient economies. In this vein, the positive coefficient of Affinity$_{rd(t-1)}$ corroborates the rational that the US rewards recipient countries that exhibit alignment with the UN voting behaviour of the US.

We present results of effect of AfT on contingent protection with the Instrumental Variable methodology, i.e. second stage IV analysis, in the next section in Table 3.4. Turning to the issue of endogeneity, we instrument AfT$_{dr(t-1)}$ with the two instruments Liberties Index$_{r(t-1)}$ and Affinity$_{rd(t-1)}$ (with US). Results of the IV analysis are presented in Table 3.4. The coefficient of AfT$_{dr(t-1)}$ is robust to the endogeneity of aid and IV estimations suggest that the endogeneity biases the coefficient downwards. The large increase in coefficient magnitude - IV coefficient (0.641) is three times larger than the baseline result (0.215 in Table 3.2 Column 3 - suggests that endogeneity exists and could be attributable to the omitted variable and missing values as explained before. The Hansen J-statistic does not allow us to reject the null hypothesis that the instruments are valid (in other words, uncorrelated with the error term) and excluded correctly from the equation that is estimated. Despite the results from the Hansen test, it is still possible that the instruments (Liberties Index$_{r(t-1)}$ and Affinity$_{rd(t-1)}$ (with US)) used in this study are not entirely exogenous as they may impact contingent

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[35]the US, Western Europe, Japan, Soviet Union (specially during Cold War), Australia, New Zealand (Apodaca, 2017)

protection through discrete channels of trade. Therefore, we stipulate that the results of IV analysis should be taken cautiously when interpreting the relationship between surge in AfT and protection cases.

Table 3.4: The impact of Aid for Trade (AfT) on contingent protection case initiations, Instrumental Variable (IV) analysis, 2001-2018

	FE IV
$\text{AfT}_{dr(t-1)}$	0.641**
	(0.277)
$\text{NAD}_{dr(t-1)}$	1.083**
	(0.472)
ln GDP per Capita$_{r(t-1)}$	1.640*
	(0.961)
ln Imports $_{dr(t-1)}$	0.362*
	(0.208)
ln Real Exchange Rate$_{dr(t-1)}$	1.308**
	(0.662)
Retaliation$_{rd(t-1)}$	-0.0400
	(0.0395)
$\text{RTA}_{dr(t-1)}$	16.58***
	(1.056)
New Donor$_{r(t-1)}$	17.48***
	(2.288)
Constant	-40.99***
	(8.481)
Observations	1,551
Pseudo R^2	0.864
Excluded Instruments	Liberties Index$_{r(t-1)}$
	Affinity$_{rd(t-1)}$ (with US)
Hansen J-test statistic	3.347
J-stat p value	0.1875
J-stat d.f.	1

Dependent Variable - Number of contingent protection $\textbf{Cases}_{drt}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include recipient fixed effects and year dummies. We have two instruments for one potentially endogenous variable, so the J statistic has one degree of freedom.

3.5 Disaggregating Aid for Trade

3.5.1 Methodology

Pettersson and Johansson (2013) make an attempt to assess the influence of sector supported

aid on a recipient country's exports in line with the ambitions of the 2005 Declaration of WTO at Hong Kong. They suggest that it is hard to pin a singular definition to AfT suggesting that any support from donor nations that loosens the supply-side constraints of a country would have positive effect on recipient country exports. As mentioned before, in this study, the intention is to assess whether AfT, which could be focused on improving (1) trade policy, (2) trade related Infrastructure & (3) productive capacity, also coincides with increased (or decreased) market access from the donor to the recipient. This raises the question about the medium through which increased (or decreased) market access can flow from the donor to the recipient. To better understand this, AfT is divided into two heads according to the codes provided by OECD (2019b). These are Economic Infrastructure & Services (Sector Code 200) and Production Sectors (Sector Code 300)[36]. The values for each category are the result of the aggregation of several projects and programmes. Therefore, the estimation equation 3.1 evolves to the following for the disaggregate analysis:

$$
\begin{aligned}
Cases_{drt} = &exp(\beta_0 + \beta_1 ln(max\{1, AfT200_{dr(t-1)}\}) + \beta_2 NAD200_{dr(t-1)} + \\
&\beta_3 ln(max\{1, AfT300_{dr(t-1)}\}) + \beta_4 NAD300_{dr(t-1)} + \\
&B \times G_{dr(t-1)} + C \times F_{d/r(t-1)} + \gamma_r + \lambda_t)\epsilon_{drt}
\end{aligned}
\tag{3.2}
$$

where **AfT200$_{dr(t-1)}$** and **AfT300$_{dr(t-1)}$** are the aid flows under the head of Economic Infrastructure & Services and Production Sectors respectively. Similar to the specification in Equation 3.1, there is a possibility of cases where no aid flow exists in the Sector 200 and 300. To control for these zeroes, **NAD200$_{dr(t-1)}$** and **NAD300$_{dr(t-1)}$** are dummies which take values 1 when the corresponding AfT numbers are zero, i.e. no aid is reported in the Economic Infrastructure & Services or Production Sector category respectively. Here **G** is the vector of dyadic variables like imports, bilateral real exchange rate, RTA and retaliation. **F** is the vector of recipient specific variables like GDP per capita and New Donor.

Summary statistics for the dis-aggregated study are presented in Table 3.5.

3.5.2 Results: Contingent Protection and dis-aggregated AfT

Given the correlations between contingent protection and AfT$_{dr(t-1)}$ in the previous section, an interpretation that donors curtail market access to recipients after AfT flow needs further investigation. Not all aid could lead to a surge in protectionist activity by the donor country. This could be true not only for ODA like humanitarian aid or military support but also within the AfT boundaries. Therefore, in order to investigate the medium through which

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[36]For a synopsis on the constituents of these sectors refer Appendix C Table C.1

Table 3.5: Summary Statistics for the main variables, USA sub-sample, dis-aggregate analysis

Variables	Obs	Mean	Std. Dev.	Min	Max	Source
Contingent Protection Controls						
Cases $_{drt}$ (initiated)	1,908	0.150	0.893	0	14	WTO (2019e)
Measures$_{drt}$	1,908	0.107	0.712	0	12	
AfT Variables						
AfT200$_{dr(t-1)}$[†]	1,908	12.70	63.71	0	1,018	
NAD200$_{dr(t-1)}$	1,908	0.357	0.479	0	1	
AfT300$_{dr(t-1)}$[†]	1,908	8.647	30.52	0	434.5	
NAD300$_{dr(t-1)}$	1,908	0.344	0.475	0	1	
Total Aid$_{dr(t-1)}$[†★]	1,908	100.1	203.8	0	2,382	OECD (2019f)
NADTotalAid$_{dr(t-1)}$	1,908	0.0330	0.179	0	1	
Macroeconomic Controls						
GDP per Capita[‡]$_{r(t-1)}$	1,886	3,348	3,126	214.1	16,821	World Bank (2019a)
Imports[†]$_{dr(t-1)}$	1,843	8,218	41,196	0.00562	505,597	DOTS, IMF (2019)
Real Exchange Rate$_{dr(t-1)}$	1,616	853.8	2,748	0.342	23,439	OECD (2019c,d)
Strategy Controls						
Retaliation$_{rd(t-1)}$	1,908	0.0818	0.479	0	6	WTO (2019e)
RTA$_{dr(t-1)}$	1,908	0.0713	0.257	0	1	WTO (2019c)
New Donor$_{r(t-1)}$	1,908	0.0660	0.248	0	1	Gulrajani and Swiss

[†] USD million (constant 2017) value. [‡] USD, constant 2011. [★] Total aid net of AfT value.

the protectionist trade policy flows, AfT is divided in terms of two categories as specified by the OECD (2019b). As a final check are also included total Official Development Assistance (ODA) net of AfT (**Total Aid$_{dr(t-1)}$**). The results of the aforementioned analysis are presented in Table 3.6 in terms of the medium through which this protectionist trade policy is active.

In the first column, the baseline case (Table 3.2 Column 3) is presented for ease of reference. In columns 2-4, we add sectoral AfT in steps beginning with AfT for Economic Infrastructure & Services (**AfT200$_{dr(t-1)}$**) followed by AfT for Production Sectors (**AfT300$_{dr(t-1)}$**) and finally both categories of AfT together. It is observed that AfT for Economic Infrastructure & Services (Sector 200) is the single largest driver of surge in contingent protection. The estimated elasticity of AfT200$_{dr(t-1)}$ (0.180 in Column 4) is not very different from the estimate for AfT$_{dr(t-1)}$ (0.215 in Column 1 of Table 3.6). Recall that NAD200$_{dr(t-1)}$ is no-aid dummy specific to Economic Infrastructure & Services. Hence the expected counts of donor **Cases$_{drt}$** (initiated) against aid recipients will be larger than those to non-aid recipients when $0.180\times$ ln AfT200$_{dr(t-1)}$) > 2.677 (Refer Column 4 of Table 3.6). We can interpret this result in the following way : the impact of aid for economic infrastructure and services on positive export performance results into higher protectionist measures against the recipient by the donor. A

Table 3.6: The impact of disaggregated AfT on contingent protection case initiations, Poisson pseudo-maximum likelihood estimation, 2001-2018

	AfT (1)	AfT (Infra.) (2)	AfT (Prod.) (3)	AfT (Infra.+Prod.) (4)	AfT + other ODA (5)
$AfT_{dr(t-1)}$	0.215**				
	(0.0889)				
$NAD_{dr(t-1)}$	2.884**				
	(1.293)				
$AfT200_{dr(t-1)}$		0.185**		0.180**	0.212**
		(0.0781)		(0.0858)	(0.0835)
$NAD200_{dr(t-1)}$		2.470**		2.677**	2.906***
		(1.097)		(1.097)	(1.058)
$AfT300_{dr(t-1)}$			0.0586	0.0587	0.0672
			(0.0571)	(0.0486)	(0.0496)
$NAD300_{dr(t-1)}$			0.412	0.443	0.494
			(0.623)	(0.485)	(0.495)
Total $Aid_{dr(t-1)}$					-0.0110
					(0.0884)
$NADTotalAid_{dr(t-1)}$					1.784
					(1.501)
ln GDP per $Capita_{r(t-1)}$	0.139	0.146	0.304	0.178	0.0496
	(0.361)	(0.346)	(0.344)	(0.360)	(0.431)
ln Imports $_{dr(t-1)}$	0.471**	0.452**	0.468**	0.454**	0.399**
	(0.199)	(0.202)	(0.196)	(0.200)	(0.179)
ln Real Exchange $Rate_{dr(t-1)}$	0.975**	1.018**	1.020*	1.092**	1.081
	(0.484)	(0.483)	(0.531)	(0.524)	(0.683)
$RTA_{dr(t-1)}$	16.47***	16.53***	16.57***	16.49***	16.42***
	(1.064)	(1.060)	(1.059)	(1.063)	(1.060)
$Retaliation_{rd(t-1)}$	-0.0461	-0.0389	-0.0354	-0.0500	-0.0541
	(0.0346)	(0.0331)	(0.0373)	(0.0349)	(0.0345)
New $Donor_{r(t-1)}$	18.98***	19.05***	18.05***	19.39***	20.31***
	(2.095)	(1.994)	(2.107)	(2.093)	(2.100)
Constant	-34.69***	-33.97***	-32.56***	-35.44***	-34.23***
	(4.752)	(4.689)	(4.841)	(5.058)	(5.128)
Observations	1,551	1,551	1,551	1,551	1,551
R^2	0.848	0.842	0.842	0.845	0.847

Dependent Variable - Number of contingent protection $Cases_{drt}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include recipient fixed effects and year dummies

plausible conclusion from this result that is in line with our original hypothesis is that the US does not increase market access to aid receivers, on the contrary curtails it. This is evidence to the argument that not all aid is *purely altruistic*.

In the last column of Table 3.6[37], **Total Aid$_{dr(t-1)}$** and corresponding **NADTotalAid$_{dr(t-1)}$** dummy is added. This variable can capture the effect of all ODA (except Aid for trade) from the US to recipients. We see absence of any statistically significant correlation between Total Aid$_{dr(t-1)}$ and contingent protection Cases $_{drt}$ (initiated).

3.6 Robustness Checks

3.6.1 Regions and Income of recipients

Pettersson and Johansson (2013) use dis-aggregated data to specifically study AfT and find a positive correlation with only donor exports indicating that some forms of AfT are easier to (informally) tie than other forms of aid. However, they do not find this result uniformly across all regions. To better understand the nature of US AfT and protectionist policy flows, this chapter includes an analysis by dividing the recipient countries into geographical regions. As can be seen from Table 3.7, in the case of East Asia & Pacific Region, the positive correlation between AfT and protection moves through the Production Sectors (Sector 300) and not Economic Infrastructure & Services (Sector 200). On the other hand, we find that the South Asian region exhibits a positive correlation between AfT (Economic Infrastructure & Services as well as AfT for Production Sectors) as well as ODA (net of AfT) and protection cases filed against recipients. We see that in the Latin America & Caribbean region, the only significant aid related variable is NAD200$_{dr(t-1)}$. This indicates that the expected counts of contingent protection cases when AfT (Sector 200) is positive exceed expected counts of contingent protection cases when AfT (Sector 200) is zero by -(-10.6), i.e. +10.6.

In a further sub-division of recipient countries according to income categories, we observe that countries in the Lower middle income category experience a positive link between AfT and market access curtailment through the medium of Economic Infrastructure & Services.

3.6.2 Presidents

In case of the US, recent years have seen intensified protectionist policies with direct oversight and intervention of the President. Most of these measures are targeted towards China,

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[37]As a robustness check, we replicate the results of Table 3.6 using the Inverse Hyperbolic Sine (IHS) transformation which are frequently used because they approximate the natural logarithm of the variable and allow retaining zero-valued observations. The coefficients obtained are presented in Appendix C Table C.4 and while they do not have a causal interpretation, they are useful for comparing with our results in terms of elasticities. Again, from these results, we can observe that AfT for Economic Infrastructure & Services continues to remain positively correlated with contingent protection activity.

Table 3.7: The impact of AfT on contingent protection case initiations, Regions & Income categories of recipients, Poisson pseudo-maximum likelihood estimation, 2001-2018

	AfT + Other ODA	EAP	LAC	SA	Lower Middle	Upper Middle
AfT200$_{dr(t-1)}$	0.212**	-0.0180	0.482	0.484***	0.525*	0.142
	(0.0835)	(0.225)	(0.294)	(0.149)	(0.269)	(0.133)
NAD200$_{dr(t-1)}$	2.906***	0.463	-10.60***		-1.552	1.781
	(1.058)	(2.734)	(3.878)		(5.122)	(1.605)
AfT300$_{dr(t-1)}$	0.0672	0.421***	-0.0576	0.159***	0.121	0.0273
	(0.0496)	(0.121)	(0.172)	(0.0271)	(0.0977)	(0.0737)
NAD300$_{dr(t-1)}$	0.494	4.261***	-0.350		-13.20***	0.0135
	(0.495)	(1.567)	(2.524)		(1.563)	(0.654)
Total Aid$_{dr(t-1)}$	-0.0110	0.0675	-0.160	1.017***	0.231	0.00571
	(0.0884)	(0.215)	(0.710)	(0.324)	(0.588)	(0.109)
NADTotalAid$_{dr(t-1)}$	1.784				31.65***	
	(1.501)				(10.94)	
ln GDP per Capita$_{r(t-1)}$	0.0496	-1.318	3.389	3.739***	-5.671	1.450***
	(0.431)	(1.037)	(10.29)	(0.716)	(4.418)	(0.485)
ln Imports$_{dr(t-1)}$	0.399**	0.368	-3.456***	0.663***	0.265	-1.008**
	(0.179)	(0.305)	(0.739)	(0.162)	(0.574)	(0.444)
ln Real Exchange Rate$_{dr(t-1)}$	1.081	-0.779	2.419**	1.042*	-0.493	1.839***
	(0.683)	(3.990)	(1.107)	(0.624)	(2.180)	(0.546)
RTA$_{dr(t-1)}$	16.42***		16.95***			16.53***
	(1.060)		(2.161)			(1.102)
Retaliation$_{rd(t-1)}$	-0.0541	-0.259**	-0.297***	-0.0422	-0.252***	-0.0531
	(0.0345)	(0.104)	(0.0595)	(0.0257)	(0.0771)	(0.0471)
New Donor$_{r(t-1)}$	20.31***	-2.400		3.293***		21.27***
	(2.100)	(31.21)		(0.554)		(1.403)
Constant	-34.23***	1.221	42.77	-87.81***	20.69	-10.11
	(5.128)	(38.90)	(91.02)	(13.40)	(35.77)	(9.314)
Observations	1551	262	76	314	495	525
R^2	0.847	0.947	0.788	0.802	0.813	0.889

Dependent Variable - Number of contingent protection $Cases_{drt}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include recipient fixed effects and year dummies

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Table 3.8: The impact of US AfT on contingent protection case initiations against recipients, Presidents in power, Poisson pseudo-maximum likelihood estimation, 2001-2018

	Bush (2001-2008)	Obama (2009-2016)	Trump (2017-2018)
$\text{AfT200}_{dr(t-1)}$	0.251**	0.211**	0.499***
	(0.118)	(0.105)	(0.169)
$\text{NAD200}_{dr(t-1)}$	3.466*	2.093	5.152**
	(1.803)	(1.314)	(2.379)
$\text{AfT300}_{dr(t-1)}$	0.00681	-0.118	-0.380***
	(0.0919)	(0.129)	(0.0781)
$\text{NAD300}_{dr(t-1)}$	-0.577	-2.198	-4.222***
	(1.087)	(1.814)	(0.986)
$\text{Total Aid}_{dr(t-1)}$	-0.104	-0.0570	0.267**
	(0.173)	(0.163)	(0.105)
$\text{NADTotalAid}_{dr(t-1)}$	2.215	-	-
	(2.902)		
$\text{ln GDP per Capita}_{r(t-1)}$	-0.266	-0.0138	-0.370**
	(0.194)	(0.304)	(0.161)
$\text{ln Imports }_{dr(t-1)}$	0.723***	0.751***	0.629***
	(0.0667)	(0.137)	(0.0802)
$\text{ln Real Exchange Rate }_{dr(t-1)}$	-0.0985	0.0675	0.189***
	(0.189)	(0.120)	(0.0524)
$\text{RTA}_{dr(t-1)}$	1.169***	-0.743	-0.121
	(0.407)	(0.482)	(0.396)
$\text{Retaliation}_{rd(t-1)}$	-0.127*	0.0445	0.129
	(0.0659)	(0.158)	(0.0830)
$\text{New Donor}_{r(t-1)}$	2.596***	0.947**	2.516***
	(0.485)	(0.398)	(0.354)
Constant	-17.90***	-19.51***	-21.81***
	(4.546)	(3.459)	(3.488)
Observations	676	691	163
R^2	0.907	0.729	0.977

Dependent Variable - Number of contingent protection $Cases_{drt}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include recipient fixed effects and year dummies.

however, other emerging economies like India, Turkey and Mexico have not been untouched by the intensified closing of US market access by renewed protectionist trade policies. In order to investigate the evolution of US trade policy over the time period covered in this study, we present results according to the president in power covering the tenure of President George W. Bush (2001 to 2008), President Barack Obama (2009 to 2016) and President Donald Trump (2017 and 2018).

Results are presented in Table 3.8 and we can see a clear positive and significant correlation between protection and AfT for Economic Infrastructure & Services in the tenure of all presidents mentioned above. During the Bush administration, the no aid dummy $\mathbf{NAD200_{dr(t\text{-}1)}}$ is also statistically significant signalling that expected counts of donor $\mathbf{Cases_{drt}}$ (initiated) against aid recipients are larger than those to non-aid recipients when $0.251\times$ ln $\text{AfT200}_{dr(t\text{-}1)}$ > 3.466. On the other hand, for the Obama years, this is simply $0.211\times$ ln $\text{AfT200}_{dr(t\text{-}1)}$[38]. One speculation for this higher expected count of protectionist cases in the Obama presidency years could be that the Obama presidency began with the global financial crisis, which had its epicentre in the United States. Global trade took a hit in the years subsequent to the financial crisis by almost 22%[39] and it is possible that the incoming government adopted more protectionist policies to boost domestic industry and invigorate domestic jobs.

With regard to the Trump presidency years, we see that the coefficients are almost two times of the Bush years. These results must be taken with a grain of salt since the time period of this sub-sample is only two years as opposed to eight years each of the two sub-samples for the preceding Presidents. It is worth noting that in the Obama as well as Trump presidency years, the coefficient of AfT pertaining to Production sector $(\text{AfT300}_{dr(t\text{-}1)})$ are negative (significant only in the Trump years) indicating that US trade policy is less belligerent towards production sectors that are recipient of AfT.

3.6.3 Aid commitment vs Aid disbursement

Odedokun (2003) exhibits with an annual panel data over 1970-2000 for the 22 members of OECD's DAC donors that the proportion of pledged aid being disbursed, which shows an increasing trend, is positively affected by the extent to which aid is procurement-tied and by the size of the donor government's expenditure in relation to GDP. Using more recent data (2002-2010), Hudson (2013) shows that in contrast to the existing literature, on average almost all commitments tend to be met within two years, with the overwhelming majority met immediately. Cali and Te Velde (2011) point out that aid commitments data have a fairly complete coverage since 1995, however, aid disbursements data is roughly 70% between 1995 and 2002 and complete only that point forward. They base their analysis on disbursements

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[38]We explain this relationship through a simple example. Let's say a recipient country received USD 2 million from the US in both the Bush and Obama case. During the Bush years, the expected counts of protection cases against this country when compared to a country that does not receive AfT would be higher by $0.251\times$ (ln 2,000,000)-3.466= 0.175, while in the Obama years this would be $0.211\times$ (ln 2,000,000)=3.06. Thus in the Obama years, the aid receiving countries have a higher expected count (3.06 vs 0.175) of protection cases against them.

[39]World Trade in 2008 - USD 16.265 trillion and world trade in 2009 - USD 12.636 trillion (World Bank, 2018b)
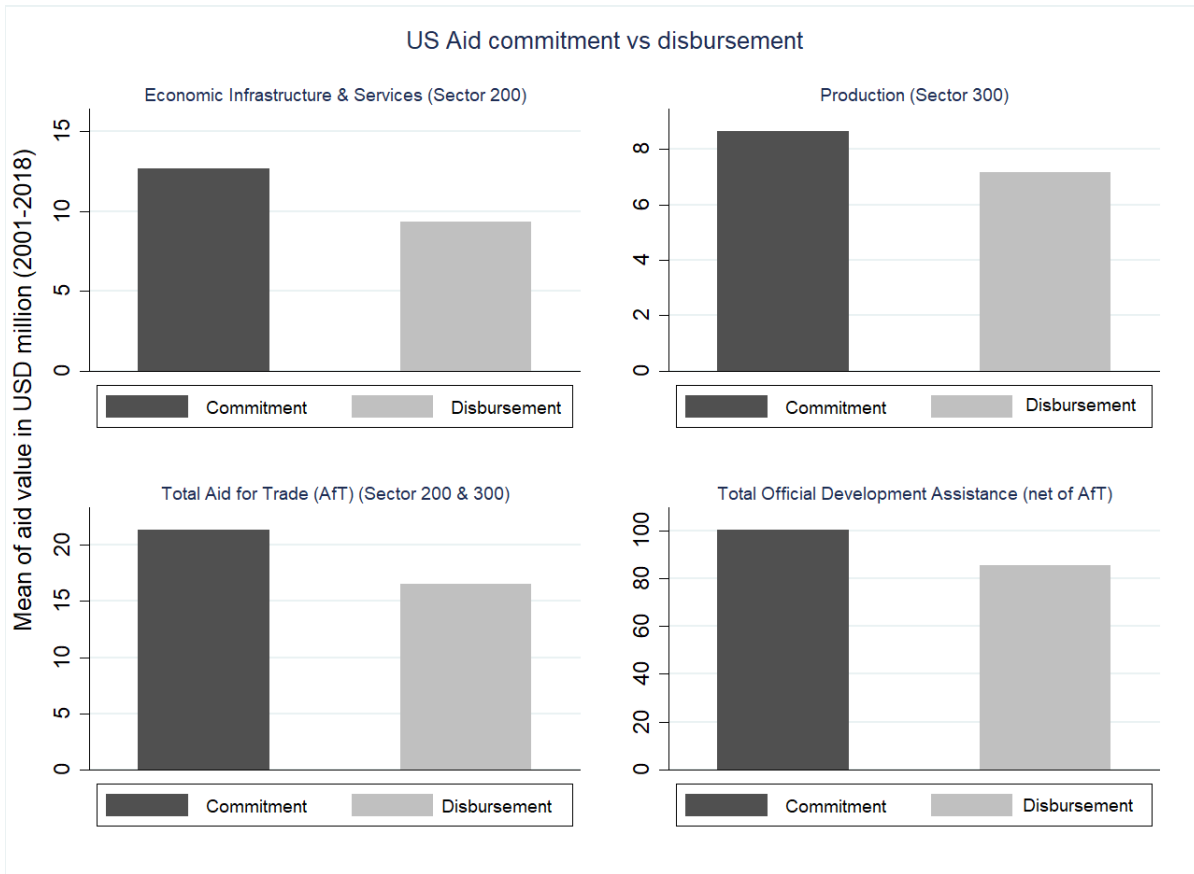
Figure 3.7: US Aid commitments vs disbursements, mean values for 2001 to 2018
Source: Author's calculation from OECD (2019f)

since they investigate whether AfT facilitation reduces the costs of trading. In the case of the US, aid disbursements have increasingly inched closer to aid commitments in recent years. In Figure 3.7 we can see the nature of aid commitments and disbursements over the period of our estimates i.e. 2001 to 2018.

In section 3.4, we explain the choice of commitments rather than disbursements as the independent variable. To reiterate, we consider the committed amounts in line with the methodology adopted by Berthélemy (2006) and Hansen and Tarp (2000) who use commitments rather than disbursements because commitments better reflect donor's decisions while disbursements are linked with recipient characteristics. However, as a robustness check, we carry out the analysis on the propensity of Cases$_{drt}$ (initiated) and implementing Measures$_{drt}$ by estimating equation 3.2 using disbursements amounts instead of committed amounts for all three categories of Aid i.e. Economic Infrastructure & Services, Production Sectors and total Aid (net of AfT). The results are presented in Table 3.9.

Table 3.9: The impact of AfT on contingent protection case initiations and measures imposed, Poisson pseudo-maximum likelihood estimation, 2001-2018

	Commitments		Disbursements	
	Cases_{drt}	Measures_{drt}	Cases_{drt}	Measures_{drt}
	(1)	(2)	(3)	(4)
$\text{AfT200}_{dr(t-1)}$	0.212**	0.361***	0.216***	0.210***
	(0.0835)	(0.107)	(0.0752)	(0.0732)
$\text{NAD200}_{dr(t-1)}$	2.906***	5.663***	3.079**	1.288
	(1.058)	(1.560)	(1.465)	(1.343)
$\text{AfT300}_{dr(t-1)}$	0.0672	0.181**	-0.0836	-0.0889
	(0.0496)	(0.0855)	(0.0580)	(0.0824)
$\text{NAD300}_{dr(t-1)}$	0.494	1.673	-2.560*	-1.734***
	(0.495)	(1.153)	(1.338)	(1.335)
Total $\text{Aid}_{dr(t-1)}$	-0.0110	0.0408	-0.0571	-0.203*
	(0.0884)	(0.0982)	(0.0956)	(0.123)
$\text{NADTotalAid}_{dr(t-1)}$	1.784	3.322**	-0.274	-2.368
	(1.501)	(1.613)	(1.739)	(2.280)
ln GDP per $\text{Capita}_{r(t-1)}$	0.0496	-0.744	-0.208	-0.310**
	(0.431)	(0.535)	(0.159)	(0.129)
ln Imports $_{dr(t-1)}$	0.399**	0.928**	0.722***	0.746***
	(0.179)	(0.440)	(0.0768)	(0.0806)
ln Real Exchange Rate $_{dr(t-1)}$	1.081	1.818*	0.00337	-0.0207
	(0.683)	(1.020)	(0.128)	(0.125)
$\text{RTA}_{dr(t-1)}$	16.42***	16.59***	-0.118	-0.305
	(1.060)	(1.041)	(0.364)	(0.378)
$\text{Retaliation}_{rd(t-1)}$	-0.0541	-0.0863	-0.0174	0.0159
	(0.0345)	(0.0620)	(0.0342)	(0.0530)
New $\text{Donor}_{r(t-1)}$	20.31***	20.41***	1.616***	1.100***
	(2.100)	(3.993)	(0.384)	(0.368)
Constant	-34.23***	-48.49***	-0.390	-0.314
	(5.128)	(7.642)	(0.290)	(0.354)
Observations	1,551	1,551	1,551	1,551
R^2	0.847	0.860	0.835	0.808

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include recipient fixed effects and year dummies. Dependent variable Cases (initiated)$_{drt}$ - Number of investigations initiated by the country as importer. Dependent variable Measures$_{drt}$ - Number of final measures implemented or imposed by the country as importer.

3.6.4 Sensitivity checks

Our sample consists of 106 recipient countries (exporters) of US Aid and could raise a concern that the results may be driven by a particular country or a group of countries. This chapter addresses this concern by a step-wise dropping of countries from the sample and presenting results (see Appendix C Table C.5) replicated for the model of Table 3.6 Column 5. We

exclude, individually in succession, China (the biggest target of US contingent protection), India, Mexico, Brazil, Argentina and Pakistan[40] from the recipient side in the analysis. The results remain consistent with the baseline results and hence we can say that the relationship presented in the models are robust and not driven by outliers.

3.6.5 Other traditional donors and contingent protection users

As discussed before, amongst all traditional donors, the US is the most intense in contingent protection activity[41]. In the developed world, with respect to contingent protection, the US is followed by European Union countries[42]. In this chapter, it is pertinent to empirically test the relation between AfT and contingent protection for other traditional donors who are incidentally also *traditional* users of contingent protection (Blonigen and Prusa, 2001; Finger and Artis, 1993; Prusa, 2005). In Figure 3.8 are shown the distributions of AfT (Sector 200 & Sector 300) as a ratio of GNI for the top donor countries. Also plotted are the contingent protection measures initiated by the respective countries. With the exception of Japan[43] (and to some extent New Zealand) we see a high density of contingent protection measures and a share of AfT committed in recent years. The following sub-sections provide a brief synopsis of the donor country profiles and subsequently results of estimates for each donor sub-sample.

3.6.5.1 Australia

As early as 1901, Australia formalised an anti-dumping provision in their Customs Act. Subsequently, an anti-dumping and countervailing system is in place under the Anti-Dumping Commission. On the front of foreign aid, Australia has been introducing cuts to its aid budget consistently. As can be seen from Figure 3.8 both AfT to Economic Infrastructure & Production sectors (as a percentage of GNI) have reduced. From our results in Table 3.10 we see that like the US, Australia also exhibits a positive correlation between AfT commitments

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[40]A country which always finds mention when discussing US aid is Israel. Israel is one of the top receivers of US Aid (ranking no. 1 in the High Income Group and no. 2 in the region (Middle East and North Africa), after Iraq. However, almost all of the US aid to Israel is for military purposes. In the period chosen for this study, AfT to Israel from the US has been negligible. At the same time, contingent protection activity between the two countries has been nearly absent with both having instigated only one contingent protection case each against each other.

[41]Ranking second globally with 694 Anti-dumping and 218 Countervailing duty initiations.

[42]Ranking third globally with 510 Anti-dumping and 68 Countervailing duty initiations.

[43]Japan is the world leader in terms of AfT commitments and disbursements (See Appendix C Figure C.3). However, on the front of using formal contingent protection provisions at the WTO, Japan has been frugal with only 12 contingent protection cases (11 anti-dumping and 1 countervailing duty case) against developing countries between 1995 and 2018. We estimate equation 3.2 for a sub-sample with Japan as the donor of interest and observe that there is a lack of heterogeneity in terms of $Cases_{drt}$ (initiated) resulting in frail estimates with highly collinear dummies and the R^2 as 1.
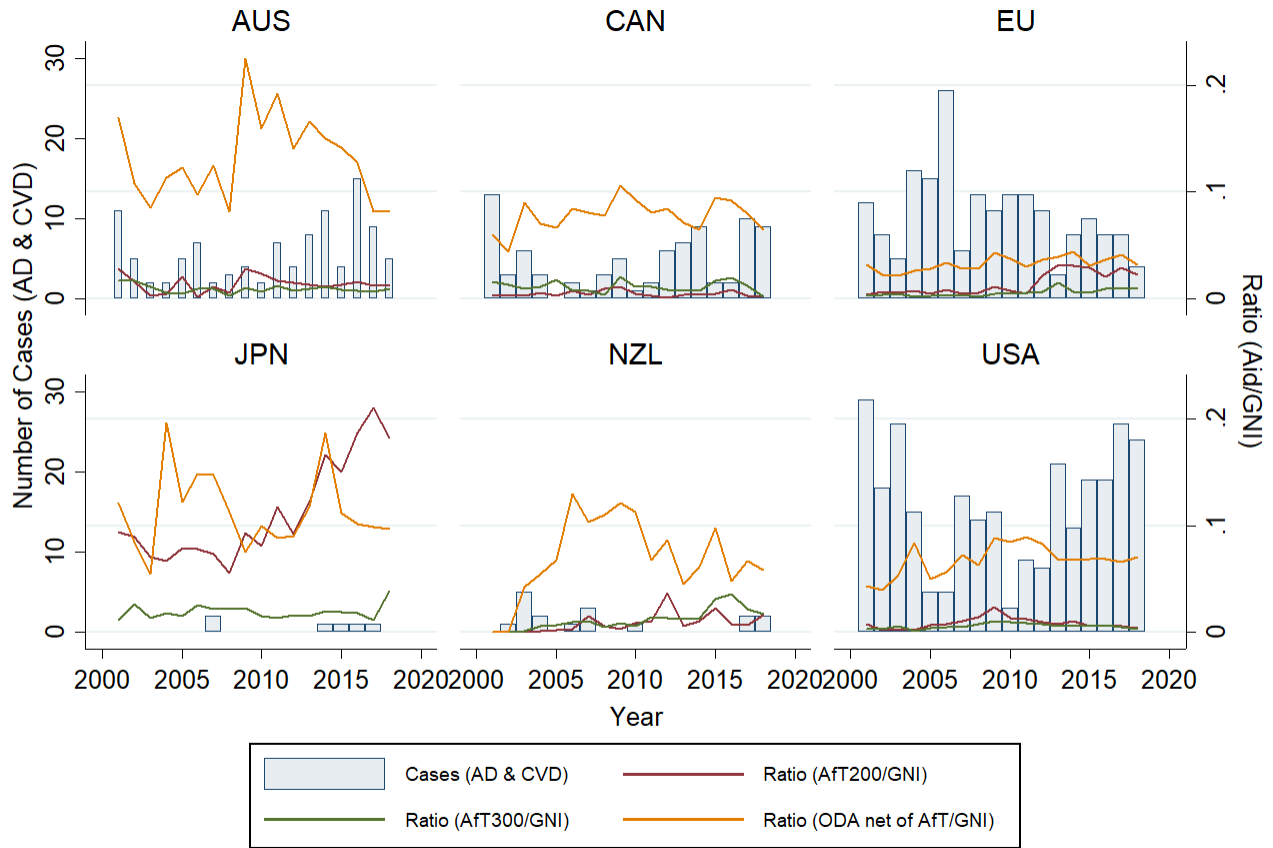
Figure 3.8: Cases (initiated) vs. Aid commitment (as a percentage of GNI) to bilateral recipients, Top donors, 2001-2018
Source: Author's calculation based on OECD-DAC CRS, aid activity database (OECD, 2019f) and World Bank (2019b) data

(Sector 200) and protectionist measures against the recipient countries.

3.6.5.2 Canada

Canada is also amongst the first countries to introduce Anti-dumping legislation in its constitution in 1904 (Blonigen and Prusa, 2001). Canada's AfT numbers as a percentage of GNI have fallen consistently. Many critics term Canada as the laggard of the developed world in terms of allocating foreign aid. In terms of the estimation results, we find no statistically significant correlation between aid committed to the Economic Infrastructure & services sector and protection cases. There is, however, a positive link between aid for Production Sectors and protection[44]. We may attribute this to the fact that Canada has a

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[44]Cadot et al. (2004) find that in respect of tariff protection, rich countries protect agriculture more than they do manufactures, whereas poor countries do the reverse. Our finding for Canada supports this evidence,

large agriculture and mines industry which may be more inclined to lobbying for protection, thereby leading to an escalation of these cases.

3.6.5.3 European Union (EU)

The EU earmarks one-third of its ODA for AfT with 35% of this amount targeted to Africa and 26% to Asia (Europa, 2019). We repeat the estimation regression with EU as a donor and 106 recipient countries. We can see that on a stand alone basis, EU does not have a statistically significant relationship between AfT and contingent protection activity. This can be attributed to the higher possibility of check and balance in decisions with respect to the EU functioning since each committee formed by the European Commission for key decisions consists of members from different EU states. The Directorate-General for International Cooperation and Development is the European Commission department responsible for EU policy on development and delivering international aid. On the front of trade defence policies like anti-dumping and countervailing duties, the European Commission constitutes a trade defence committee composed of representatives of EU Member States. Due to the fairly independent nature of both these committees, we may conclude that in case of the EU, decisions on trade protection and development assistance are independent of each other, which is also corroborated by our empirical results.

3.6.5.4 New Zealand

New Zealand exhibits a negative correlation between AfT for Economic Infrastructure & Services with contingent trade protection. On the front of Production Sectors, the expected counts of $\mathbf{Cases_{drt}}$ (initiated) against aid recipients will be larger than those to non-aid recipients when $3.032\times \ln \text{AfT300}_{dr(t-1)}) > 34.77$ which can only happen if $\ln \text{AfT300}_{dr(t-1)} \geq 11.5$ i.e. USD 0.1 mln.

With this empirical evidence, we may conclude that within the traditional donors, the relationship between AfT and contingent protection activity is uneven. Overall, Australia and the US behave similarly in their AfT and trade protection outlook.

3.6.6 Limitations and caveats

One possible concern with the aforesaid results is related to the absence of domestic infrastructure variables. What impact does the already existing infrastructure have on the reception and utilisation of AfT dedicated to Economic Infrastructure & Services (Sector 200

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albeit, in terms of contingent protection.

Table 3.10: The impact of AfT on contingent protection case initiations, comparing the US with Australia, Canada, European Union and New Zealand, Poisson pseudo-maximum likelihood estimation, 2001-2018

	AUS	CAN	EU	NZL	USA
AfT200$_{dr(t-1)}$	0.119**	-0.0211	0.116	-1.958***	0.212**
	(0.0514)	(0.0856)	(0.0773)	(0.154)	(0.0835)
NAD200$_{dr(t-1)}$	1.214**	-0.698	1.605		2.906***
	(0.518)	(1.127)	(1.190)		(1.058)
AfT300$_{dr(t-1)}$	0.0962	0.129*	-0.0225	3.032*	0.0672
	(0.180)	(0.0709)	(0.0342)	(1.806)	(0.0496)
NAD300$_{dr(t-1)}$	-1.144	0.869	-0.659	34.77*	0.494
	(1.700)	(1.045)	(0.551)	(20.55)	(0.495)
Total Aid$_{dr(t-1)}$	0.234	0.110	-0.0187	0.272	-0.0110
	(0.201)	(0.0963)	(0.0452)	(0.216)	(0.0884)
NADTotalAid$_{dr(t-1)}$		1.387	0.303		1.784
		(1.430)	(0.638)		(1.501)
ln GDP per Capita$_{r(t-1)}$	1.255**	0.201	0.737	11.93***	0.0496
	(0.593)	(0.673)	(0.810)	(3.915)	(0.431)
ln Imports $_{dr(t-1)}$	-0.469	0.984**	0.825	-2.433	0.399**
	(0.549)	(0.468)	(0.548)	(1.941)	(0.179)
ln Real Exchange Rate $_{dr(t-1)}$	-1.052	-0.421	1.460	15.26***	1.081
	(1.561)	(0.532)	(0.976)	(4.978)	(0.683)
RTA$_{dr(t-1)}$	-0.800***	-16.83***	0.265	-0.227	16.42***
	(0.178)	(1.242)	(0.487)	(1.341)	(1.060)
Retaliation$_{rd(t-1)}$	0.498	-0.913	0.0730	44.13***	-0.0541
	(0.564)	(0.757)	(0.109)	(2.394)	(0.0345)
New Donor$_{r(t-1)}$	20.27***	9.842***	10.99***	20.27*	20.31***
	(4.284)	(2.354)	(3.360)	(12.15)	(2.100)
Constant	-23.39**	-33.63***	-42.27***	-178.1***	-34.23***
	(9.261)	(5.913)	(9.589)	(35.95)	(5.128)
Observations	1,064	1,561	1,482	1,450	1,551
R^2	0.693	0.663	0.861	0.869	0.847

Dependent Variable - Number of contingent protection *Cases*$_{drt}$. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include recipient fixed effects and year dummies.

of AfT)? Due to the unavailability of domestic infrastructure data for most of the developing countries on the recipient side of the sample, we are not able to answer this question nor conduct this analysis in the current set up. For the limited number of countries where this data is available, the analysis is planned and results will be updated in due course.

Furthermore, while we conduct Instrumental Variable (IV) analysis to tackle the potential endogeneity between AfT and contingent protection, the IVs have a potential limit. Many studies evoke the importance of governance related measures on trade (and therefore indirectly

on protection) and hence we exercise caution in depending on the results of the IV analysis. The search for completely exogenous instruments is ongoing and is an avenue for extensions in research.

Also, as stipulated before, what we have been able to test in this chapter is that aid and trade policy are correlated through contingent protection measures, albeit, the channel is not identified. We have evoked several possible explanations of a channel through which protectionism rises after foreign aid is committed or disbursed. Albeit, in terms of the pinning down of the exact channel, it is left to further research.

3.7   Conclusion

The central complementarity between aid flows and trade has been documented in theoretical and empirical studies. It seems donors preferred aid over trade in the years just following the wars. This has, however, shifted in favour of trade, specially with the concept of *tied aid*. On the question of how far aid is effective in boosting recipient's exports, several studies have shown that AfT has been effective in helping developing countries overcome the constraints to trade and become increasingly integrated into the global trading systems. However, literature has paid scant attention to the actions of market access or curtailment subsequent to aid provision.

This chapter is one of the first studies to question whether donor nations really ameliorate market access to the recipient countries. To investigate this question, this chapter begins with a focus on the US aid and trade policy. We match data on the USA's use of contingent protection at the WTO against the countries who are recipients of aid (specifically AfT) from the US. We find evidence that USA's contingent protection activity increases against a country which has been the recipient of its Aid under the AfT programme in the previous year. This chapter also finds that between Economic Infrastructure & Services and Production sectors, it is the former that is the significant medium for surge in protection cases.

To ensure that this is not a spurious correlation, we perform robustness checks and also use the Instrumental Variable (IV) approach to corroborate results. To examine the heterogeneity in donor decisions, this study is expanded to other traditional donors like Australia, Canada, European Union and New Zealand. This chapter finds that Australia behaves similar to the US, however, for Canada and the European Union the relationship between aid and market access is not statistically significant. This relationship is negative (indicating increased market

access) for recipients of New Zealand.

The results have significant policy implications because AfT has been endorsed by developed countries as well as multilateral international organisations as a consequential tool to establish a fair playing field for developing countries to alleviate poverty through the channels of trade. Therefore, when 'help' is being offered to integrate developing countries into global markets and open their markets, if the donors contemporaneously put tacit barriers to trade, the so-called *medicine* (AfT) comes with *side-effects* (curtailed market access). Furthermore, if developed nations use aid as a cover up for contingent protection, it would not be entirely correct to implicate developing countries for using contingent protection as an escape mechanism against liberalisation.

Of course, as a policy implication, this chapter does not suggest proliferation of tit-for-tat behaviour amongst the donors and recipients of aid. On the contrary, it raises important questions on the validity and prevalence of the AfT program and the (newly challenged) role of WTO in maintaining the rules of international trade to ensure that developing countries are not stripped off their trade advantages from one hand while being thrusted with aid in the other.

Finally, many developing countries like China and India (new donors) are elevating in their status as aid providers to LDCs, simultaneously 'learning' to protect the domestic industries, becoming very active users of contingent protection provisions. A useful extension of this work could be the empirical analysis of new donor's market access policies towards their aid recipients.

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General Conclusion

Contingent protection measures were introduced in the multilateral trading systems (first GATT and then WTO) to allow countries to protect their industries against 'unfair' trade practices that may threaten the existence of (purportedly) vulnerable sectors. However, researchers have relentlessly argued that the flexibility which allows the adoption of contingent protection measures has been misused to promote public policies that served private interests. The rhetoric and reality of trade protection, in both developed and developing nations, is fast converging on contingent protection as these measures become popular in view of plummeting tariffs.

This dissertation combines three independent studies on contemporary issues pertaining to the link between contingent protection, political economy and development policy. It contributes to the empirical literature on determinants of non-tariff measures like contingent protection by introducing under-tested issues, namely, strategic motive of retaliation, characteristics of national leadership and the role of foreign aid in protection policies of donor nations. These studies use panel data over a large sample of importer-exporter countries for periods over two decades.

The first chapter is an investigative study to determine the role of strategic motives in decisions of initiating contingent protection measures - specifically Anti-dumping protection which is the most pervasive of all forms of contingent protection measures. Very few countries have shown the same reticence as Japan in its willingness to trust the dispute settlement mechanism in the WTO, thereby avoiding the imposition of non-tariff measures on trading partners. For rest of the lot, developed and developing alike, anti-dumping petitioning has become a norm. Whether this petitioning activity is a result of previous anti-dumping petitions against a country's own exporters is a hypothesis that warranted empirical analysis. This issue is addressed by this chapter where a large sample of 49 nation states (including

the European Union as a single entity) over a two decade period of 1996-2015, is used to study the determinants of anti-dumping action with a focus on retaliatory behaviour.

Preliminary analysis at the country level shows that retaliation is not a statistically significant motive for countries engaged in anti-dumping petitioning. However, the appeal of anti-dumping policies is attractive in a sense of righteousness: 'our industries should be defended against unfair trade practices of foreigners'. Taking a cue from this sentiment, an investigation on the industry channel of contingent protection is conducted. The advantage of using this strategy is that it throws light on the linked issues: *first*, industries with power and political clout could influence anti-dumping filings and, *second*, anti-dumping actions could rise when an industry experiences an economically weak period. Also, the heterogeneous behaviour of countries as per size of imports and incomes becomes visible from our results. To summarise, retaliation is an important strategy at the background when countries file anti-dumping cases against other countries in specific industry groups.

The second chapter is a study into the unanswered questions regarding the link between descriptive representation and trade policy. The role of threat of initiating a contingent protection measure is coupled with the gender characteristic of leaders and may affect decision making differently. Do countries led by women initiate more contingent protection measures because there is a less serious threat from their leaders (leading to a continuing of actions like dumping from trade partners)? Or do countries led by women leaders build a more protectionist stance by engaging in contingent protection petitions to deter future 'unfair trade' activities by trade partners? In order to answer these questions, this chapter develops a premise that women, who are normally posited as less belligerent than men, when put in positions of power, will engage in more protectionist measures in a bid to *defend* domestic industry. While this may be true for positions of greater power like the chief executive, the stance becomes less belligerent at levels of mass leadership (parliamentarians).

This is evident from our results which reveal that women in government affect the trade policy on protectionist measures of democratic states in substantive ways. Increased women representation in parliament has a diminishing effect on contingent protection, irrespective of the chief executive being male or female. In addition, by modelling the gender composition of the legislature, this chapter paints a more realistic and complete picture of the influence of gender on trade policy. This study concludes that the indicators for women's representation in the legislature and woman chief executive are significant-even after controlling for regime, type of parliament, government system and partisanship.

To tackle the issue of potential endogeneity between women's political participation linked with capabilities to engage in contingent protection activity, we use gender quotas as instrument for women's political participation. The results of IV analysis are consistent with our expectations in the aggression hypothesis for woman chief executive and the cooperation hypothesis for women in parliament. The results of this chapter open up a new avenue for research focused on women leaders and consequently women's role in influencing trade policy, not only as entrepreneurs, traders or consumers, but also as policy makers.

The third and final chapter of this dissertation explores the nexus between foreign aid and contingent protection. Again, this is a novel study since the linkages between foreign aid and its subsequent effect on the rise (or fall) of protectionist policies have been scantily discussed in extant literature. This chapter contributes to literature on the efficiency (doing things right) and efficacy (doing the right thing) of foreign aid, specifically Aid for Trade/ AfT. AfT, which has attracted the interest from the international community, was initialised by the WTO to mainstream trade into national development strategies of the aid receiving countries. However, like the traditional aid (also called official development assistance), AfT has been criticised for solely pushing the foreign policy agendas of donors with tying of AfT disbursements to the implementation of donor-centric policies. This chapter investigates whether the espousal norms within AfT programmes have also been followed up with greater market access to recipient countries purported to have been 'mainstreamed' into the global trading order through aid benefits.

In this chapter, it is postulated that on one hand AfT is expected to have positive impact on the exports of the aid recipients by better integration into the global trading order, while, on the other hand, aid provider (donor) curtails access to its own markets by actuating contingent protection against the recipient (exporter). Using contingent protection cases data from 2001 to 2018 against 106 recipient countries of USA's AfT, this chapter finds a significant and positive impact of AfT on the surge in contingent protection activities. This effect is entirely driven by the aid for Economic Infrastructure & Services (Sector 200) while the other main category of AfT- Production Sector (Sector 300), has no discernible effect on rise in protection against the recipient of aid. Amongst other developed nations, the results are similar (to the USA) for Australia, however, for the EU and Canada there is no relationship between AfT and contingent protection. This aforesaid relationship is a negative correlation in the case of New Zealand. Although, it must be said that Japan is a an exception amongst the group of industrialised economies in the contingent protection activity due to its frugal use of the policy instruments available.

What are the policy implications of this chapter? While this chapter does not don the advisory hat, it does raise several significant questions on the role of the WTO in maintaining rules of international trade. We must remember that AfT is a policy championed by the WTO, however, the purpose of AfT is severely hurt if the other role of WTO i.e. to ensure fair market access to all members, is threatened. Specially if market access is being curtailed subsequent to aid being doled out to bring the recipient economy into the global network. In this chapter we have been able to dis-aggregate AfT into two broad categories and have been able to single out the Economic Infrastructure & Services channel for the rise in contingent protection subsequent to AfT commitment (or disbursal). A possible, although challenging, extension of this work that could help identify the exact interaction between aid flows, trade flows and protection *flows*, can be done using data matched for each industry (or product) category. While this kind of dis-aggregated data is available for contingent protection measures, the absence of AfT data for exact industry (that is beneficiary of this AfT) is a limitation.

To sum up, in this dissertation, each chapter is a study on the aspects that have received inadequate attention, thereby contributing to new angles in the realms of trade protection literature. This dissertation includes mainly empirical work with theoretical background in extant literature and trade theory. The first chapter throws light on the strategic motive of retaliation between countries when deploying the instruments of contingent protection for shielding domestic industries. The second chapter brings forth a novel perspective in terms of looking at the gender of trade policy designers and their role in the accentuation of trade barriers specifically contingent protection measures. Finally, the third chapter is a study into another untested topic: the linkage between official development assistance and surge in contingent protection.

To conclude the dissertation, we quote Finger (1992) who in his seminal work said, "*Anti-dumping is ordinary protection with a grand public relations program*". If this is true, we have every reason to be worried. Not only because contingent protection (with its largest constituent being anti-dumping protection) proliferates developed and developing countries alike, but also because public relations (in other words lobbying) is counter cyclical to economic growth. While it is not customary, or advisable, to end a PhD dissertation on a pessimistic note, this dissertation may just be doing that. With major trading nations challenging WTO rules and divorcing from already committed trade agreements, the timing of this study is most opportune. It is now, more than ever, that the debate on trade protection needs to be fuelled. With increasing economic uncertainties and protectionist rhetoric, contingent protection is the gorilla in the room that research needs to tackle, albeit with widened perspective and a

focus on areas that do not necessarily fall in the realms of traditional trade protectionism. This dissertation has been an effort in the direction of that debate.

Agenda for future research

Within every chapter, we have tried to discuss issues raised by the work and that would be worth exploring in future studies. Our results have shown that contingent protection has several layers and is heavily inter-connected with aspects of foreign policy and leadership. This propels us into the direction of issues that are worth addressing in future works. For example, an extension of the results found in Chapter 3 could be the investigation of the role of *new donors*. Dreher et al. (2011) suggest that new and old donors behave similarly in several respects. Also, it might not be adventitious that new donors are also *new users* of contingent protection. Therefore, it is worth investigating the behaviour of new donors in terms of aid followed with market access to recipients.

Another question within the political economy domain is whether intensive lobbying in bad economic times (like pandemics and oil shocks) leads to accentuated protectionist polices. There is selective evidence that difficult economic circumstances have historically led national leaders to enact economic reforms (for example, the 1991 liberalisation in India). This leads to the argument that bad times have resulted in good policy. Nevertheless, as growth slows down in several major economies due to both exogenous and endogenous shocks, the governments may depart from this pattern. They may instead ratchet up protectionist measures in the form of a variety of non-tariff measures. These measures are likely to be influenced by private lobbies which seem to activate specially during economic downturns. Therefore, an investigation into protection dynamics during adverse economic periods may also fuel the debate about the robustness of multilateral trading systems and the possible distortion of the flexibility provided to countries via contingent protection.

These non-exhaustive propositions, with the back-drop of recent economic events that have drawn attention to them, are indubitably a promising area for future research.

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Appendix A

Appendix for Chapter 1

Table A.1: 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	GCC^{vy}	Kazakhstan	Panama	South Korea	Vietnam
Colombia	Guatemala	Latvia	Paraguay	$Taiwan^y$	
	Honduras	Lithuania	Peru	Trinidad & Tobago	

[v]Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates
[y]Excluded in empirical analysis because of the unavailability of macroeconomic data

Table A.2: HS 2002 Classification by Sector

Sector	Sector description
I	Live animals and products
II	Vegetable products
III	Animal and vegetable fats, oils and waxes
IV	Prepared foodstuff; beverages, spirits, vinegar; tobacco
V	Mineral products
VI	Products of the chemical and allied industries
VII	Resins, plastics and articles; rubber and articles
VIII	Hides, skins and articles; saddlery and travel goods
IX	Wood, cork and articles; basket-ware
X	Paper, paperboard and articles
XI	Textiles and articles
XII	Footwear, headgear; feathers, artif. flowers, fans
XIII	Articles of stone, plaster; ceramic prod.; glass
XIV	Precious or Semi-precious stones, precious metals
XV	Base Metals and Articles of base metals
XVI	Machinery and electrical equipment
XVII	Vehicles, aircraft and vessels
XVIII	Instruments, clocks, recorders and reproducers
XIX	Arms and Ammunition
XX	Miscellaneous manufactured articles
XXI	Works of Art, Collector's pieces and Antiques

Source: Statistics, UN Trade (2018)

Table A.3: Intensity of AD initiations: Poisson pseudo-maximum likelihood estimation (Incidence Rate Ratios), 1996-2015, Baseline specification with step-wise inclusion of controls

Variables	1	2	3	4	5	6 (ref. Table 1.3)
$\text{Retaliation}_{ei(t-1)}$	1.052	1.040	1.040	1.044	1.050	1.046
	(0.0418)	(0.0433)	(0.0453)	(0.0466)	(0.0467)	(0.0510)
$\text{Deflection}_{i(t-1)}$	1.000	1.002*	1.002*	1.002*	1.002*	1.001
	(0.000711)	(0.00106)	(0.00106)	(0.00106)	(0.00118)	(0.00132)
$\text{Total AD initiated}_{i(t-1)}$	1.017***	1.021***	1.019***	1.020***	1.019***	1.017***
	(0.00185)	(0.00234)	(0.00235)	(0.00245)	(0.00262)	(0.00271)
$\text{Cases faced}_{i(t-1)}$ (Initiator)	1.016***	1.019***	1.019***	1.018***	1.017**	1.018**
	(0.00558)	(0.00661)	(0.00653)	(0.00646)	(0.00680)	(0.00727)
$\text{Cases faced}_{e(t-1)}$ (Target)	1.023***	1.019***	1.017***	1.017***	1.016***	1.013***
	(0.00406)	(0.00432)	(0.00431)	(0.00416)	(0.00452)	(0.00500)
$\text{Experience}_{i(t-1)}$ (Initiator)	0.992*	0.992	0.992	0.992	0.994	0.996
	(0.00492)	(0.00666)	(0.00676)	(0.00671)	(0.00700)	(0.00805)
$\text{Experience}_{e(t-1)}$ (Target)	1.016	1.024***	1.020**	1.021**	1.023**	1.028**
	(0.00996)	(0.00945)	(0.00948)	(0.00960)	(0.0100)	(0.0109)
$\text{Tariff}_{i(t-1)}$		0.977***	0.984**	0.987*	0.993	0.992
		(0.00701)	(0.00733)	(0.00690)	(0.00760)	(0.00840)
$\text{ln Imports}_{ie(t-1)}$			1.081***	1.072***	1.111***	1.093**
			(0.0237)	(0.0222)	(0.0416)	(0.0391)
$\text{Trade Agreement}_{ie(t-1)}$				1.644***	1.622***	1.402***
				(0.176)	(0.175)	(0.138)
$\text{GDP growth}_{i(t-1)}$ (Initiator)					1.030***	1.030***
					(0.00841)	(0.0117)
$\text{GDP growth}_{e(t-1)}$ (Target)					0.992	0.997
					(0.00802)	(0.00916)
$\text{ln Real Exchange Rate}_{ie(t-1)}$						0.737***
						(0.0750)
Constant	0.0344***	0.0278***	0.0322***	0.0320***	0.0283***	0.384
	(0.0142)	(0.0142)	(0.0165)	(0.0161)	(0.0153)	(0.230)
Observations	86,500	71,363	71,363	71,363	67,969	50,032
R^2	0.497	0.489	0.488	0.489	0.490	0.507

Dependent Variable - Number of contingent protection $\textbf{\textit{Cases}}_{iet}$. Coefficients reported as incidence-rate ratios. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies and country fixed effects. We have a balanced panel of 106,820 observations for 49 countries. However, the PPML excludes certain observations to ensure that estimates exist.

Table A.4: Intensity of AD initiations: Poisson pseudo-maximum likelihood estimation, 1996-2015, Regional Analysis

Variables	Baseline †	EAP	ECA	LAC	MENA	NA	SA
Retaliation$_{ei(t-1)}$	1.046	1.100*	1.141	0.932	1.631	0.930**	0.809**
	(0.0510)	(0.128)	(0.365)	(0.132)	(1.394)	(0.0269)	(0.0667)
Deflection$_{i(t-1)}$	1.001	1.070***	1.062***	0.998	0.985	1.005	1.077**
	(0.00132)	(0.00525)	(0.0157)	(0.00269)	(0.00965)	(0.00357)	(0.0355)
Total AD initiated$_{i(t-1)}$	1.017***	1.073***	1.209*	0.997	1.488*	0.986**	0.967
	(0.00271)	(0.0214)	(0.129)	(0.00868)	(0.320)	(0.00617)	(0.0442)
Cases faced$_{i(t-1)}$ (Initiator)	1.018**	1.131***	1.925***	0.960	0.910	0.977	0.0889***
	(0.00727)	(0.0447)	(0.302)	(0.0463)	(0.805)	(0.0339)	(0.0831)
Cases faced$_{e(t-1)}$ (Target)	1.013***	1.037***	0.975	0.982**	1.114*	1.020**	1.023
	(0.00500)	(0.0110)	(0.0241)	(0.00810)	(0.0695)	(0.00858)	(0.0366)
Experience$_{i(t-1)}$ (Initiator)	0.996	1.058	1.296	1.044	0.645	1.046***	1.206
	(0.00805)	(0.0471)	(0.415)	(0.0337)	(0.420)	(0.0176)	(0.269)
Experience$_{e(t-1)}$ (Target)	1.028**	0.989	1.133	1.019	1.060	1.054***	1.125
	(0.0109)	(0.0252)	(0.0941)	(0.0213)	(0.0912)	(0.0148)	(0.125)
ln Imports$_{ie(t-1)}$	1.093**	1.868***	1.719**	1.634***	1.058	1.532***	1.756
	(0.0391)	(0.230)	(0.396)	(0.193)	(0.0523)	(0.202)	(0.646)
Tariff$_{i(t-1)}$	0.992	1.012	0.382***	1.050	0.711*	1.066	0.962
	(0.00840)	(0.0498)	(0.0659)	(0.0318)	(0.130)	(0.137)	(0.252)
Trade Agreement$_{ie(t-1)}$	1.402***	1.084	0.821	0.660	0.557	1.952*	1.237
	(0.138)	(0.219)	(0.437)	(0.169)	(0.832)	(0.726)	(0.670)
GDP growth$_{i(t-1)}$ (Initiator)	1.030***	1.073	0.988	0.977	0.916	0.805	2.020***
	(0.0117)	(0.0598)	(0.134)	(0.0335)	(0.246)	(0.122)	(0.434)
GDP growth$_{e(t-1)}$ (Target)	0.997	0.991	1.007	0.971	0.938	1.003	0.935
	(0.00916)	(0.0261)	(0.0433)	(0.0198)	(0.0599)	(0.0200)	(0.0484)
ln Real Exchange Rate$_{ie(t-1)}$	0.737***	1.533	1.205	0.390***	0.0691**	0.969	7.263
	(0.0750)	(0.603)	(1.292)	(0.0757)	(0.0935)	(0.158)	(10.03)
Constant	0.384	0***	0***	4.562	1.94e-07***	0.278	0**
	(0.230)	(0)	(0)	(8.234)	(8.42e-07)	(0.334)	(6.81e-11)
Observations	50,032	11,880	11,880	19,460	4,330	2,160	2,160
No. of AD initiating countries	49	11	11	18	4	2	2
R^2	0.507	0.448	0.380	0.562	0.266	0.630	0.478

Dependent Variable - Number of contingent protection **Cases**$_{iet}$. Coefficients reported as incidence-rate ratios. Robust standard errors in parentheses. All regressions include time dummies and country fixed effects. *** p<0.01, ** p<0.05, * p<0.1. † We have a balanced panel of 106,820 observations. However, the PPML excludes certain observations to ensure that estimates exist. Regions are nominated as East asia & Pacific (EAP), Europe & Central Asia (ECA), Latin America & Caribbean (LAC), Middle East & North Africa (MENA), North America (NA) and South Asia (SA) (World Bank, 2019c).

Table A.5: Determinants of AD initiations: Poisson pseudo maximum likelihood model (Incidence Rate Ratios), 1996-2015, Robustness checks

Variables	w/o CHN	w/o IND	w/o KOR	w/o USA	w/o EU	w/o ARG	w/o BRA	w/o MEX	w/o TUR	w/o ZAF
Retaliation$_{ei(t-1)}$	0.982	1.054	1.046	1.074	1.046	1.046	1.052	1.051	1.050	1.051
	(0.0486)	(0.0569)	(0.0510)	(0.0553)	(0.0510)	(0.0510)	(0.0535)	(0.0516)	(0.0504)	(0.0497)
Total AD initiated$_{i(t-1)}$	1.016***	1.014***	1.017***	1.022***	1.017***	1.017***	1.013***	1.017***	1.016***	1.017***
	(0.00318)	(0.00333)	(0.00271)	(0.00266)	(0.00271)	(0.00271)	(0.00295)	(0.00285)	(0.00267)	(0.00278)
Deflection$_{i(t-1)}$	1.001	1.002	1.001	1.003	1.001	1.001	1.001	1.002	1.001	1.001
	(0.00132)	(0.00141)	(0.00132)	(0.00160)	(0.00132)	(0.00132)	(0.00139)	(0.00139)	(0.00127)	(0.00131)
Cases faced$_{i(t-1)}$ (Initiator)	1.055***	1.007	1.018**	1.010	1.018**	1.018**	1.022***	1.017**	1.017**	1.019**
	(0.0134)	(0.00800)	(0.00727)	(0.00776)	(0.00727)	(0.00727)	(0.00742)	(0.00741)	(0.00704)	(0.00730)
Cases faced$_{e(t-1)}$ (Target)	1.011**	1.015***	1.013***	1.013**	1.013***	1.013***	1.018***	1.013**	1.015***	1.012**
	(0.00514)	(0.00543)	(0.00500)	(0.00544)	(0.00500)	(0.00500)	(0.00544)	(0.00527)	(0.00524)	(0.00481)
Experience$_{i(t-1)}$ (Initiator)	1.003	1.007	0.996	0.998	0.996	0.996	0.995	0.995	0.996	0.978***
	(0.00834)	(0.00987)	(0.00805)	(0.00900)	(0.00805)	(0.00805)	(0.00821)	(0.00820)	(0.00799)	(0.00804)
Experience$_{e(t-1)}$ (Target)	1.033***	1.030**	1.028**	1.018	1.028**	1.028**	1.025**	1.027***	1.028***	1.028***
	(0.0107)	(0.0125)	(0.0109)	(0.0115)	(0.0109)	(0.0109)	(0.0115)	(0.0113)	(0.0113)	(0.0106)
Tariff$_{i(t-1)}$	0.995	0.976	0.992	0.984*	0.992	0.992	0.987	0.991	0.993	0.991
	(0.00930)	(0.0144)	(0.00840)	(0.00853)	(0.00840)	(0.00840)	(0.00826)	(0.00893)	(0.00845)	(0.00844)
ln Imports$_{ie(t-1)}$	1.102**	1.116***	1.093**	1.085**	1.093**	1.093**	1.088**	1.089**	1.091**	1.091**
	(0.0443)	(0.0476)	(0.0391)	(0.0389)	(0.0391)	(0.0391)	(0.0392)	(0.0386)	(0.0392)	(0.0389)
Trade Agreement$_{ie(t-1)}$	1.484***	1.380***	1.402***	1.366***	1.402***	1.402***	1.481***	1.369***	1.462***	1.376***
	(0.151)	(0.147)	(0.138)	(0.142)	(0.138)	(0.138)	(0.150)	(0.132)	(0.148)	(0.138)
GDP growth$_{i(t-1)}$ (Initiator)	1.031**	1.029**	1.030***	1.023**	1.030***	1.030***	1.037***	1.032***	1.034**	1.037***
	(0.0124)	(0.0137)	(0.0117)	(0.0108)	(0.0117)	(0.0117)	(0.0127)	(0.0123)	(0.0135)	(0.0122)
GDP growth$_{e(t-1)}$ (Target)	0.995	0.998	0.997	0.991	0.997	0.997	0.997	1.000	0.998	0.996
	(0.00935)	(0.00981)	(0.00916)	(0.00983)	(0.00916)	(0.00916)	(0.00980)	(0.00951)	(0.00939)	(0.00930)
ln Real Exchange Rate$_{ie(t-1)}$	0.754***	0.707***	0.737***	0.694***	0.737***	0.737***	0.835*	0.751***	0.766***	0.778**
	(0.0786)	(0.0748)	(0.0750)	(0.0797)	(0.0750)	(0.0750)	(0.0895)	(0.0776)	(0.0787)	(0.0825)
Constant	0.00308***	0.0448***	0.384	0.0402***	0.384	0.384	0.0397***	0.315*	0.419	0.515
	(0.00241)	(0.0257)	(0.230)	(0.0303)	(0.230)	(0.230)	(0.0282)	(0.199)	(0.248)	(0.309)
Observations	48,764	46,805	50,032	48,543	50,032	50,032	47,263	48,543	48,695	48,685
R^2	0.524	0.444	0.507	0.487	0.507	0.507	0.499	0.512	0.505	0.521

Dependent Variable- Number of contingent protection $Cases_{iet}$. Coefficients reported as incidence-rate ratios. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies and country fixed effects. We have a balanced panel of 106,820 observations. However, the PPML excludes certain observations to ensure that estimates exist.

Table A.6: Intensity of AD initiations: Poisson pseudo-maximum likelihood estimation (Incidence Rate Ratios), 1996-2015, Retaliation lagged by 2 and 3 periods

Variables	1 year lag (Baseline)	2 year lag	3 year lag
Retaliation$_{ei(t-1)}$	1.046		
	(0.0510)		
Retaliation$_{ei(t-2)}$		1.063	
		(0.0362)	
Retaliation$_{ei(t-3)}$			1.047
			(0.0367)
Total AD initiated$_{i(t-1)}$	1.017***	1.016***	1.017***
	(0.00271)	(0.00279)	(0.00248)
Deflection$_{i(t-1)}$	1.001	1.001	1.001
	(0.00132)	(0.00128)	(0.00138)
Cases faced$_{i(t-1)}$ (Initiator)	1.018**	1.024***	1.019**
	(0.00727)	(0.00825)	(0.00778)
Cases faced$_{e(t-1)}$ (Target)	1.013***	1.014***	1.014***
	(0.00500)	(0.00518)	(0.00504)
Experience$_{i(t-1)}$ (Initiator)	0.996	0.999	1.000
	(0.00805)	(0.00827)	(0.00784)
Experience$_{e(t-1)}$ (Target)	1.028**	1.031***	1.031***
	(0.0109)	(0.0106)	(0.0106)
Tariff$_{i(t-1)}$	0.992	0.995	0.994
	(0.00840)	(0.00809)	(0.00803)
ln Imports$_{ie(t-1)}$	1.093**	1.096**	1.089**
	(0.0391)	(0.0392)	(0.0388)
Trade Agreement$_{ie(t-1)}$	1.402***	1.391***	1.404***
	(0.138)	(0.137)	(0.138)
GDP growth$_{i(t-1)}$ (Initiator)	1.030***	1.027**	1.037***
	(0.0117)	(0.0123)	(0.0120)
GDP growth$_{e(t-1)}$ (Target)	0.997	0.997	0.998
	(0.00916)	(0.00912)	(0.00925)
ln Real Exchange Rate$_{ie(t-1)}$	0.737***	0.732***	0.736***
	(0.0750)	(0.0765)	(0.0762)
Constant	0.384	0.388	0.320*
	(0.230)	(0.229)	(0.198)
Observations	50,032	46,998	46,353
R^2	0.507	0.517	0.519

Dependent Variable - Number of contingent protection $Cases_{iet}$. Coefficients reported as incidence-rate ratios. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies and country fixed effects. We have a balanced panel of 106,820 observations for 49 countries. However, the PPML excludes certain observations to ensure that estimates exist.

Table A.7: Determinants of contingent protection initiations: Probit binary choice model, marginal effects, 1996-2015

Variables	Probit estimates
Retaliation$_{ei(t-1)}$	0.0641
	(0.0761)
Total AD initiated$_{i(t-1)}$	0.0197***
	(0.00263)
Deflection$_{i(t-1)}$	0.00652***
	(0.00206)
Cases faced$_{i(t-1)}$ (Initiator)	0.0143***
	(0.00540)
Cases faced$_{e(t-1)}$ (Target)	0.0287***
	(0.00505)
Experience$_{i(t-1)}$ (Initiator)	-0.000622
	(0.00524)
Experience$_{e(t-1)}$ (Target)	0.0266***
	(0.00653)
ln Imports$_{ie(t-1)}$	0.0832***
	(0.0128)
Tariff$_{i(t-1)}$	-0.0166***
	(0.00597)
Trade Agreement$_{ie(t-1)}$	-0.0447
	(0.0805)
GDP growth$_{i(t-1)}$ (Initiator)	0.0282***
	(0.00723)
GDP growth$_{e(t-1)}$ (Target)	-0.00295
	(0.00582)
ln Real Exchange Rate$_{ie(t-1)}$	0.0610**
	(0.0256)
Constant	-6.184***
	(0.695)
Observations	61,664
Pseudo R^2	0.10

Dependent Variable - $\mathbf{Cases}_{iet} = 1$ if contingent protection case initiated or $\mathbf{Cases}_{iet} = 0$ if contingent protection case not initiated. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies, country and sector fixed effects.

Table A.8: Determinants of AD initiations, 1996-2015, Baseline specification on sectoral level

Variables	PPML Estimates (IRR)		Probit Estimates	
	All Sectors	All Sectors †	All Sectors	All Sectors †
Retaliation$_{eis(t-1)}$	2.694***	1.498***	0.747***	0.353***
	(0.310)	(0.206)	(0.0543)	(0.0635)
Total AD initiated$_{is(t-1)}$	1.253***	1.253***	0.150***	0.170***
	(0.00981)	(0.0113)	(0.00315)	(0.00342)
Deflection$_{is(t-1)}$	1.009***	0.995***	0.00209***	-0.0107***
	(0.00135)	(0.00167)	(0.000480)	(0.000647)
Cases faced$_{is(t-1)}$ (Initiator)	1.105***	1.148***	0.0200***	0.0636***
	(0.0185)	(0.0213)	(0.00622)	(0.00681)
Cases faced$_{es(t-1)}$ (Target)		1.342***		0.262***
		(0.0193)		(0.00555)
Experience$_{is(t-1)}$ (Initiator)	0.931***	0.944***	-0.0236***	-0.00921
	(0.0175)	(0.0200)	(0.00564)	(0.00614)
Experience$_{es(t-1)}$ (Target)		1.131***		0.0879***
		(0.0158)		(0.00602)
Average Sectoral Tariff$_{is(t-1)}$	0.995**	0.991***	0.00207***	0.00152**
	(0.00228)	(0.00281)	(0.000602)	(0.000678)
Trade Agreement$_{ie(t-1)}$	0.859**	1.038	0.0852***	0.0625***
	(0.0540)	(0.0669)	(0.00204)	(0.00196)
ln Sectoral Imports$_{ies(t-1)}$	1.375***	1.252***	-0.0242	0.0412*
	(0.0202)	(0.0164)	(0.0216)	(0.0231)
GDP growth$_{i(t-1)}$ (Initiator)	0.985	0.987	0.00455	0.00182
	(0.00981)	(0.00989)	(0.00295)	(0.00314)
GDP growth$_{e(t-1)}$ (Target)	1.101***	1.038***	0.0388***	0.00467*
	(0.00689)	(0.00747)	(0.00231)	(0.00268)
ln Real Exchange Rate$_{ie(t)}$	0.704***	0.876*	0.00242	-0.00433
	(0.0490)	(0.0653)	(0.00338)	(0.00366)
Constant	0.00611***	0.00120***	-0.0953*	-0.592***
	(0.00552)	(0.00113)	(0.0506)	(0.0560)
Observations	975,327	975,327	1,075,571	1,075,571
Pseudo R^2	0.066	0.058	0.351	0.419

$\dagger$ Includes target side variables for experience and cases faced. Dependent Variable - Number of contingent protection **$PCases_{iest}$**. Results of the probit regression have been reported with average marginal effects. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies, country and sector fixed effects.

Table A.9: Determinants of AD initiations, 1996-2015, specification on sectoral level for select industry (sector) category

	All Ref. Table A.8	Base Metals	Machinery, Mech. & Ele eqpmt.	Wood Pulp & Paper	Vehicle & Transport	Chemicals	Rubber & Plastics
Retaliation$_{eis(t-1)}$	0.747***	0.441***	0.727*	0.966*	0.274*	1.208***	0.867*
	(0.0543)	(0.271)	(0.747)	(0.300)	(0.870)	(0.448)	(0.345)
Total AD initiated$_{is(t-1)}$	0.150***	0.139***	0.675***	0.467***	0.928***	0.227***	0.273***
	(0.00315)	(0.0104)	(0.0805)	(0.0523)	(0.125)	(0.0293)	(0.0193)
Cases faced$_{is(t-1)}$ (Initiator)	0.0200***	0.0620*	-0.266**	0.0530	0.908*	0.00685	-0.156**
	(0.00622)	(0.0340)	(0.133)	(0.138)	(0.528)	(0.0537)	(0.0647)
Sectoral Tariff$_{is(t-1)}$	0.00207***	0.0249**	-0.0434	0.162***	-0.0527	-0.0331*	-0.0138
	(0.000602)	(0.0120)	(0.0296)	(0.0511)	(0.0604)	(0.0201)	(0.0156)
ln Sectoral Imports$_{ies(t-1)}$	0.0852***	0.393***	0.575***	0.480***	0.750***	0.336**	0.439***
	(0.00204)	(0.0570)	(0.0759)	(0.0957)	(0.0638)	(0.155)	(0.0944)
ln Total Imports$_{is(t-1)}$	-0.185***	-0.254	-0.792*	-0.898**	0.828	-0.0354	-0.416
	(0.0440)	(0.179)	(0.447)	(0.451)	(0.758)	(0.445)	(0.323)
Trade Agreement$_{ie(t-1)}$	-0.0242	-0.406**	-0.130	-0.592*	-0.488	0.247	-0.260
	(0.0216)	(0.195)	(0.299)	(0.336)	(0.369)	(0.181)	(0.181)
GDP growth$_{i(t-1)}$ (Initiator)	0.00455	-0.0157	0.0343	0.00211	-0.00124	-0.0286	0.00889
	(0.00295)	(0.0177)	(0.0243)	(0.0329)	(0.0469)	(0.0189)	(0.0186)
GDP growth$_{e(t-1)}$ (Target)	0.0388***	0.0394***	0.0557***	0.0397**	0.0852***	0.0280***	0.0538***
	(0.00231)	(0.00580)	(0.00694)	(0.0162)	(0.0157)	(0.00867)	(0.00984)
ln Real Exchange Rate$_{ie(t-1)}$	0.00242	0.739***	-0.305	0.327	-0.577	-0.258	0.459*
	(0.00338)	(0.186)	(0.348)	(0.421)	(0.679)	(0.223)	(0.260)
Constant	-0.0953*	-4.964	3.067	4.077	-31.47**	-8.606	-3.008
	(0.0506)	(3.765)	(10.44)	(9.068)	(14.39)	(9.317)	(6.756)
Observations	1,075,571	43,512	31,074	31,548	18,716	46,634	42,394
Pseudo R^2	0.351	0.169	0.152	0.127	0.100	0.138	0.162

Dependent Variable - Number of contingent protection $PCases_{iest}$. Results of the probit regression have been reported with average marginal effects. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include time dummies, country and sector fixed effects. The variable Deflection$_{is(t-1)}$ and Experience$_{is(t-1)}$ (Initiator) are excluded from the regression due to problems in convergence. Regressions do not include target side variables Cases faced$_{es(t-1)}$ and Experience$_{es(t-1)}$

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Appendix B

Appendix for Chapter 2
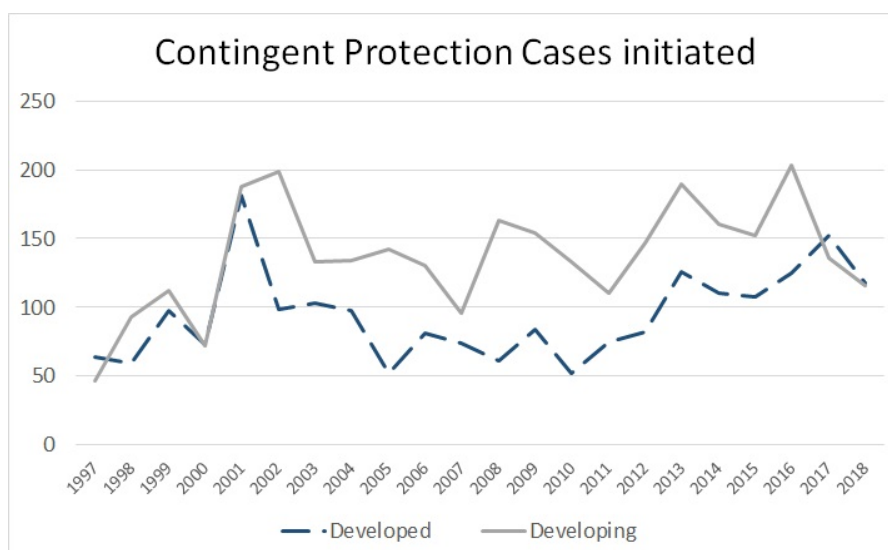
Figure B.1: Year-wise contingent protection initiations by level of development of initiators
Author's calculation from the WTO database on non-tariff barriers (WTO, 2019e)

Additional notes on theoretical framework of Gender and Trade Policy

In this briefing, we provide a simple game set-up that helps us uncover the behaviours of countries depending on who (whether a man or woman) is leading. This set-up helps us conceive the situation wherein a female chief of a country reacts differently to male chiefs due to the elements of perceived gender roles as well as the element of threat that the office carries, not separate from the gender of the leader.

B.0.1 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, 2020). 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).

B.0.2 Role of Threat

By using data over 15th-20th century Dube and Harish (2020) 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 et al. (2014) 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 B.1[1].

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[1]Notations 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).

		Country I	
		Countermeasure / CM (p)	No Countermeasure / NCM (1-p)
Country E	Dump	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

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

- If dumping continues : S_{export}-R_1, with probability **p**, or; 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.

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).

- Ceteris paribus, probability p and $\mathbf{R_1}$ 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} - $p \times C$.

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 ($\mathbf{p_{male}}^2 \to 0$) = S_{import}
- Expected revenue of the importer nation led by female ($\mathbf{p_{female}}^3 \to 1$) = $S_{import} - p \times C$

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} - $p \times C$. 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 national leader's gender 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.

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[2]Probability of taking a countermeasure for a male leader.
[3]Probability of taking a countermeasure for a female leader.

Table B.2: 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	GCC^{vy}	Kazakhstan	Panama	South Korea	Vietnam
Colombia	Guatemala	Latvia	Paraguay	$Taiwan^{y}$	
	Honduras	Lithuania	Peru	Trinidad & Tobago	

^{v}Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates
^{y}Excluded in empirical analysis because of the unavailability of macroeconomic data

Table B.3: 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 B.4: The impact of woman leadership on contingent protection, Negative Binomial regression (Incidence Rate Ratios), 1998-2018, Baseline specification

Variables	(1)	(2)	(3)
Woman Chief$_{i(t-1)}$	1.425**	1.300**	1.820***
	(0.246)	(0.230)	(0.265)
Women in Parliament$_{i(t-1)}$(Pct)	0.538	0.236*	0.106***
	(0.371)	(0.182)	(0.0859)
Woman Minister of Foreign Affairs$_{i(t-1)}$		1.304	1.303**
		(0.244)	(0.164)
Woman Minister of Finance$_{i(t-1)}$		0.554**	0.934
		(0.148)	(0.203)
Democracy$_{i(t-1)}$		2.116***	3.256***
		(0.362)	(0.517)
GDP Growth Rate$_{i(t-1)}$(Initiator)			1.136***
			(0.0207)
GDP Growth Rate$_{e(t-1)}$(Target)			1.034***
			(0.00371)
ln Imports$_{ie(t-1)}$			1.845***
			(0.0366)
ln Real Exchange Rate$_{ie(t-1)}$			1.076
			(0.222)
Retaliation$_{ei(t-1)}$			1.141***
			(0.0195)
Constant	0.0333***	0.0191***	3.93e-08***
	(0.0107)	(0.00633)	(2.16e-08)
Observations	97,301	97,301	73,083
Pseudo R^2	0.09	0.09	0.16

Dependent variable - Number of contingent protection **Cases$_{iet}$**. Clustered (at importer-year) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include country-pair fixed effects and year dummies.

Table B.5: The impact of woman leadership on contingent protection, Negative Binomial regression (Incidence Rate Ratios), 1998-2018, Additional controls and Interaction Results

Variables	(1) (Other controls)	(2) (With interactions)
Woman Chief$_{i(t-1)}$	1.124*	3.625***
	(0.0682)	(0.990)
Women in Parliament$_{i(t-1)}$(Pct)	0.606	0.0541***
	(0.255)	(0.0477)
Woman Chief$_{i(t-1)}$ x Women in Parliament$_{i(t-1)}$(Pct)		0.626
		(0.385)
Woman Min. of Foreign Affairs$_{i(t-1)}$	0.796***	0.790***
	(0.0454)	(0.0458)
Woman Min. of Finance$_{i(t-1)}$	1.194	1.243*
	(0.130)	(0.140)
Democracy$_{i(t-1)}$	1.745***	1.689***
	(0.177)	(0.177)
Government System$_{i(t-1)}$(Semi Pres)	1.248*	1.375**
	(0.146)	(0.210)
Government System$_{i(t-1)}$(Parliamentary)	1.084	1.871***
	(0.0962)	(0.313)
Woman Chief$_{i(t-1)}$ x Government System$_{i(t-1)}$(Semi Pres)		1.213
		(0.508)
Woman Chief$_{i(t-1)}$ x Government System$_{i(t-1)}$(Parliamentary)		0.479***
		(0.0642)
Parliament Structure$_{i(t-1)}$ (Bicameral)	1.767***	0.839
	(0.163)	(0.145)
Woman Chief$_{i(t-1)}$ x Parliament Struct.$_{i(t-1)}$ (Bicameral)		0.500***
		(0.112)
Women in Parliament$_{i(t-1)}$ x Parliament Struct.$_{i(t-1)}$ (Bicameral)		141.4***
		(124.3)
Women in Parliament$_{i(t-1)}$ x Government System$_{i(t-1)}$		0.362**
		(0.163)
GDP growth$_{i(t-1)}$ (Initiator)	1.046***	1.051***
	(0.00859)	(0.00894)
GDP growth$_{e(t-1)}$ (Target)	1.004	1.010
	(0.00594)	(0.00627)
ln Imports$_{ie(t-1)}$	1.769***	1.812***
	(0.0309)	(0.0329)
ln Real Exchange Rate$_{ie(t-1)}$	1.559***	1.677***
	(0.139)	(0.165)
Retaliation$_{ei(t-1)}$	1.027*	1.026*
	(0.0150)	(0.0149)
Constant	1.85e-06***	1.37e-06***
	(7.25e-07)	(6.02e-07)
Observations	73,083	70,788
Pseudo R^2	0.15	0.14

Dependent variable - Number of contingent protection **Cases$_{iet}$**. Clustered (at importer-year) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include country-pair fixed effects and year dummies.

Table B.6: The impact of woman leadership on contingent protection, Negative Binomial regression (Incidence Rate Ratios), 1998-2018, Temporal analysis

Variables	1998-2008	2009-2018
Woman Chief$_{i(t-1)}$	30.98**	3.696*
	(44.55)	(2.737)
Women in Parliament$_{i(t-1)}$(Pct)	0.0157**	0.00188***
	(0.0327)	(0.00315)
Woman Chief$_{i(t-1)}$ x Women in Parliament$_{i(t-1)}$(Pct)	0.215	16.79*
	(0.723)	(28.64)
Woman Min. of Foreign Affairs$_{i(t-1)}$	0.364***	0.997
	(0.0929)	(0.164)
Woman Min. of Finance$_{i(t-1)}$	0.492*	1.668*
	(0.193)	(0.489)
Democracy$_{i(t-1)}$	2.568***	2.065***
	(0.607)	(0.360)
Constant	0.000241***	7.47e-05***
Observations	35,133	35,702
Baseline Controls	Y	Y
Pseudo R^2	0.08	0.07

Dependent variable - Number of contingent protection **Cases$_{iet}$**. Clustered (at importer-level) standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All regressions include country-pair fixed effects and year dummies.

Table B.7: The impact of woman leadership on contingent protection, Instrumental Variable (IV) analysis, 1998-2018

Variables	*Second stage estimates (IRR)*
Woman Chief$_{i(t-1)}$	1.195***
	(0.0601)
Women in Parliament$_{i(t-1)}$(Pct)	1.355
	(0.213)
Woman Chief$_{i(t-1)}$ x Women in Parl$_{i(t-1)}$(Pct)	0.618***
	(0.115)
Constant	1.056
	(0.0363)
Observations	73,083
Standard Controls	Yes
Excluded Instrument	Gender Quota
Interaction Terms	N
R^2	0.04
F stat (Prob > F)	23.16
Hansen J Stat Chi^2 (p-value)†	

First Stage (Instrumented: Woman Chief)	
	Woman Chief
Gender Quota$_{i(t-1)}$	0.461***
	(0.0557)
Pseudo R^2	0.15
Observations	73,083
No. of country pairs	4,131
Standard Controls	Yes
Interaction Terms	N

Dependent variable in the second stage - Number of contingent protection **Cases$_{iet}$**. 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.

Table B.8: The impact of woman leadership on contingent protection, Negative Binomial regression, 1998-2018, Sensitivity checks (Part 1)

	w/o CHN	w/o IND	w/o USA	w/o EU	w/o AUS	w/o NZL	w/o KOR
Woman Chief$_{i(t-1)}$	1.581***	1.097***	1.222***	1.139***	1.113***	1.094***	1.104***
	(0.401)	(0.351)	(0.360)	(0.348)	(0.345)	(0.344)	(0.344)
Women in Parliament$_{i(t-1)}$(Pct)	-2.325***	-2.231***	-2.541***	-2.356***	-2.306***	-2.335***	-2.359***
	(0.636)	(0.579)	(0.579)	(0.560)	(0.561)	(0.558)	(0.558)
Woman Chief$_{i(t-1)}$ x Women in Parl.$_{i(t-1)}$	-2.142	-0.385	-1.189	-0.741	-0.607	-0.611	-0.653
	(1.325)	(1.142)	(1.184)	(1.147)	(1.131)	(1.131)	(1.130)
Woman Min. of Foreign Affairs$_{i(t-1)}$	-0.262***	-0.239***	-0.225***	-0.247***	-0.236***	-0.243***	-0.245***
	(0.0781)	(0.0674)	(0.0663)	(0.0655)	(0.0655)	(0.0652)	(0.0652)
Woman Min. of Finance$_{i(t-1)}$	0.531***	0.403***	0.456***	0.419***	0.410***	0.414***	0.414***
	(0.176)	(0.156)	(0.156)	(0.152)	(0.152)	(0.152)	(0.152)
Democracy$_{i(t-1)}$	0.791***	0.626***	0.720***	0.692***	0.661***	0.665***	0.671***
	(0.134)	(0.125)	(0.126)	(0.122)	(0.122)	(0.122)	(0.122)
Constant	-13.47***	-13.72***	-13.83***	-14.02***	-13.80***	-13.81***	-13.83***
	(0.533)	(0.499)	(0.502)	(0.493)	(0.492)	(0.490)	(0.489)
Baseline Controls	Y	Y	Y	Y	Y	Y	Y
Observations	45,286	45,289	45,284	45,369	45,291	45,298	46,027
Pseudo R^2	0.10	0.133	0.131	0.126	0.132	0.131	0.131

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

Table B.9: The impact of woman leadership on contingent protection, Negative Binomial regression, 1998-2018, Sensitivity checks (Part 2)

	w/o ARG	w/o BRA	w/o CAN	w/o TUR	w/o ZAF	w/o MEX
Woman Chief$_{i(t-1)}$	1.104***	1.126***	1.182***	1.178***	1.012***	1.106***
	(0.344)	(0.350)	(0.346)	(0.348)	(0.348)	(0.348)
Women in Parliament$_{i(t-1)}$ (Pct)	-2.359***	-2.420***	-2.317***	-2.324***	-2.376***	-2.386***
	(0.558)	(0.569)	(0.561)	(0.568)	(0.562)	(0.563)
Woman Chief$_{i(t-1)}$ x Women in Parl.$_{i(t-1)}$	-0.653	-0.721	-0.997	-0.741	-0.602	-0.532
	(1.130)	(1.151)	(1.142)	(1.146)	(1.143)	(1.138)
Woman Min. of Foreign Affairs$_{i(t-1)}$	-0.245***	-0.224***	-0.216***	-0.228***	-0.252***	-0.248***
	(0.0652)	(0.0660)	(0.0657)	(0.0662)	(0.0658)	(0.0662)
Woman Min. of Finance$_{i(t-1)}$	0.414***	0.433***	0.421***	0.406***	0.404***	0.435***
	(0.152)	(0.153)	(0.153)	(0.155)	(0.153)	(0.152)
Democracy$_{i(t-1)}$	0.671***	0.645***	0.660***	0.672***	0.647***	0.656***
	(0.122)	(0.123)	(0.122)	(0.124)	(0.123)	(0.123)
Baseline Controls	Y	Y	Y	Y	Y	Y
Observations	46,027	45,288	45,286	45,290	45,298	45,286
Pseudo R^2	0.131	0.133	0.132	0.132	0.133	0.131

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

Appendix C

Appendix for Chapter 3

Table C.1: Aid for Trade Sector definition

Sector Code	Sector Description
200	Economic Infrastructure & Services
210	Transport & Storage
220	Communications
230	Energy
240	Banking & Financial Services
250	Business & Other Services
300	Production Sectors
310	Agriculture, Forestry, Fishing
320	Industry, Mining, Construction
330	Trade Policies & Regulations

Available on DAC and CRS code lists (OECD, 2019b)

Table C.2: Aid recipient countries targeted under contingent protection measures by the USA

Argentina	Bulgaria	Brazil	Chile	China
Colombia	Czech Republic	Ecuador	Greece	Hungary
Indonesia	India	Israel	Kazakhstan	South Korea
Latvia	Lithuania	Moldova	Mexico	Malaysia
Norway	Oman	Pakistan	Philippines	Poland
Romania	Russia	Saudi Arabia	Singapore	Thailand
Trinidad & Tobago	Turkey	Ukraine	Venezuela	Vietnam
	South Africa		Sri Lanka	

AfT in numbers

Since its commencement in 2006, under the AfT programme, donors have disbursed USD 409 billion of Official Development Assistance (ODA)[1] (See Figure C.1).

Asia has been the biggest recipient under the AfT initiative (Figure C.2). In terms of donors, the ten largest donors have been Japan, the EU, the World Bank, the United States, Germany, France, the United Kingdom, the African Development Bank, the Asian Development Bank and the Netherlands. Some donors have been more driven than others in terms of internal targets stipulated for the AfT programmes. Australia earmarked a target of increasing the AfT share in its Aid portfolio to 20% by 2020. However, this target was achieved by Australia in 2016-2017 itself.
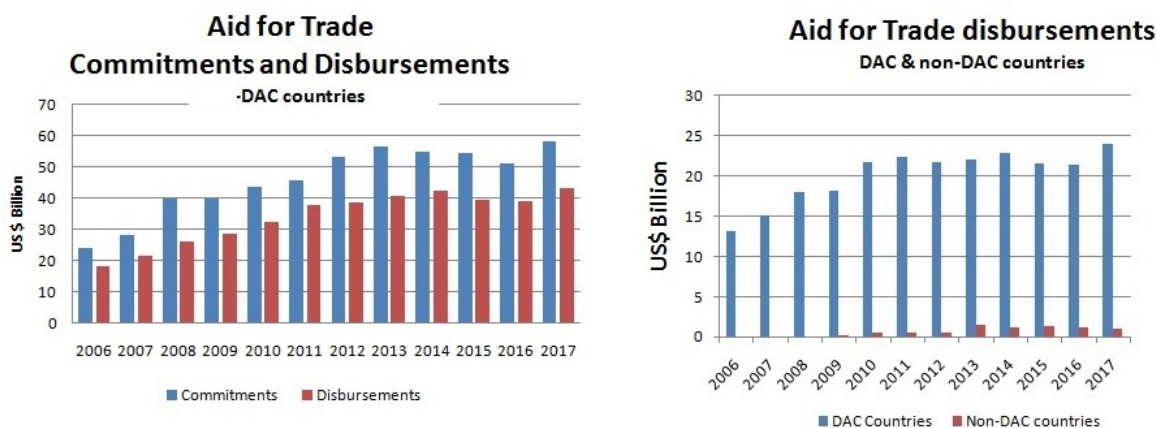

Figure C.1: AfT commitments and disbursements (2006-2017)
Source: Author's calculations based on OECD-DAC CRS, aid activity database (2019)(OECD, 2019f)

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[1]Official development assistance (ODA) is defined as government aid designed to promote the economic development and welfare of developing countries. Loans and credits for military purposes are excluded from the ODA (OECD, 2020)
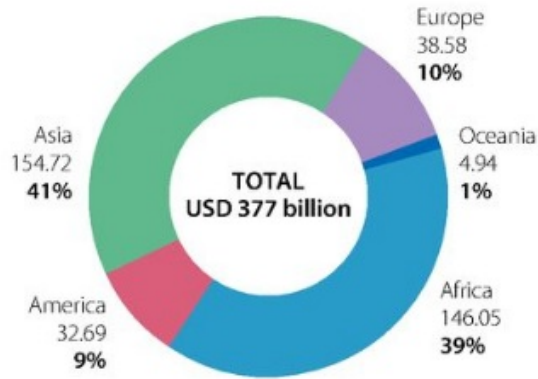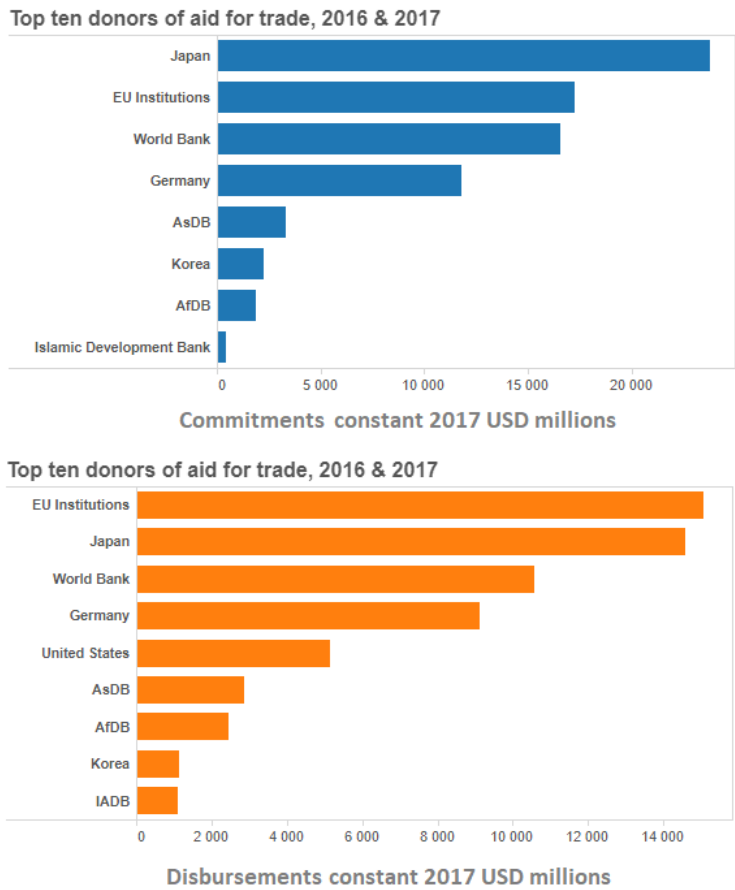
Figure C.2: AfT disbursements by Region (2006-2017)
Source: OECD-DAC CRS, aid activity database (2019)(OECD, 2019f)

Source: OECD-DAC, Aid Activities database
available on:
https://public.tableau.com/views/Aid_for_trade/Aid_for_trade?:embed=y&:showTabs=y&:display_count=no&:showVizHome=no#1

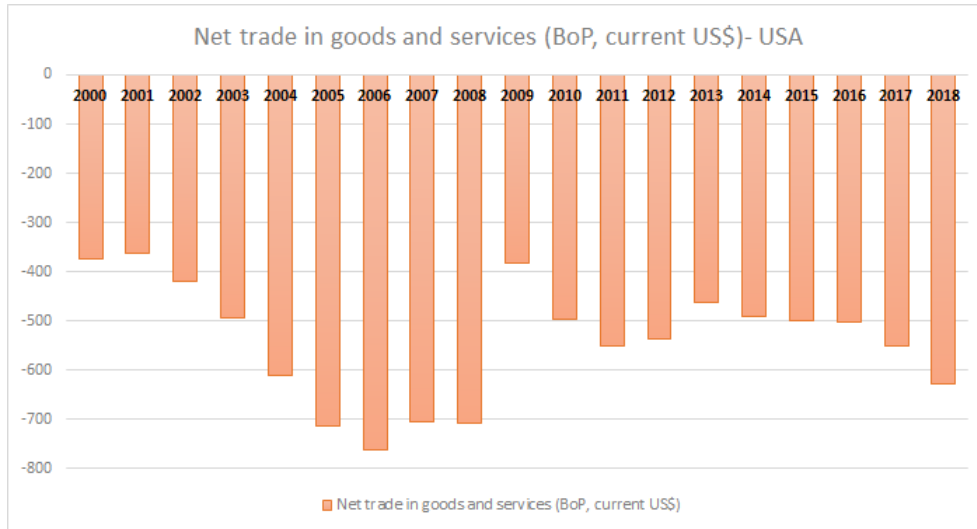Figure C.3: Top donors by commitments and disbursements, 2016 & 2017

Figure C.4: Net trade in goods and services- USA (2000-2018)
Source : World Bank (World Bank, 2019e)

Table C.3: The impact of US Aid for Trade (AfT) on contingent protection case initiations against recipients, 2001-2018

	Cases (1)	Cases (2)	Measures (3)	Measures (4)
$AfT_{dr(t-1)}$	0.215**		0.280**	
	(0.0889)		(0.140)	
$NAD_{dr(t-1)}$	2.884**		4.378*	
	(1.293)		(2.257)	
$AfT200_{dr(t-1)}$		0.212**		0.361***
		(0.0835)		(0.107)
$NAD200_{dr(t-1)}$		2.906***		5.663***
		(1.058)		(1.560)
$AfT300_{dr(t-1)}$		0.0672		0.181**
		(0.0496)		(0.0855)
$NAD300_{dr(t-1)}$		0.494		1.673
		(0.495)		(1.153)
Total $Aid_{dr(t-1)}$		-0.0110		0.0408
		(0.0884)		(0.0982)
$NADTotalAid_{dr(t-1)}$		1.784		3.322**
		(1.501)		(1.613)
ln GDP per $Capita_{r(t-1)}$	0.139	0.0496	-0.471	-0.744
	(0.361)	(0.431)	(0.484)	(0.535)
ln Imports $_{dr(t-1)}$	0.471**	0.399**	1.182**	0.928**
	(0.199)	(0.179)	(0.540)	(0.440)
ln Real Exchange Rate $_{dr(t-1)}$	0.975**	1.081	1.605**	1.818*
	(0.484)	(0.683)	(0.682)	(1.020)
$RTA_{dr(t-1)}$	16.47***	16.42***	16.71***	16.59***
	(1.064)	(1.060)	(1.063)	(1.041)
$Retaliation_{rd(t-1)}$	-0.0461	-0.0541	-0.0343	-0.0863
	(0.0346)	(0.0345)	(0.0481)	(0.0620)
New $Donor_{r(t-1)}$	18.98***	20.31***	15.66***	20.41***
	(2.095)	(2.100)	(4.255)	(3.993)
Constant	-34.69***	-34.23***	-47.99***	-48.49***
	(4.752)	(5.128)	(8.723)	(7.642)
Observations	1,551	1,551	1,551	1,551
R^2	0.848	0.847	0.835	0.860

Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. All regressions include recipient fixed effects and year dummies.

Table C.4: The impact of US Aid for Trade (AfT) on contingent protection case initiations against recipients, 2001-2018

VARIABLES	AfT (Infra)		AfT (Prod.)		AfT (Infra + Prod.)	
Transformation	Log	IHS	Log	IHS	Log	IHS
	(1)	(2)	(3)	(4)	(5)	(6)
$AfT200_{dr(t-1)}$	0.185**					
	(0.0781)					
$NAD200_{dr(t-1)}$	2.470**					
	(1.097)					
$AfT200_{dr(t-1)}$ (IHS)		0.0298**				
		(0.0219)				
$AfT300_{dr(t-1)}$			0.0586			
			(0.0571)			
$NAD300_{dr(t-1)}$			0.412			
			(0.623)			
$AfT300_{dr(t-1)}$ (IHS)				0.0290		
				(0.0193)		
Total $Aid_{dr(t-1)}$					0.215**	
					(0.0889)	
$NADTotalAid_{dr(t-1)}$					2.884**	
					(1.293)	
Total $Aid_{dr(t-1)}$ (IHS)						0.0348**
						(0.0221)
ln Imports $_{dr(t-1)}$	0.452**	0.464**	0.468**	0.471**	0.471**	0.471**
	(0.202)	(0.195)	(0.196)	(0.193)	(0.199)	(0.194)
ln Real Exchange $Rate_{dr(t-1)}$	1.018**	0.931*	1.020*	0.956**	0.975**	0.926*
	(0.483)	(0.504)	(0.531)	(0.486)	(0.484)	(0.506)
ln GDP per $Capita_{r(t-1)}$	0.146	0.188	0.304	0.277	0.139	0.166
	(0.346)	(0.321)	(0.344)	(0.347)	(0.361)	(0.324)
$RTA_{dr(t-1)}$	16.53***	16.58***	16.57***	16.57***	16.47***	16.57***
	(1.060)	(1.057)	(1.059)	(1.059)	(1.064)	(1.057)
$Retaliation_{rd(t-1)}$	-0.0389	-0.0287	-0.0354	-0.0282	-0.0461	-0.0313
	(0.0331)	(0.0355)	(0.0373)	(0.0355)	(0.0346)	(0.0360)
New $Donor_{r(t-1)}$	19.05***	18.00***	18.05***	17.80***	18.98***	18.01***
	(1.994)	(1.987)	(2.107)	(1.982)	(2.095)	(1.992)
Constant	-33.97***	-30.99***	-32.56***	-31.65***	-34.69***	-31.03***
	(4.689)	(4.504)	(4.841)	(4.334)	(4.752)	(4.483)
Observations	1,551	1,551	1,551	1,551	1,551	1,551
R-squared	0.842	0.841	0.842	0.842	0.848	0.842

Dependent Variable - Number of contingent protection $Cases_{drt}$.

Robust standard errors in parentheses

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

Table C.5: Number of contingent protection cases, Sensitivity Analysis Results, Poisson pseudo-maximum likelihood estimation (Incidence Rate Ratio), 2001-2018

Variables	w/o CHN	w/o KOR	w/o IND	w/o MEX	w/o BRA	w/o ARG
AfT200$_{dr(t-1)}$	0.504***	0.265***	0.265**	0.272***	0.237***	0.265***
	(0.131)	(0.0793)	(0.124)	(0.0906)	(0.0821)	(0.0793)
NAD200$_{dr(t-1)}$	0.336	-0.0187	-0.0401	0.163	-0.0675	-0.0187
	(0.225)	(0.317)	(0.320)	(0.320)	(0.355)	(0.317)
AfT300$_{dr(t-1)}$	-0.284**	0.00689	-0.0338	-0.118	0.0619	0.00689
	(0.123)	(0.148)	(0.213)	(0.138)	(0.145)	(0.148)
NAD300$_{dr(t-1)}$	-0.562***	-0.0914	-0.166	-0.308	0.0901	-0.0914
	(0.202)	(0.300)	(0.399)	(0.316)	(0.294)	(0.300)
Total Aid$_{dr(t-1)}$	-0.129	-0.0462	-0.0450	-0.0648	-0.0153	-0.0462
	(0.145)	(0.110)	(0.0984)	(0.128)	(0.108)	(0.110)
NADTotalAid$_{dr(t-1)}$	0.407	0.162	0.0974	0.0150	0.232	0.162
	(0.691)	(0.691)	(0.677)	(0.712)	(0.767)	(0.691)
ln GDP per Capita$_{r(t-1)}$	3.354**	0.0839	0.176	-0.331	0.120	0.0839
	(1.609)	(0.414)	(0.410)	(0.506)	(0.521)	(0.414)
ln Imports $_{dr(t-1)}$	-0.0522	0.476**	0.397**	0.612***	0.469**	0.476**
	(0.351)	(0.194)	(0.200)	(0.194)	(0.200)	(0.194)
ln Real Exchange Rate $_{dr(t-1)}$	1.480**	1.064*	1.331**	1.662***	0.791	1.064*
	(0.718)	(0.636)	(0.659)	(0.627)	(0.817)	(0.636)
RTA$_{dr(t-1)}$	16.94***	16.55***	16.74***	16.47***	16.54***	16.55***
	(1.060)	(1.066)	(1.080)	(1.061)	(1.080)	(1.066)
Retaliation$_{rd(t-1)}$	-0.0700	-0.0567	-0.0467	-0.0598	-0.0237	-0.0567
	(0.0670)	(0.0454)	(0.0581)	(0.0556)	(0.0471)	(0.0454)
New Donor$_{r(t-1)}$	-11.92**	19.36***	20.28***	19.74***	18.90***	19.36***
	(5.182)	(2.231)	(2.182)	(2.952)	(2.174)	(2.231)
Constant	-43.98***	-31.89***	-31.99***	-33.84***	-31.16***	-31.89***
	(8.201)	(4.930)	(4.483)	(4.926)	(7.049)	(4.930)
Observations	1,446	1,551	1,533	1,533	1,533	1,551
R^2	0.657	0.840	0.858	0.845	0.855	0.840

Dependent Variable - Number of contingent protection *Cases*. Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$. China (CHN), India (IND), Mexico (MEX), Brazil (BRA) and Argentina (ARG)

Box 2 - The case of Shrimp imports

In December 2003, the US Department of Commerce (DOC) published a notice of its final determination of sales at Less than Fair Value (LTFV) in its investigation of certain frozen and canned warm-water shrimp from Brazil, China, Ecuador, India, Thailand and Vietnam. This determination was made as a consequence of the petition filed by the Southern Shrimp Alliance (SSA)[a]. Showalter (2004) suggests that the US shrimp industry's response to rising imports from developing countries had been influenced by recently 'successful' Anti-dumping actions of the US in craw-fish tail-meat against China (1997), and catfish against Vietnam (2002). In the catfish case, the subject imports were not in fact catfish fillets rather similar freshwater fish grown in the Mekong delta of Vietnam. However, in this case, Anti-dumping duties ranging from 36.84% to 63.88% were applied on the premise of being 'similar' product.

In July 2002, the US DOC announced duties ranging from 0 to 67.80% for Brazil, Ecuador, India and Thailand. These duties were as high as 93.13% and 112.81% for non-market economies Vietnam and China respectively. This politically charged petition came at a time when domestic shrimp industry could meet only 20% of the US shrimp demand and supply of naturally available shrimp remains finite. The US shrimp industry which was wavering on the brink of collapse used the contingent protection measures to target developing nations which were not really indulging in unfair trade practices but only catering to the US demand of shrimps by accessing open channels of trade (Owusu-Kodua, 2016; Showalter, 2004; Simi, 2008).

Five out of the six target countries (China, Ecuador, India, Thailand and Vietnam) approached the WTO Dispute Settlement Board (DSB). Ecuador was the first country to approach the DSB in 2005 and China was the last country to do so in 2013. The length of time elapsed since the Anti-dumping duty was first initiated by the US in 2002 to the final recommendation by the panel - in which they concluded that the US DOC had acted inconsistently in its final determination of sales at LTFV in 2002 - exhibit the tedious pace of procedure in protection based cases and disputes. It is also worth noting that developing countries may not always have the wherewithal to contest costly disputes in the WTO.
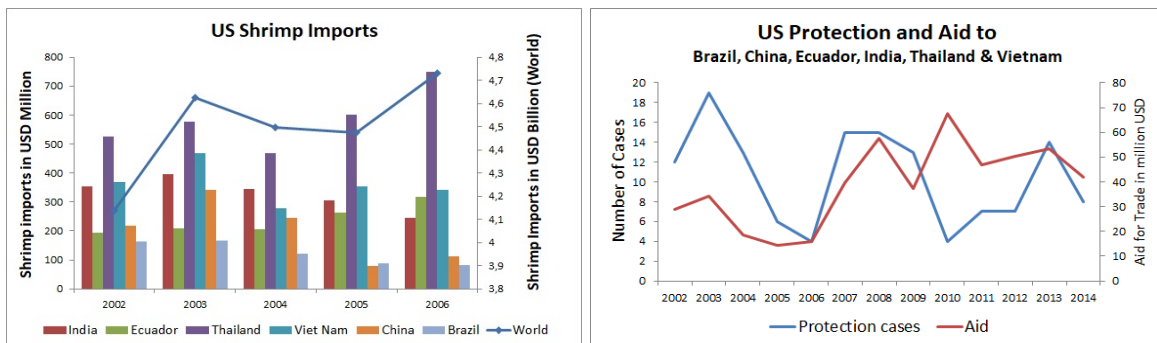

Figure C.5: (a) US Shrimp imports from the 6 countries facing Anti-dumping duties (b) US Protection and Aid

This protectionist measure came at a time when the AfT initiative (which was not yet named or formalised) was gathering momentum and developed nations increasingly voiced their agreement on helping developing nations to climb up the trading ladder by opening their economies and deploying technology and institutions which lowered trading costs. From Figure C.5 it is observed that US AfT to the aforesaid six developing countries has for most years followed a similar trend of the contingent protection cases by the US against these countries.

While a causal link cannot be established based on this premise, a correlation is definitely seen between the incidences of protection cases and the commitment or disbursement of AfT. According to critics, this, of course, came at a cost of being held hostage to sticking points over trade and economy.

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[a]www.shrimpalliance.com

Box 3 - Domestic subsidies with international aid - the two edged sword of US cotton industry

At a time (2002-2003) when global cotton output averaged USD 25-30 billion, the USA doled out subsidies to its domestic cotton industry to the tune of USD 2-4 billion. The cotton subsidies alarmed some developing countries for whom cotton is a substantial part of their export earnings. This raised questions on the issues of trade fairness but also on the obstruction this created to the causes of development and poverty alleviation (Baffes, 2011). Brazil filed a case at the WTO Dispute Settlement Body (DSB) in September 2002 and was later joined by Benin and Chad as third-parties[a]. Exactly one year after Brazil had filed their dispute, in September 2003, thousands of trade negotiators, politicians, lawyers, NGOs and activists congregated in Cancun, Mexico. In what followed the several negotiation rounds, a framework text was circulated which iterated the USA's demands - (1) elimination of cotton subsidies must be part of a multilateral effort, (2) broader reforms were necessary to address the distortions in the textile and synthetics sectors, and (3) multilateral donor institutions should assist the African countries with technical and development assistance. The USA and Brazil finally reached an agreement to end the cotton dispute in January 2014. Under a Memorandum of Understanding (MoU) signed between the parties, the USA agreed to pay USD 300 million to the Brazilian Cotton Institute (IBA) and in return Brazil agreed not to bring new WTO actions against USA cotton support programs while the current USA Farm Bill is in force or against agricultural export credit guarantees under the GSM-102 program[b] as long as the program is operated consistent with the agreed terms. The 2014 MoU provides for additional support for the technical assistance and capacity building activities begun under an earlier 2010 MoU with Brazil (Goldberg et al., 2004; WTO, 2014).

The Brazil-US cotton dispute does highlight the fact that resolving the dispute through financial compensation (offered as technical assistance and AfT) may create collateral damage, unless such compensation takes place in a non-distortionary manner (Baffes, 2011). However, the agreement between US and Brazil did expose the strengths and limitations of the WTO dispute settlement system . A trade war was averted and a less powerful member of the WTO did find voice for a case against the WTO. However, many countries may not be successful in taking their case at the WTO and even if they do, after prolonged legal battles, these countries (in this case Brazil) have to settle with financial assistance in return for future abstention from using provisions under the WTO.

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[a]West African countries of Benin, Burkina Faso, Mali, and Chad estimated that depressed cotton prices cost them a combined average of USD 250 million a year in lost revenues. However, despite much persuasion from NGOs like OXFAM, that provided consulting services to developing countries on trade and development issues, only Benin and Chad joined Brazil, only as third-party signatories (Goldberg et al., 2004)

[b]The GSM-102 program provides credit guarantees to encourage financing of commercial exports of US agricultural products.

Box 4 - Bitter honey : Anti dumping duties on honey imports from Argentina

If they really wanted to help Argentina, what they would do is not so much lend us money, but let us sell what we produce.

José Ignacio de Mendiguren, Argentine Minister of production, on the Bush administration (2001)

At the end of year 2001, the US DOC announced the imposition of steep anti-dumping duties against honey imports from Argentina and China ranging from 32.6% to 183.8%, and a countervailing duty against Argentina of 5.9%. At that time, on one hand were the US bee-keepers - who had a long history of receiving subsidies; and on the other hand the Argentinian bee-keepers who had managed to increase their share in world honey exports from 14% in 1990 to 24% in 2000 (Nogues, 2003)[a].

In the same period, aid from the US to Argentina increased 300% (from USD 1.04 million in 2000 to USD 4.16 million in 2001)[b]. In 2002 it dropped to a meagre 17% of its value in 2001. The corresponding numbers in the AfT category were USD 0.81 million in 2001 (37% increase from the previous year) which dropped to USD 0.31 million in 2002[c]. We see a clear increase of aid, specially AfT, in the same year that the US launched its Anti-dumping case against Argentinian honey. Subsequently, after a decade of duties on Argentina, in September 2012, the US DOC revoked the duties[d]. This same year saw a surge in AfT by 37% and then a progressive decline in the growth rate till 2015.

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[a]Chinese exports of honey were subjected to Anti-dumping duties to the tune of 157% from the US in 1994-1995. It is at this juncture that honey exports from Argentina took off - not only to the US but to other export markets like Germany too (who had not imposed any duty on Chinese honey). In the meantime, China had to sign an 'agreement' to restrict the volume of honey exports to the US to 20,000 tons per year (Nogues, 2003)

[b]Refer Appendix C Table C.6 for details

[c]We are constrained by the unavailability of AfT data before 2000 both from the OECD source and US Aid.

[d]The US DOC continued the duties on honey imports from China.

Table C.6: US Aid to Argentina. 2000-2018

Year	Total Aid (USD million)	% change from previous year	Aid for Trade (USD million)	% change from previous year
2000	1.04	76%	0.59	70%
2001	4.16	300%	0.81	37%
2002	0.71	-83%	0.31	-61%
2003	1.47	109%	0.14	-53%
2004	3.27	122%	0.23	65%
2005	2.07	-37%	0.30	29%
2006	3.66	77%	0.24	-21%
2007	12.18	233%	7.56	3045%
2008	9.68	-21%	6.22	-17%
2009	5.25	-46%	1.40	-77%
2010	9.7	85%	3.63	158%
2011	20.72	114%	0.63	-82%
2012	14.6	-30%	0.86	37%
2013	4.92	-66%	1.04	21%
2014	4.1	-17%	1.07	3%
2015	2.89	-29%	0.77	-28%
2016	7.82	170%	0.81	5%
2017	4.37	-44%	1.15	43%
2018	8.67	99%	3.18	175%

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