

**The Effects of Anti-dumping Investigation Initiations and Outcomes:
Evidence from Five EC and Indian cases**

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The existing literature on trade diversion has focused on the effects on U.S. or EC imports of being named in an AD investigation. The results have shown that the diversion of imports from named to non-named countries in the U.S. (and less so in the EC) suggests that domestic producers are not the only ones to gain from AD investigations and measures; competing exporters will pick up the trade lost to those named in the investigation.

This paper's contribution will be to examine specifically the effect of the EC's AD regime on Indian exports to the EC and conversely, the effect of India's AD regime on EC exports to India. This paper will seek to answer the following questions: Is trade diverted away from India (EC) when it has been named in an EC (Indian) investigation to one that is not named? Is this effect mitigated by the gains when it is an exporter but not named in the investigation?

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INTRODUCTION

Anti-dumping ‘reform’ was one of the most controversial issues negotiated during the Uruguay Round. The increase in the use of anti-dumping in the 1990s sparked concerns that governments were substituting opaque devices for more transparent ones in an effort to protect their domestic markets. Some developing countries have argued that the use of contingent protection devices abroad makes them vulnerable to reductions in market access given by industrialised countries. In contrast, industrialised countries argue that domestic protection from developing countries’ imports in particular, is the key to gradually liberalising markets.

Though anti-dumping (“AD”) is one of the main items for discussion in the next trade round, it is optimistic to believe that any substantial reform to the agreement will occur. In addition to existing resistance from industrialised countries, developing countries (now large users of AD) may now be rethinking their original argument in favour of tightening the agreement. While it is true that industrialised countries still initiate the greatest number of cases (a significant number of which are in response to exports from developing countries), developing countries have now discovered the usefulness of AD policy in controlling imports.

The existing literature on AD paints a convincing picture of why the loopholes in the Anti-dumping Agreement (“ADA”) should be tightened. However, despite the number of convincing economic arguments, the number of users globally has increased. Perhaps one strand of literature that could change this pattern is further research in the area of trade diversion. Contributions to research on trade diversion have focused on the effects of being named in an EC or U.S. AD investigation. The results from the analyses for U.S. investigations suggest that the diversion of imports from named to non-named countries not only benefit domestic producers but competing world exporters also pick up the trade lost to those named in the investigation. The results are less clear in the analyses undertaken for the effects on trade of EC AD investigations.

This paper’s contribution will be to examine specifically the effect of the EC’s AD regime in 4 cases involving Indian exports to the EC and conversely, the effect of India’s AD regime in 1 case involving EC Member States’ exports to India. This paper will seek to answer the following questions: Is trade diverted away from India (EC) when it has been named in an EC (Indian) investigation to one that is not named? Does the outcome of the investigation matter more than its initiation? Which outcome has the greatest impact on trade i.e. duties, negative findings, or undertaking?

In view of these objectives, this paper will be organised as follows: Section A will review the recent trends in North-South AD activity. This section will also highlight the explicit targeting of the EC (India) against exporters from India (EC) and vice versa. Section B will provide an overview of the anti-dumping law of the EC and India, making special note of similarities between the procedures undertaken by the investigating authorities. In Section C, I estimate the trade impact of specific EC (Indian) AD cases on exports from India (EC) and other large exporters, specifying whether the EC (India) is a named or not-named party to an investigation. In Section D, I present the results of the estimations and Section E offers some concluding remarks and suggestions for future research.

A. RECENT TRENDS IN ANTI-DUMPING USE

1) Spread Of Anti-Dumping Use

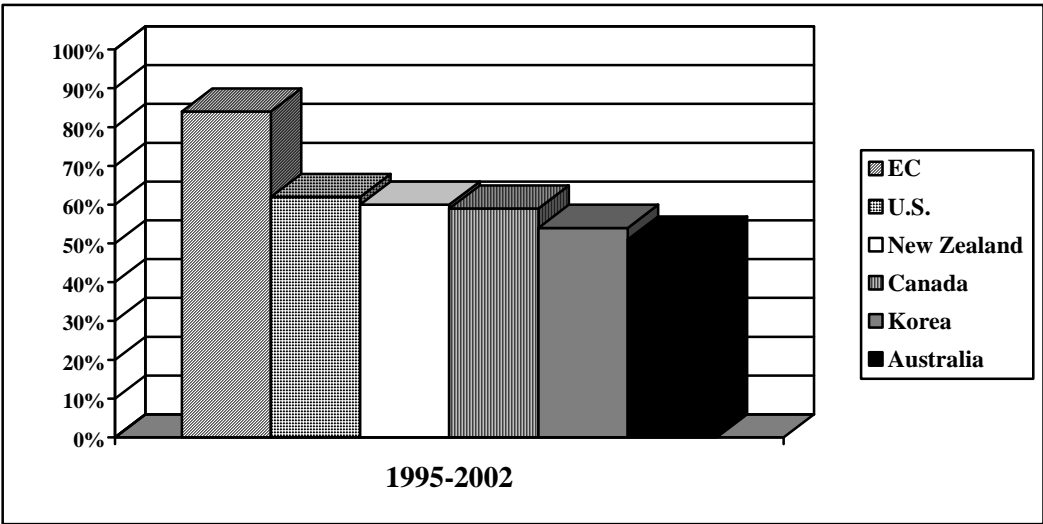
The surge of AD measures during the 1990s has been attributed by some to the ‘sanctioning’ of AD as a form of contingent protection mechanism for countries facing import competition: “International agreements now give sanction to expansions of coverage that were first won in domestic politics. In the end, international rules on AD do not control the power of protection-seeking interests – they are an expression and application of that power” (Finger and Dhar, 1994: 331). By 1999, the number of AD cases accounted for 86% of all types of contingent protection devices used by WTO Members. Today, developing countries surpass the traditional users (the U.S., the EC, Canada, and Australia) with respect to the number of cases filed. In particular, India, South Africa, Mexico, Argentina, and Brazil now initiate over 50% of all AD investigations. India’s share of global AD measures increased by over seven percent between 1997 and 2001 to a total number of 263 cases by July, 2001. South Africa and Argentina’s share of total AD measures levied also rose between two and three percent during the same period. Though industrialised countries are still the largest users by the number of cases initiated since AD’s inception, the rate at which these are being initiated is dropping (by approximately 3.5% overall within the largest users).²

Specifically, a large number of cases initiated by industrialised countries are against exports from developing countries. Sixty-one percent of cases initiated against exporters from developing countries (“DCs”) and Least-Developed Countries (“LDCs”), are filed by industrialised countries. In comparison, developing countries and LDCs initiate cases against the firms of industrialised countries in only 38% of all cases; the majority of cases are against other DCs or LDCs. For example, the measures against Chilean, Brazilian, and Kazakhstani

² Source: WTO Antidumping Database, www.wto.org

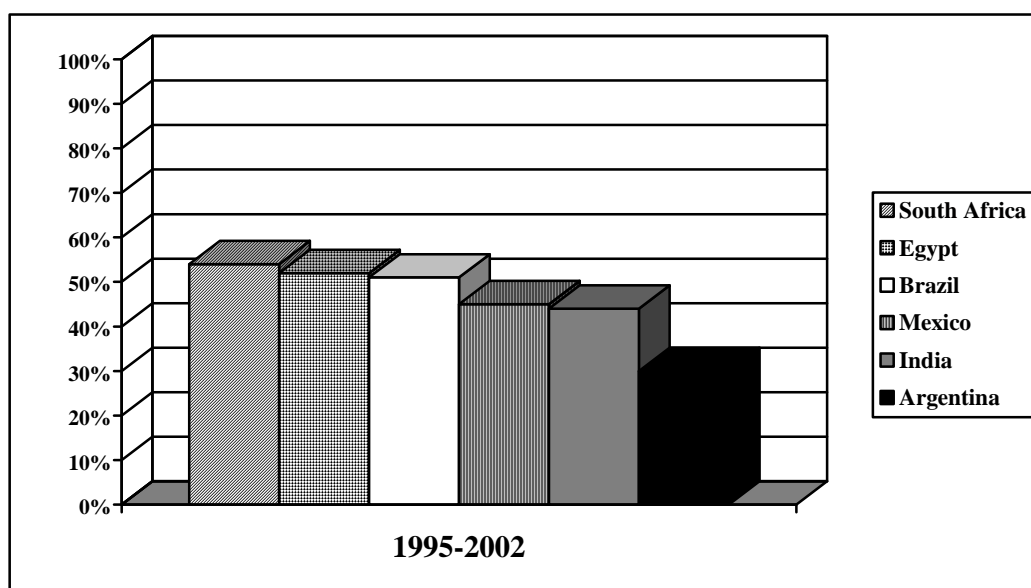
companies originated from other developing or least-developed countries three-quarters of the time. China was the affected party in nearly 56% of all cases initiated by developing countries, and in particular, it was the affected party in nearly 25% of all cases initiated by India. In addition, Argentina levied 33% of its measures against other Latin American companies. This may suggest that either developing countries and LDCs do not wish to take on the large countries, or they are using AD as a protectionist tool against each other.³ The following two charts identify some of the trends of the larger users in both the industrialised and developing economies. The first chart totals the number of cases initiated by industrialised countries against firms in developing and least-developed economies while the second chart summarises the opposite trend:

**Percentage of Investigations against Developing Countries and LDCs,
by selected jurisdiction
1995-June 2002**



³ In fact, other DCs and LDCs imposed measures against Chile, Brazil, and Kazakhstan in 75% of the cases against them (between 1995-2001). China was the affected party in 56% of all cases initiated and in particular, she was the affected party in nearly 25% of all cases initiated by India.

**Percentage of Investigations against Industrialised Countries,
by selected jurisdiction
1995-June 2002**



Eighty-four percent of all cases initiated by the EC are against DCs and LDCs, a significant difference from the number of cases initiated by the other industrialised nations. Moreover, the EC initiated 77%⁴ of all cases against Polish exporters, 56% of all cases against Indian firms, and 45% of all cases against Malaysian firms. The number of measures levied against India has more than doubled since 1997; Indian companies are subject to more than three percent of all anti-dumping measures levied. Indian goods are affected by duties imposed most often by the EC (25), South Africa (15), the U.S. (11), and Indonesia (eight).

India initiated AD cases against industrialised countries and, in particular, against the EC (22), Korea (18) and Japan (16).⁵ In fact, these Indian cases against EC represent 63% of all cases against the EC between 1995 and 2002. The number of cases against the EC increases if Member States are counted individually.

India levies measures predominantly in the chemicals sector (44%), while the balance is made up of the other four sectors (base metals, machinery and equipment, plastics, and textiles). The EC imposes measures mainly against firms in the base metals sector (29%), the machinery and equipment sector (23%) and chemicals sector (18%).

⁴ Of the total amount of cases initiated by industrialised countries.

⁵ Of the 120 cases initiated by India against industrialised countries.

2) Recent Contributions

A large body of empirical work on anti-dumping activities has been undertaken during the last ten years in an effort to estimate both the distributional and welfare effects of such policy. The following section will provide a brief overview of some of the recent contributions.

Empirical studies confirm that increased imports raise the probability of protection (see Moore, 1992; Baldwin and Steagall, 1994; Hansen and Prusa, 1996). More specifically, the literature has examined the effects of AD measures on imports and on domestic production as well as the resulting welfare effects of these policies. The traditional way of analysing these effects is by using partial or general equilibrium models (Morkre and Kelly, 1994; Devault, 1996; Kelly and Morkre, 1998; Gallaway et al., 1999). Gallaway et al. estimate that the (static) welfare loss to the U.S. ranges from \$2-4 bn annually for using trade remedies. In addition, a U.S. International Trade Commission study⁶ (1995) estimates that the removal of outstanding AD/CVD orders (in 1991) would have resulted in a welfare gain to the U.S. economy of \$1.59 bn. These estimates represent only a lower bound since only cases where definitive duties were levied were chosen for analysis. More generally, the approach taken by researchers has been to quantify the determinants of protection⁷ or to estimate the effects of antidumping initiations and outcomes.⁸

Empirical estimations of the effects of AD policy have focused not only on the effects of measures, but also of the initiation and the expectation of an investigation. Krupp and Pollard (1996) examine the effect of the investigation event on chemical imports subject to U.S. AD investigations from 1976 to 1988 and find that there are strong behavioural responses to AD investigations but that these responses are not uniform given the final outcome. Blonigen and Ohno (1998) also argue that the anticipation of protection itself has an effect on imports.

While this body of literature suggests that trade flows are affected by trade protection devices, few analyses have been made of possible trade diversionary effects as a result of both measures and investigations. Staiger and Wolak (1994) estimate substantial reductions in trade during an investigation and for cases resolved through an undertaking. It is suggested

⁶ US ITC (1995) "Economic Effects of AD and CVD Orders and Suspension Agreements," Publ. 2900, June 1995. The ITC used a CGE model to measure the economy wide effects of AD and CVD orders currently in effect.

⁷ Baldwin (1985), Goldstein and Lenway (1989), Moore (1992), DeVault (1993), and Baldwin and Steagall (1994)

⁸ Finger, Hall and Nelson (1982), Harrison (1991), Hansen and Prusa (1996)

that some firms file petitions just to capture these procedural trade-restricting effects. Staiger and Wolak found that during an investigation, imports from named countries are restricted one-half to one-third more than total imports. Moreover, Prusa (1996) suggests that the amount of trade affected is larger as most of the protective effect of U.S. anti-dumping duties is offset by an increase in imports from non-named countries. In contrast, in their examination of EC AD-investigations initiated between 1985 and 1990, Vandebussche, Konings and Springael (1999) find that trade diverted to non-named countries does not mitigate the effects of anti-dumping actions as much as in the U.S. Having said that, Brenton (2000) finds a significant increase in the volume of imports from non-named suppliers in the second year of the investigation and a corresponding fall in imports from named countries. In addition, the trade diversion to non-named countries is greater when three or more countries are named. The finding of trade diversion in Brenton's analyses could be related to the greater number of cases initiated during the early 1990s (in Brenton's study, initiations between 1989 and 1994 were chosen).

Finally, Prusa (1999) provides the point of departure for this paper. Prusa forms a panel of products which have been affected by U.S. AD investigations and outcomes. He finds that AD actions have a significant effect on imports from named parties. Prusa estimates that import quantities fall by almost 70% and import prices rise by more than 30% when an AD case is initiated. This finding suggests that investigations themselves are useful for harassing importers. Moreover, even when a case is eventually rejected, Prusa estimates that imports fall by about 20% for parties named in an investigation.

The following section briefly outlines the AD law of the EC and India. Not only does it clarify the procedural steps of an investigation but it also highlights some of the similarities between the laws of both countries.

B. THE ANTI-DUMPING LAW OF THE EUROPEAN COMMUNITY AND INDIA

1) The European Community Law - Overview

The anti-dumping law of the EC, outlined in Regulation 384/96⁹, was amended to incorporate the disciplines of the ADA together with the interpretation of these rules set out in the 1994 Anti-dumping Code of the WTO. In the EC, Regulation 384/96 splits the administration of AD enforcement between the Commission and the Council. All AD

⁹ *Official Journal of the European Communities* (hereafter *OJ*), 1996 L56 (June 3): 1-21, as amended by Regulation 2331/96, *OJ*, 1996 L317 (June 12): 1-2.

investigations and the imposition of provisional duties are the responsibility of the Commission. In order to eliminate the injury caused by dumped imports, the Commission may either enter into a price undertaking with the foreign firm or impose provisional duties pending a full investigation. Price undertakings are commitments by foreign firms to match the price set by the European producer of the ‘like product’ in the Community market.¹⁰ If the Commission decides not to seek a price undertaking, the Council can adopt definitive duties by a simple majority.¹¹ If the Commission determines that an investigation should be terminated, it will submit its findings to the Council, that decides on this issue with *qualified* majority voting. If a domestic firm wishes to appeal the Commission’s decision, it must provide new evidence that warrants the opening of a new case, or it must provide additional evidence to open an interim review.

The time limits involved with an EC anti-dumping investigation are 45 days for the acceptance or rejection of complaints, nine months for the imposition of provisional duties, and 15 months for the conclusion of investigations.

a) Steps in an EC Anti-dumping Investigation

i) Petition

Proceedings can be initiated by the Commission or by a Member State, but in reality they are only initiated following a complaint by “any natural or legal person, or any association not having legal personality, acting on behalf of the Community industry” (Art. 5:1, subparagraph 1). Under Art. 5.4 of the ADA, the injured party/parties must have at least 50% market share (taken together) in the Community market and must account for at least 25% of total domestic production.¹² This petition contains information on the product, the export market, competitors, prices, quantities, profits, employment etc.; legitimate factors, as listed in Art. 5.2 of the ADA, in determining whether dumping has occurred.

ii) Investigations

¹⁰Bourgeois and Messerlin (1998). The number of cases resolved through price undertakings has decreased substantially. Between 1980 and 1994, the EC resolved 168 cases through undertakings with an average margin of dumping of 32.50%. Between 1994 and 1997, there was only one undertaking with a margin of dumping of 10.6%. The decrease could have been due to the ECs new WTO obligations: Though the use of undertakings is permitted under the ADA, the economics of undertakings should dissuade even the most casual user.

¹¹ Bourgeois and Messerlin (1998) point out that normally under Art. 113 of the EC Treaty, the Council acts by qualified majority on a proposal from the Commission. However, in anti-dumping investigations, the Council acts by simple majority in adopting definitive duties (Art. 9:4) – as decided in the *General Affairs Council Meeting, 15 Dec 1993* by French initiation. This has the obvious effect of making it easier to impose anti-dumping measures.

¹² This method is obviously biased towards oligopolies or monopolies in the market. It also discriminates against large exporting companies who have a small domestic market (i.e. Hong Kong or Singapore).

Unlike the U.S. International Trade Commission ('USITC'), which must hear every case, the Commission has a great deal of discretion in its decision-making. It can reject petitions if the evidence does not create a *prima facie* case for dumping. Since the proceedings are not transparent, it is difficult to know how many petitions are rejected at this stage.¹³ The preliminary investigation usually leads to the imposition of provisional duties that must be imposed no later than 9 months from the initiation of the proceedings (Art. 7:1). The final phase, whereby the Council imposes definitive duties, is usually used to refine the findings made in the preliminary investigation. Definitive duties must be imposed no later than 15 months from the initiation of the proceedings (Art. 6:9).

iii) Screening: Determination of Dumping

In contrast to the bifurcated approach of the US and Canada, the Commission determines both the dumping margin and the injury. Prior to the Tokyo round, the practice established for measuring the dumping margin was a price comparison between the domestic price in the Community and the export price of the foreign supplier. However, the Tokyo Round extended the practice to include measures of cost dumping: A comparison between the costs (total costs) of production in the Community plus a measure of expected profit, and the export price of the foreign supplier. This comparison must be made at the same level of trade, normally at the ex-factory level. Due allowance must be made for differences in conditions and terms of sale, taxation, levels of trade, quantities, physical characteristics, etc. which may affect price comparability. The first step in the determination of dumping by the Commission is an examination of whether the products are 'like.' This information is usually provided in the petition and the Commission typically does not undertake any further analysis.¹⁴ The second step of the analysis is the determination of the 'normal value.' If the Commission is unable to determine a 'normal price' due to the existence of a non-market economy, it calculates a 'constructed value.' Art. 2:3 (b) (ii) of the Basic Regulation provides that in the absence of the necessary components of normal value, the 'reasonable' amount of selling, general and administrative expenses and profit shall be calculated. In these situations, the Commission does not consider as valid, prices of the non-market economy and uses a proxy country in order to determine the 'normal price.' This proxy is usually inflated due to

¹³ According to Bourgeois and Messerlin (1998), too many complaints of poor technical quality slip through the process. However, Eymann and Schuknecht (1996) estimated that the rejection rate at this stage is generally considered to be higher than 50% (Notes 9, p.16).

¹⁴ The determination of "like products" is not given by the four-step analysis outlined by the jurisprudence of the WTO (*Border Tax Adjustment, 1970; United States – Gasoline, 1996; EC – Asbestos, 2000*). Rather, it is given by a comparison of physical and technical characteristics and end use.

the nature of the determination. The third step is the determination of the export price that is then adjusted in the fourth step to ensure comparability. The EC then calculates the dumping margin as the difference between the ‘normal value’ or ‘constructed value’ and the adjusted export price.

iv) Existence of Injury

The Commission then undertakes to measure various indicators of injury within the domestic market. WTO Panels, supported by the Appellate Body, have held that all 15-injury factors mentioned in Art. 3.4 of the ADA must be taken into consideration.¹⁵ These include lower profits, rising unemployment, increased capacity of products, idle capacity of production, etc. Not all 15 factors have to point to injury, but they must be evaluated and published. Injury is then determined, on a case-by-case basis, using the above indicators. Under the law of the EC and the WTO, the principal cause of material injury, or the threat of material injury, should be dumping. Under Articles 3.5 of the ADA, authorities must examine other factors that may be injuring the domestic industry before concluding that dumped imports are causing material injury within the meaning of Articles 3.2 and 3.4 of the ADA.¹⁶ However, this is rarely the case since the practice has been that if both injury and dumping exist, they are *ipso facto* related. In the EC, the ‘lesser duty rule’ is employed meaning that the level of AD duty is limited to the amount required to eliminate the injury to the EC industry, if this is less than the margin of dumping.¹⁷ This shifts the emphasis from dumping to injury. The EC often cumulates countries in its determination of injury and continues to adhere strictly to the 3% *de minimis* volume of imports.

v) Community Interest (Art. 21)

A final consideration is whether the imposition of anti-dumping measures will be against the interests of the Community. If the interests of consumers or importers are unduly hurt by the imposition of the measure, or if competition is compromised, the Commission can in theory, dismiss the case. However, since this step is only taken after injury has been established, it is rarely used and is politically costly.

¹⁵ See *Mexico – Anti-dumping investigation of high fructose corn syrup (HFCS m) from the United States*, 28 Jan 2000 Panel Report and *European Communities – Anti-dumping duties on imports of cotton-type bed linen from India*, 30 Oct 2000 Panel Report

¹⁶ See *United States – Anti-dumping measures on certain hot-rolled steel products from Japan*, 28 Feb 2001 Panel Report.

¹⁷ Art. 13:3 Council Reg 2423/88.

2) Indian Law – Overview¹⁸

The Customs Tariff Act, 1975 and 1995 (Sections 9A, 9B, and 9C), and the Customs Tariff Rules (Identification, Assessment and Collection of Anti-dumping Duty on Dumped Articles and for the Determination of Injury), 1995, form the legal basis for AD investigations and the imposition of definitive measures in India. Domestic laws were amended in order to comply with the rules set out in the ADA. The Ministry of Commerce in India investigates and makes recommendations whilst the Ministry of Finance imposes and collects the duties. This is similar to the role played by the Commission and the Council respectively, in the EC.

a) Steps in an Indian Anti-dumping Investigation

i) Petition

An application can be made by the concerned domestic industry to the “Designated Authority” in the Ministry of Commerce. Once the evidence is examined, the Designated Authority decides whether to continue with an investigation within 20 days. If sufficient evidence is provided, a Public Notice is issued normally within 45 days of the application (similar to the procedure of the EC).

ii) Investigation

Indian law establishes that the Designated Authority may issue a preliminary finding within 150 days of the date of initiation. In addition, a provisional duty may be imposed (not exceeding the margin of dumping) 60 days after the initiation and remain in force for a period not exceeding 6 months (but in some cases extendable to nine months). This differs from the EC procedure where nine months is the rule. Interested parties can present information orally. The investigation period must be concluded within one year of the initiation but may be extended for six months if necessary. Again, EC law gives the Commission 15 months to conclude its investigation.

iii) Screening: Determination of Dumping

The determination of dumping by the Designated Authority follows the rules set out in the ADA and the method employed by the Commission. If the reliability of the export price is questioned, the Designated Authority may use the representative export price to an appropriate third party or it may calculate the cost of production in the country of origin plus

¹⁸ This section draws from “Anti-Dumping – a guide”, published by the Directorate General of Anti-Dumping & Allied Duties, Ministry of Commerce, Government of India. Available at <http://commerce.nic.in>

some administrative costs and profits. In addition to calculating the margin of dumping as the comparison of normal values and export prices on a transaction-by-transaction basis, the Indian authorities sometimes employ a comparison of weighted average normal value with a weighted average of prices of comparable export transactions. This procedure is employed when the Authority views a pattern of export prices that differ among different purchasers, regions or time periods.

iv) Existence of Injury

Indian authorities examine the impact of both volume and price increases of imports in the determination of injury. As mentioned above, WTO Panels and the Appellate Body have held that all 15-injury factors in Art. 3.4 of the AD Agreement must be considered but, like EC law, “it is not necessary that all the factors considered relevant should individually show injury to the domestic injury.”¹⁹ The causal link between dumping and injury must also be established but once again, it is assumed they are *ipso facto* related. Indian law also provides for a ‘lesser-duty rule’. Investigations against exporters must be terminated if the volume of ‘dumped’ imports is less than three percent from an individual country and not more than seven percent cumulatively. The investigations must also be terminated if the margin of dumping is less than two percent of the export price. Investigations may also be terminated if the exporter agrees to enter a price undertaking. If duties are imposed they are valid for five years from the date of imposition and subject to periodic reviews.

v) Particularities

Indian legislation allows the retrospective imposition of AD duties if there is a history of dumping causing injury or if massive dumping causes the injury. The retrospective application must not go beyond 90 days of the imposition of the provisional duty and not before the initiation of the investigation. In addition, products imported by units in Export Processing Zones (“EPZs”) and 100% Export Oriented Units (“EOUs”), as well as Advance Licence Holders, are exempted from AD duties.

This section has established that EC and Indian laws have many common elements. In the next section, I will examine the effects of these laws and procedures in five AD initiations by the EC and India.

¹⁹ <http://commerce.nic.in/Anti-Dum.pdf>

C. IMPACT OF ANTI-DUMPING INVESTIGATIONS

AD initiations and outcomes affect both named and unnamed parties. To date, there has not been an investigation of the effects of AD policies in leading developing countries. In this section, I will estimate the effects of AD initiations and outcomes of investigations in four EC cases in which India is a named party or a significant exporter, and one Indian case in which the EC is a named party since 1990. Ideally, the effect of AD investigations and measures should be done across a greater number of products. However, because of limitations in studying post investigation data, this paper will only examine cases initiated before 1997.

This analysis will examine the following three hypotheses:

- Whether AD investigations have an impact on trade;
- Whether different outcomes of investigations (duties, undertakings, or negative finding) have differential effects;
- In cases where there are multiple investigations in the same product, this analysis will examine whether the second investigation has differential effects than the first investigation.

In order to examine these three issues, data is collected for four products investigated by the EC and one product investigated by India. For each product, a panel data set is formed with imports into investigating jurisdiction from each major exporter. These trade flows were observed for three years before the first investigation and up to three years after the latest investigations (noting that not all products have two investigations).

1) Data Collected

The data set is collected for the five different samples of European²⁰ and Indian AD-investigations initiated between 1990 and 1997. Within this set, cases were chosen where India (EC) was a significant exporter to the EC (India). From these, cases were chosen in which two investigations occurred. If not, cases were chosen based on the availability and reliability of data. For the purpose of this paper, the EC cases chosen were investigation of two products in which India was named (Textile yarn, Synthetic fibres) and two products in which India was not named but was a significant exporter (Cycles, Steel tubes and pipes).

²⁰ For the purposes of consistency, this paper examines only the imports from the EU-12 countries. In addition, the member countries are treated as one importer since they share a common customs regime. In contrast, AD measures levied against producers are country-specific. Each member state is considered a unique exporter to India.

The Indian case chosen was an investigation into one product in which the EC was named in the investigation (Graphite electrodes).

For each investigated product, annual bilateral import data was collected from Statistics Canada's STATCAN international trade database. Import values by country of origin were collected for a maximum of 15 years starting three years before the initiation of the investigation and terminating three years after the conclusion of the second investigation (if any).²¹ The year of initiation is represented by t_0 .

In order to construct a full time series for the EC and India and, due to the lack of specificity in the Indian data, three to four digit level SITC Rev.2 is used for consistency.²² In the investigations in cycles and graphite electrodes, I was able to find a four-digit line in the database that best corresponded to the product in question. In the textile yarn, synthetic fibres, and steel tubes and pipes, I used three-digit product codes to be sure all trading activity was covered. I appreciate that trade other than the products under investigation may be included; this is an important caveat to the findings found below. In addition, due to implausible variations in imports from the countries of the Former Soviet Union and Former Communist Europe, all import data from these countries was removed from the panel to ensure quality and consistency.

2) Products

The five products investigated here are as follows:

a) EC Investigation where India is a named party

i) Case 1.1: Synthetic Fibres suitable for spinning (266 SITC Rev.2)

EC Case/Reference Number: 54/93, published 08.01.93.

Investigation Details: Initiated 09.01.90 on exports from India and the Korean Republic of synthetic fibres.

Results of Investigation: India – Duties, Korean Republic – Duties.

Case 1.2: Synthetic Fibres suitable for Spinning (266 SITC Rev.2)

EC Case/Reference Number: 1490/96, published 23.07.96.

²¹ In the case where there is just one investigation, the data was observed for three years following the investigation.

²² Despite the fact that the data is specified to the eight-digit HS code in the EC. Less aggregated data would capture these effects more accurately, however, due to the lack of specification in Indian reporting, it is not possible to disaggregate further at this stage. The results of this exercise will be tighter in the future when it is possible to disaggregate Indian imports to the six-eight digit level.

Investigation Details: Initiated 08.01.94 on exports from Belarus of synthetic fibres.

Result of Investigation: Belarus – Duties.

* The effects of this case not estimated since exporters from Former Soviet Union excluded from this analysis.

ii) Case 2.1: Textile Yarn (651 SITC Rev.2)

EC Case/Reference Number: 830/92, published 30.03.92.

Investigation Details: Initiated late in 1990 on exports from China, India, Indonesia, Taiwan (China), and Turkey of polyester yarn imports.²³

Results of Investigation: India – Duties, China – Duties, Indonesia – Negative finding, Taiwan (China) – Duties, and Turkey – Duties.

Case 2.2: Textile Yarn (651 SITC Rev.2)

EC Case/Reference Number: 2160/96, published 11.11.96.

Investigation Details: Initiated on 07.01.94 on exports from India, Indonesia, and Thailand of polyester fibre imports.

Results of Investigation: India – Negative finding, Indonesia – Duties, Thailand – Duties.

b) EC Investigation where India is not a named party but a significant exporter

i) Case 3.1: Cycles (7852 SITC Rev.2)

EC Case/Reference Number: 2474/93, published 08.09.93.

Investigation Details: Initiated 07.01.91 on exports from China and Taiwan (China) of cycles.

Results of Investigation: China – Duties, Taiwan (China) – Negative finding.

Case 3.2: Cycles (7852 SITC Rev.2)

EC Case/Reference Number: 648/96, published 28.03.96.

Investigation Details: Initiated 02.01.94 on exports from Indonesia, Malaysia, and Thailand of cycles.

Results of Investigation: Indonesia – Duties, Malaysia – Duties, and Thailand – Duties.

²³ Lack of specificity due to lack of published information regarding the exact date of the initiation of the investigation.

ii) Case 4.1: Steel, tubes and pipes (679 SITC Rev.2)

EC Case/Reference Number: 93/260/EEC (undertaking) as a result of definitive measures briefly imposed and published in 1189/93 on 14.05.93.

Investigation Details: Initiated 01.09.91 on exports from Croatia, Czechoslovakia, Hungary and Poland of steel, tubes and pipes.

Results of Investigation: Croatia – Undertaking, Czechoslovakia – Duties, Hungary – Undertaking, and Poland – Undertaking.

* Since I have eliminated FSU and former communist countries of Eastern Europe, Czechoslovakia and Croatia have not been estimated in this regression.

Case 4.2: Steel, tubes and pipes (679 SITC Rev.2)

EC Case/Reference Number: 96/252/EC, published 01.03.96.

Investigation Details: Initiated 01.02.94 on exports from China, Croatia, Slovak Republic, Taiwan (China) and Thailand of steel, tubes and pipes.

Results of Investigation: China – Duties, Croatia – Undertaking, Slovak Republic – Negative finding, Taiwan (China) – Negative finding, and Thailand – Undertaking.

* Since I have eliminated FSU and former communist countries of Eastern Europe, Croatia and the Slovak Republic have not been estimated in this regression.

c) India – EC or Member States Named

i) Case5.1: Graphite Electrodes (7788 SITC Rev.2)

Indian Case/Reference Number: 20/98, duties imposed 05.05.98.

Investigation Details: Initiated 30.09.96 on exports from the United States, China, Spain, Italy, Germany, Belgium, Austria, and France of graphite electrodes.

Results of Investigation: Duties applied to all exporters.

3) Econometric Specifications

In order to quantify the diversionary effect of the investigation and the outcome on trade from named countries to non-named countries, I estimate the following log model:

$$\ln \left(\frac{Y_{it}}{Y_{i,t-1}} \right) = a_{it} + \beta D_i + \varepsilon_{it}$$

where $t = I^1 - 3, \dots, I^1, \dots, I^2, \dots, I^2 + 3$ where I^1 is the year of the first investigation initiation and I^2 is the year where any second investigation was initiated (noting that not all products have a second investigation in which case $I^1 = I^2$). Y_{it} denotes the import of a good from an exporting country i in year t . Parameter a_{it} captures trend growth of imports from exporter i and does not depend on t . βD_i represents the vector of dummies explained below, and ε_{it} is the error term that is assumed to be normally distributed with mean zero.

Dummies are assigned to capture the effects of the initiation and of the different outcomes of an investigation. Though the value of the duty is specified for some cases, the effects of an undertaking are not picked up using this method nor have previous results using ad-valorem duty been entirely convincing.²⁴ Instead, dummies are used to control for the effects of differential outcomes and investigations. The vector of dummies βD_i is broken up as follows: Initiations and Outcomes.

1. Initiations of an Investigation

D_Naminv is a dummy equal to 1 in the year of the investigation if the party is named while D_Nnaminv is equal to 1 if it is not named. These dummies are equal to 0 in all other years. These dummies capture the effects of being named or not named to an investigation.

2. Outcomes of an Investigation (Duties, Undertaking, or Negative finding)

The following 3 dummies capture the outcome of the investigation: a) D_Affir is equal to 1 in a specific year if definitive duties are imposed and 0 in all other years; b) D_Set is equal to 1 in a specific year if the case is settled by an undertaking and 0 in all other years; and c) D_Neg is equal to 1 in a specific year if no duties are imposed on a named party and 0 in all other years.

As mentioned earlier, Prusa (1999) is the point of departure for this paper. Briefly, Prusa estimates the following model:

²⁴ See Prusa (1999). Brenton (2000) also finds that the size of the duty is not significant. This suggests that either the harassment effect is stronger or that countries adapt their behaviour well before the imposition of the duty.

$$\Delta Y_{it} = \delta \Delta Y_{i,t-1} + \Delta x'_{it} \beta + \varepsilon_{it}$$

where ΔY_{it} denotes the change in imports from country i at time t . The parameter $\delta \Delta Y_{i,t-1}$ captures the lagged change in country specific imports (estimating the AD event shock) and the parameter $\Delta x'_{it} \beta$ estimates the change in the vector of dummies. With respect to the model I have presented for this analysis, to the extent that the shock is a one-time event and that some of the variables are time invariant (i.e. GDP, distance), then their effects are taken implicitly into account in the form of my dependant variable.

One concern is that heteroscedasticity may affect efficiency of parameter estimates. Transformation of the data using weighted least squares can generate efficient estimates (the weights applied were the absolute value residuals of an unweighted first stage regression.) Accordingly, the dummies are regressed against the weighted least square of the logged ratio of year-to-year bilateral imports. The logarithmic transformation also helps with the scaling of the data. In addition, the Fixed Effects (FE) estimator²⁵ is used to estimate individual-specific effect a_{it} . We therefore allow for different intercepts for export sources but impose identical values for dummy variables. We can also estimate the welfare effects of these events by estimating the e^α where α is the co-efficient of the dummy.

In cases where there is a second investigation, a second regression is run. Additional dummies are added (to capture the effect of the second initiation of an investigation and its outcome, if any). The second investigation is treated as an independent event. This enables an study of the hypothesis that an investigating agency punishes alleged ‘dumpers’ more severely during a second investigation. The tables in Appendix I report FE estimates for goods with one or two investigations.

4) Estimation Results

a) EC Investigation where India is a named party

i) Synthetic Fibres suitable for spinning (266)

In Table 1 of the Appendices, the regression estimates the importance of the initiation event. As expected, the parameter estimates are negative and significant if a party is named in an investigation. Moreover, the imposition of duties also decreases the

²⁵ Regressions were also run using both the Random Effects (RE) estimator and the Generalized Least Squares (GLS) estimator (assuming a heteroscedastic panel). The estimates were extremely close to those that used the FE estimator.

value of imports. Since the second investigation was against exporters from Belarus, there are no estimates.

ii) Textile Yarn (651)

In Table 2 of the Appendices, the parameter estimates that the initiation of the second investigation is more significant than the first investigation alone. In the first investigation, the parameter estimates are positive and significant for countries named in the investigation. This could be due to the late initiation of the case (September 1990). A dummy is assigned whether an investigation is initiated at the beginning or at the end of the year. This process may not work as effectively if the investigation is launched at the end of the year rather than at the beginning. In these situations, the co-efficients may not be picking up the right information. In the second regression, the impact of the second investigation has an effect on the parameter estimates for the first investigation. The coefficient for the second investigation is large, positive, and significant for non-named parties who gain significantly from diverted trade (positive and significant co-efficients). An affirmative and negative outcome is negative but not significant at the 5% level and the parameter estimates changes little from the first regression. This suggests that non-named parties gain significantly as trade is diverted towards them.

b) EC Investigation where India is not a named party

i) Cycles (7852)

In Table 3 of the Appendices, the parameter estimates for exporters not named in the first investigation are positive and significant. However, the story changes when the second investigation is included and both investigations are estimated. Parameters are negative and significant for both named and non-named exporters. In addition, the estimates for an affirmative outcome are also large, negative, and significant. Thus, imports fall whether you are named or not named and an affirmative outcome leads to prohibitive consequences. This indicates that serious action was taken and exports from both named and non-named countries decreased overall. In fact, the import data reveals that exports fell by 15% from named countries in the year following the duties and a further 40% the following year. Imports did not start to recover until 4 years after the duties were imposed.

ii) Steel, tubes and pipes (679)

Table 4 of the Appendices provides the estimates for steel, tubes and pipes. These parameter estimates of the first investigation reveal that, like the textile yarn case, named parties gain from being investigated. Since the investigation was launched in February, the dummy variable should be picking up the effects. It is possible that there are differential sectoral effects, i.e. the steel industry is perhaps more resilient to AD investigations. The second estimation shows positive and large co-efficients results for settling by undertaking. This would imply that foreign firms gain from entering a price undertaking with the EC; a finding consistent with economic theory on the effects of undertakings and the incentives for exporters to enter into them.

c) **EC Member States Named by India**

i) Graphite Electrodes (7788)

In Table 5 of the Appendices, the parameter estimates of the first Indian investigation against exporters from several EC Member states are negative but not significant at the 5% level. This is consistent with some of the other EC cases investigated. Once the second investigation in graphite electrodes can be estimated (when post-investigation data is available), it will be interesting to note whether the parameter estimates are consistent with those of the EC cases.

Some of the estimated co-efficients are unduly large implying sizeable, if not impossible, trade flow changes. These dummies may be picking up other shifts or changes happening simultaneously to the investigation. However, some of the parameter estimates imply substantial changes in trade flows due to the investigation or the outcome. These include:

- 99.7% decrease in trade when a party is named in synthetic fibres cases. Indian traders are affected by the investigation as a named party.
- 250% increase in imports when a party is not-named in the first textile yarn case and a 300% increase when a party is not-named in the second textile yarn case. An affirmative outcome of a named party decreases trade in textile yarn by 45%. Indian traders are affected as they not only lose business but they are stung by the outcome of the case as well.
- 275% increase when a party is not-named in the first Cycles case. Indian benefits from diverted trade.

What can be summed up from these results is that the investigation event, for the most part, matters. The effect of the outcome is, for the most part, only secondary to that of the investigation. If the outcome is significant, duties and undertakings have the most trade diverting effect. Lastly, a second investigation significantly alters the parameter estimates for the first investigation in addition to severely punishing foreign traders and restricting imports. Perhaps it is enough to use the investigation and the threat of duties to curb imports. Alternatively, perhaps the levying of duties is a foregone conclusion and thus imports fall. This would indicate a price effect since countries may lower their price or their volume immediately following an investigation. Or perhaps it is as Prusa (1999) suggests, initiations alone create significant harassment effects.

D. CONCLUSION AND SUGGESTIONS FOR FUTURE RESEARCH

The empirical analyses of the effects on named and not named parties of developing country antidumping policy are sparse. This contributes to the literature by examining the effects of EC AD policy on Indian exports, and in return, the effects of Indian AD policy on EC exports. This analysis has found that investigation effects dominate, the second investigation has a larger effect than the first, and that AD policy has a sizeable impact on trade. Two caveats to this result: Due to the difficulties in obtaining accurate product line codes, 3-4 digit SITC Rev. 2 codes were used. It is therefore possible that data not used in the investigation, was used to estimate the parameters. Secondly, dummies cannot differentiate between AD and other events during the year of the investigation and the outcome. Further research may want to overcome these concerns and caveats.

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Table 2: Results of Textile Yarn (651) Regression

2 Regressions run:

1. 1987-1995 **t = 0** **1990**

2. 1987-1999

Dependant Variable: logged WLS of Ratio of Year-to-Year imports (USD)

Independent Variables

Year	Dummy Variables	Sign	Co-efficient	S.E.	t-value		
FIRST INVESTIGATION							
87-95	<i>Not Named Investigation</i>	+	.3616	.1649	.35	No. of Observations	220
87-95	<i>Named Investigation</i>	+	.0958	.2794	2.19		
87-95	<i>Affirmative Outcome</i>	-	-.6020	.3311	-1.82	No. of Groups	22
87-95	<i>Negative Outcome</i>	-	-.8842	.4674	-1.89		
87-95	<i>Settled Outcome (Undertaking)</i>	NA	Dropped				
SECOND INVESTIGATION							
87-99	<i>Not Named Investigation</i>	+	.4190	.1376	3.04	No. of Observations	308
87-99	<i>Named Investigation</i>	+	.1248	.2254	.55		
87-99	<i>Affirmative Outcome</i>	-	-.5898	.2756	-2.14	No. of Groups	22
87-99	<i>Negative Outcome</i>	-	-.7151	.3894	-1.84		
87-99	<i>Settled Outcome (Undertaking)</i>	NA	Dropped				
87-99	<i>Not Named Investigation 2</i>	+	.7358	.1264	5.82		
87-99	<i>Named Investigation 2</i>	+	.5906	.3186	1.85		
87-99	<i>Affirmative Outcome 2</i>	NA	Dropped				
87-99	<i>Negative Outcome 2</i>	-	-.1999	.5506	-.36		
87-99	<i>Settled Outcome (Undertaking) 2</i>	-	-.1279	.3896	-.33		

Table 3: Results of Cycles (7852) Regression

2 Regressions run:

1. 1988-1996

t = 0 1991

2. 1988-1999

Dependant Variable: logged WLS of Ratio of Year-to-Year imports (USD)

Independent Variables

Year	Dummy Variables	Sign	Co-efficient	S.E.	t-value		
FIRST INVESTIGATION							
88-96	<i>Not Named Investigation</i>	+	.5574	.2735	2.04	No. of Observations	126
88-96	<i>Named Investigation</i>	+	.6299	.6752	0.93		
88-96	<i>Affirmative Outcome</i>	+	.7150	.9511	.75	No. of Groups	14
88-96	<i>Negative Outcome</i>	-	-.1839	.9511	-.19		
88-96	<i>Settled Outcome (Undertaking)</i>	NA	Dropped				
SECOND INVESTIGATION							
88-99	<i>Not Named Investigation</i>	+	.4856	.2487	1.95	No. of Observations	182
88-99	<i>Named Investigation</i>	+	.6292	.6074	1.04		
88-99	<i>Affirmative Outcome</i>	+	.0755	.4485	.17	No. of Groups	14
88-99	<i>Negative Outcome</i>	+	.1749	.4961	.35		
88-99	<i>Settled Outcome (Undertaking)</i>	NA	Dropped				
88-99	<i>Not Named Investigation 2</i>	-	-.6444	.2598	-2.48		
88-99	<i>Named Investigation 2</i>	-	-.9484	.4973	-1.91		
88-99	<i>Affirmative Outcome 2</i>	-	-2.318	.5191	-4.46		
88-99	<i>Negative Outcome 2</i>	NA	Dropped				
88-99	<i>Settled Outcome (Undertaking) 2</i>	NA	Dropped				

Table 4: Results of Steel, tubes and pipes (679) Regression

2 Regressions run:

1. 1988-1996 **t = 0** **1991**

2. 1988-1999

Dependant Variable: logged WLS of Ratio of Year-to-Year imports (USD)

Independent Variables

Year	Dummy Variables	Sign	Co-efficient	S.E.	t-value		
FIRST INVESTIGATION							
88-96	<i>Not Named Investigation</i>	-	-.0594	.2918	-.20	No. of Observations	171
88-96	<i>Named Investigation</i>	+	4.0567	.8575	4.73		
88-96	<i>Affirmative Outcome</i>	NA	Dropped			No. of Groups	19
88-96	<i>Negative Outcome</i>	NA	Dropped				
88-96	<i>Settled Outcome (Undertaking)</i>	-	-.1115	.8575	-.13		
SECOND INVESTIGATION							
88-99	<i>Not Named Investigation</i>	+	.3707	.2223	1.67	No. of Observations	228
88-99	<i>Named Investigation</i>	+	.3572	.5813	.61		
88-99	<i>Affirmative Outcome</i>	NA	Dropped			No. of Groups	19
88-99	<i>Negative Outcome</i>	NA	Dropped				
88-99	<i>Settled Outcome (Undertaking)</i>	-	-.1097	.8026	-.14		
88-99	<i>Not Named Investigation 2</i>	-	-.3509	.2843	-1.23		
88-99	<i>Named Investigation 2</i>	-	-.1474	.6549	-.22		
88-99	<i>Affirmative Outcome 2</i>	+	1.235	1.131	1.09		
88-99	<i>Negative Outcome 2</i>	-	-.3969	1.130	-.35		
88-99	<i>Settled Outcome (Undertaking) 2</i>	+	6.529	.8026	5.78		

