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ON THE SPREAD AND IMPACT OF ANTIDUMPING

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ABSTRACT

This paper documents two key costs of AD protection. First, once AD has been adopted countries often have a difficult time restraining its use. In recent years "new" users have accounted for half of the overall world total. Many of the heaviest AD users are countries who did not even have an AD statute a decade ago. Second, I will show that on average AD duties cause the value of imports to fall by 30-50%. I find that trade falls by almost as much for settled cases as those that result in duties. Interestingly, I also find that even for those cases that are rejected imports fall. The spread and impact of AD protection most surely implies that AD will continue to be a key negotiating item in the next WTO round.

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1. Introduction

Of all the issues negotiated under the Uruguay Round, antidumping was perhaps the most contentious. Broadly stated, the debate pitted antidumping's traditional users, essentially industrialized countries such as the US and EC, against traditional non-users, primarily developing countries. Thanks to demands by the US and EC the Uruguay Round achieved only mixed success at tightening the rules governing antidumping (AD) actions. The strengthening of de minimis rules and the addition of sunset reviews should make AD protection less burdensome for small producers. Unfortunately the agreement also endorsed the cumulation provision, codified the concept of the AD duty as a cost, and did little to restrain the use of price undertakings. All things considered, there is every reason to believe not only that AD disputes will continue to flourish but also that AD policy will be a key item for the next WTO round.

To many observers, the US and EC's embrace of AD is frustrating and perplexing. On the one hand, the US and EC preach that reducing government interference and accepting free markets will maximize growth and welfare. On the other hand, it often seems that just when developing countries begin to efficiently operate and become competitive in particular markets, industrialized countries shut down those precise markets with a trade policy that is universally decried by economists. "Do as I say, not as I do" seems an apt description of the US and EC's view of the efficiency of government involvement in markets—at least with respect to AD.

A growing number of countries however, have not followed that advice. In recent years "new" AD users (primarily developing countries) have initiated AD complaints at unprecedented rates. Only a decade ago developing countries filed only one or two complaints per year. By contrast, in recent years developing countries account for well over 100 petitions per year, close to half of the overall world total. It appears, then, that developing countries have also been seduced by AD's unique combination of GATT/WTO consistency and ease of use. Now they too can levy sector specific tariffs without blatantly violating their tariff bindings.

This surge of AD activity has not gone unnoticed. According to the US Trade Representative, trade negotiations must preserve "antidumping laws as effective remedies against unfair trade practices" while at the same time "prevent misuse of other countries' antidumping laws against U.S. exporters."[1] In other words, traditional AD users are worried that the "new" users are using AD to restrict competition and close markets which earlier GATT rounds had opened. The desire to reign in other countries' use of AD may cause industrialized countries to change their tune with respect to AD. Apparently, the US and EC may finally seek to reform AD because other countries have also realized how large a loophole it is, how easy it is to use, and perhaps most importantly, how easy it is to misuse.

AD has become the trade policy of choice for both developed and developing economies. Unfortunately, it is not clear exactly why so many new countries are embracing AD law. Perhaps they believe that if it is good for the US and the EC

[1]Letter from U.S. Trade Representative Michael Kantor to Senator Ernest Hollings, 29 June 1993, reprinted inside "Inside U.S. Trade," 2 July 1993, page 15.

then it must be good for them too. Perhaps they believe that their use of AD is the only way to defend themselves against other countries using it against them. Or, perhaps AD is simply a policy instrument that their mercantilist instincts can't resist.

Whatever the motivation, it is unlikely that many new AD users are aware of the costs of embracing such a policy. The goal of this paper is to begin the process of educating AD users as to the costs of its use. I will present evidence that shows that countries should be very careful in embracing AD protection. While current proliferation of AD actions might lead to long run restrictions on antidumping, I argue that one should not overlook the short run costs associated with AD protection.

I will emphasize two main costs of AD protection. First, there is substantial evidence that once AD has been adopted, countries often have a difficult time restraining its use. Many of the reasons why AD is so attractive to policymakers—it is an extremely flexibility and timely instrument—are also reasons why it is prone to being misused. AD can be applied in so many circumstances because its rules and procedures can be broadly interpreted. A country may find it advantageous to interpret the GATT/WTO standards in such a way that a particular sector can be protected. Yet, this almost always leads other sectors too also seek protection under this newly established precedent. Thus, it is difficult for governments to reign in its use. Industries like AD since it allows them to seek protection—often with only the skimpiest evidence of injury and little evidence of economically unjustified pricing practices. As a result, countries adopting an AD statute often find

it a bit like letting the genie out of the bottle—it is difficult to give one industry protection without encouraging other sectors to also seek protection. So while it might be conceivable that AD protection raises welfare in certain circumstances, its widespread use suggests that it is often being used inappropriately.

Second, unlike typical MFN tariffs AD duties are almost always remarkably large. On average, AD duties are 10 to 20 times higher than the MFN level, and it not unheard of to have AD duties more than 100 times higher than the MFN level. Clearly, protection at these levels has dramatic impact on trade. I will provide evidence that that on average AD duties cause the value of imports to fall by 30–50%. I will also show that AD actions distort trade patterns even if duties are never levied. Almost one-quarter of all AD cases are settled, often via some form of VER or marketing arrangement. I find that trade falls by almost as much for these cases as those that result in duties. Interestingly, I also find that even for those cases that are rejected imports fall, evidence that the mere investigation distorts trade. All things considered, policymakers would be well advised to consider the large distortions created by AD actions before they rush to embrace it.

The remainder of this paper is organized as follows. I will begin by reviewing recent trends in AD activity (section 2). I will document the the rise of AD activity over the past decade and show that the continued growth in AD activity is largely being fueled by countries who have only recently adopted the statute. It is this spread in AD activity that keeps AD reform a top item on the WTO agenda. In the second part of the paper I estimate the trade impact of AD law (section

3). Here I will rely on data from the world's heaviest antidumping user—the United States—as it is the only country where comprehensive data are available to conduct such a study. Given that most AD adopters have used the US statute as a guide for implementing their own AD statute, the lessons learned from the US experience are likely to carry over to others. Using extremely disaggregated trade data, I find that AD actions have a very large effect on imports. When an AD dispute results in duties or is settled, I estimate that on average import quantities fall by almost 70 percent and import prices rise by more than 30 percent. Interestingly, even when an AD dispute is ultimately rejected, the scrutiny has a significant impact on trade. The data reveal that AD investigations—regardless of their outcome—harass importers. I find that even when the case is rejected imports fall by about 20 percent.

2. The Spread of Antidumping

Until relatively recently AD actions were not not particularly common. For instance, in the 1960s all GATT members filed only about ten antidumping petitions per year (Schott, 1994). During the 1970s, however, a small set of users began to more actively initiate AD actions, primarily as a way to protect declining industries. Even as recently as the late-1980s AD law was essentially only enforced by five territories—Canada, New Zealand, Australia, United States and the European Community. Over the decades of the 1980s, more than 1600 AD cases were filed worldwide (Finger, 1993). As a group, the "traditional" users accounted for

more than 95% of all AD cases during the 1980s.[2]

Demand for AD protection has continued to grow during the 1990s. Over the past ten years, almost 2200 AD cases have been filed worldwide, a filing rate about 25% greater than during the 1980s (see Table 1). While the overall usage has increased, the most noticeable trend is the change in who is using the law. The once exclusive club has now opened its doors. Countries of all stages of development and industrialization have joined the ranks of active AD users. And, it is the dozens of new users that have fueled AD's continued growth.

Over the 1987–1997 period 29 countries initiated antidumping complaints, about triple the number during the prior ten years. Over the past ten years there has been a five-fold increase in AD filings by "new" users.[3] More impressively, as compared with the early 1980s, there has been a fifty-fold increase.

New users are not only filing more cases than they had previously, but they are also accounting for an increasing share of total complaints. Between 1987–1992 new users filed about 20% of the AD cases in each year. By contrast, over the last five years new users account for well over half of AD complaints. The trend is even more striking in comparison with trends during the 1980s, when new users accounted for fewer than 5% of AD cases.

It is also striking how quickly AD is embraced once legislation is enacted. Mexico, for instance, signed the GATT/WTO antidumping code in 1987 and filed more than 30 cases within three years. Argentina filed its first AD case in 1991 and

[2]This same group similarly dominated AD activity during the 1960s and 1970s.

[3]By the term "new" users I refer to all countries other than the five traditional users of AD.

has since averaged almost 20 cases *per year*. Likewise, South Africa has initiated more than 20 cases per year since it adopted an AD statute. Similar patterns of use—a rush to invoke the new law—are evidenced by India, Indonesia, Turkey, Malaysia, Peru, Israel, Colombia, Costa Rica, and Venezuela. The evidence is overwhelming that AD is not a statute which grows dusty from disuse.

The widespread adoption of AD law has also impacted which countries are targeted. In Table 2 I detail AD actions by targeted country. Several interesting trends are evidenced. First, note that over the entire period almost 99 countries were investigated—about twice as many as were investigated during the 1980s. Apparently, AD's expanding reach can be measured equally well by either the number of active users or the number of investigated countries.

Second, note that during the 1980s almost all dumping charges were made by a small number of countries and most targeted a very small set of countries. In particular, during the 1980s two-thirds of AD investigations targeted another traditional user (Finger, 1993). By comparison, over the past decade only about one-third of the cases targeted a traditional AD user. In this sense, AD's reach has expanded.

In another sense, however, the targets of AD investigations are much the same as they were during the 1980s. Note that during the 1980s two-thirds of AD investigations involved countries who were fellow AD users. Interesting, during the 1990s virtually the same percent of AD cases (1498 of 2196) were filed against fellow AD users. In other words, AD is still a policy largely wielded within the club of AD users; the big difference is that now the club is bigger than it was

before.

These trends are consistent with Finger's (1993) conjecture that many countries adopt AD, at least in part, to counter the sanctioning of their imports. That is, countries adopt AD not only to protect against unfair imports, but also to defend their exporters against abuse of the law abroad. From this view, AD is a part of a tit-for-tat strategy. In this case, many AD actions are not motivated by a desire to make markets more competitive but rather by a wish to deter other countries' from using the law. In other words, by raising the cost of exporting a government hopes to raise the costs of others using the law.

On the other hand, the trends are also consistent with the view that AD users are primarily the same countries who are subject to AD actions. Perhaps the notion that adopting AD law will deter others from using is incorrect. Rather, it appears that AD activity is better understood as an example of prisoner's dilemma. Each country cannot resist the temptation to protection to important import-competing industries. Yet, if all countries also use AD law, each country is worse-off than they would be under free trade. Under this interpretation, all users would benefit if everyone agreed to stop using the law.

3. Impact of Antidumping

The filing trends presented indicate that the AD genie is out of the bottle. A multitude of countries have only recently enacted AD statutes and these new users are now filing a larger and larger number of cases. What do these filings

mean for the markets affected? Under the best case scenario I could estimate the impact of AD for each country and sector that has used the law. Unfortunately, the data are not available to perform such an exercise. Instead, I will estimate the effect of AD actions using data from the largest AD user, the United States.

For a couple of reasons the US is an excellent candidate for understanding the effects of AD protection. First of all, the US has filed more AD cases than any other user. Therefore, we have a large sample of cases. US industries filed over 700 AD petitions between 1980 and 1994. About a quarter of the cases were settled; of the remaining cases, about half were rejected and half resulted in duties. Second, as the world's most prominent AD user, the US statute has served as the basis for many countries newly adopting AD law. The GATT AD rules are quite broad and countries have significant latitude in implementing their AD statute, but most have chosen to follow US procedures. Thus, even though the estimates are based on US data, they should reasonably approximate what we can expect for countries with similar AD statutes. Third, the quality of US trade data is excellent. Machine-readable import statistics are available for the entire period and the data is reported at the line-item level.

Several important characteristics of AD protection should be highlighted before we proceed with our estimates. First, AD investigations involve two questions: (1) was their "unfair pricing" (i.e., price discrimination or below-cost sales) and (2) did the dumped imports cause injury. The former question is almost always answered in the affirmative. Since 1980 fewer than 5% of AD cases were rejected

because the domestic industry could not show unfair pricing.[4]

In fact, the estimated margins (a metric of the extent of unfair pricing) averaged about 40%. The median duty levied was 16%. To put these margins in perspective, note that the industries seeking AD protection had MFN tariff levels averaging about 4%. Many cases were subject to seemingly prohibitive levels of protection; for example, twenty percent of the cases had duties exceeding 50%; ten percent of the cases had duties exceeding 100%. Given the size of the dumping margins, one would expect that the typical AD user receives substantial protection.

The second question—existence of injury—is where dumping cases tend to be rejected. At this stage the US International Trade Commission (ITC) must decide if the dumping imports have caused, or threaten to cause, material injury to the domestic industry. Over the sample period, about half of the ITC's final injury determinations were negative.[5]

Perhaps the most overlooked feature of AD is that its protection is country-specific. AD duties are levied only on imports from countries named in the petition. It would be unusual for a petition to name all import suppliers. Rather a case usually only names a subset of import competitors. In our empirical analysis, therefore, it will be important to distinguish between countries named in the petition and those not named. For example, if the steel industry alleges that 1/4 inch

[4]The rules governing how the Department of Commerce calculates dumping margins are widely considered biased in favor of finding positive margins. See Boltuck and Litan (1991) and Lindsey (1999) for discussions.

[5]Hansen and Prusa (1996, 1997) analyze ITC decision-making.

ball-bearings are being dumped from Canada and Brazil, only ball-bearings from those two named countries are subject to duties. If Canadian suppliers have 10% of the import market and Brazilian suppliers 15%, the petition would cover 25% of the rival imports. The other countries supplying 1/4 inch ball-bearings would not be investigated nor subject to duties. Once Canada and Brazil are sanctioned, demand for domestically produced ball-bearings should increase. Demand should also increase for similar ball-bearings produced by other foreign countries. For instance, Argentina should be able to sell more to the US market and/or raise its price on ball-bearings exports destined for the US market. On average, a typical case names about 40% of the total import market.

Therefore, AD actions have the potential to provide substantial protection and also induce trade diversion. In order to quantify the effect of the petition on trade from named and non-named I estimate a model of the form

$$y_{it} = \delta y_{i,t-1} + x'_{it}\beta + u_{it}, \quad t = -3, -2, -1, 0, 1, 2, 3 \tag{1}$$

where δ is a scalar, x'_{it} is $1 \times K$ and β is $K \times 1$. I assume that the u_{it} follow a one-way error component model

$$u_{it} = \mu_i + \nu_{it}, \tag{2}$$

where $\mu_i \sim IID(0, \sigma^2_\mu)$ and $\nu_{it} \sim IID(0, \sigma^2_\nu)$ independent of each other. μ_i denotes

the individual specific residual, differing across cases but constant for a given case. For instance, a country with comparative advantage in ball bearings is likely to have large imports year after year, and hence have a large μ_i. Time is normalized so that $t = 0$ denotes the year the petition was filed; hence, $t = -1$ refers to the year *prior* to the filing, $t = +1$ refers to the year following the filing, $t = +2$ refers to the second year following the filing, etc. Thus, the cross-section is identified by the cases and the time series variation is driven by annual observations on import trade before and after the AD petition.

The fixed effects (FE) estimator is a standard way of estimating (1) since it eliminates μ_i. However, in our application the FE estimator will be biased and potentially inconsistent since $y_{i,t-1}$ will be correlated with the FE-transformed residual. The extent of the inconsistency varies from application to application, but in general the problem will be less serious the longer is the time series (Kiviet 1995). Given the relatively short length of the time series (seven years) it is necessary to account for this potential problem.

To resolve the problem we take first differences of (1), yielding

$$y_{it} - y_{i,t-1} = \delta(y_{i,t-1} - y_{i,t-2}) + (x'_{it} - x'_{i,t-1})\beta + (\nu_{it} - \nu_{i,t-1}),$$

thereby eliminating μ_i. We can rewrite this equation as

$$\Delta y_{it} = \delta \Delta y_{i,t-1} + \Delta x'_{it}\beta + \epsilon_{it}. \tag{3}$$

By construction, $y_{i,t-1}$ will be correlated with the transformed residual $\nu_{it} - \nu_{i,t-1}$ so we need to estimate the transformed equation with instrumental variables (IV). There are a multitude of moment conditions that can be exploited to derive instruments. For all time periods both $y_{i,t-2}$ and lagged values of x'_{it} are valid instruments. For time periods $t = 0, 1, 2, 3$ we can use additional lags of $y_{i,t}$; for instance, for period $t = 0$ $y_{i,t-3}$ can be used as an additional instrument. Additional lags can be added for each forward period.[6]

In the tables presented below, I report estimates for both the FE estimates of (1) and IV estimates of (3). The FE estimates are a useful benchmark and the results for the two estimations procedures do not greatly differ, suggesting the fixed effect bias is small in this application.

Public sources were used to collect the data. The International Trade Commission's *Annual Report* provides basic case information such as year of filing, outcome, etc. Each AD petition also contains information about the industry filing the petition, the country being investigated, the products allegedly dumped, etc. The products are identified by the line-item tariff codes upon which the duty will be levied. Using these codes I gathered product level data using import data from Feenstra (1996). Since most cases identify more than one line-item, I sum across all named tariff lines to construct trade for the named products (by country) for each year. Thus, for each case I construct import data for each country (only a subset of which are named).

[6]See Hsiao (1986) and Baltagi (1995) for a more complete discussion of the estimation of dynamic panel models and the construction of valid instruments.

We now need to determine what metric of imports should be studied. AD actions can distort import trade in a variety of ways. For instance, the foreign firms may simply pass through the AD duty. In this case an action would likely lower import quantities but have little impact on import prices. On the other hand, the named foreign firms may raise their prices. Doing so increases the chance that the AD duty will be removed but means that consumers will face sharply higher import prices. In this sense AD's impact can be felt via either higher prices, lower quantities, or both. To try and shed light on the various ways AD can distort trade I estimate the effect of AD actions on the value of imports, the quantity of imports, and the price (unit value) of imports.

How might an AD investigation affect trade? To get a direct measure of the impact of AD duties, I report a specification with the (log) AD duty in each of the three years following the case ($t = 1, 2, 3$). Recall, however, that the AD duty is only imposed when the case receives an affirmative final injury determination. This direct measure, then, does not pick up any potential trade restraint when the case is settled or rejected.

It is often argued that AD petitions have a profound impact on imports even if they do not result in duties (Staiger and Wolak, 1989; Prusa, 1992). Consider first that about 20% of US AD cases were settled, and the large majority of these cases were resolved with some type of voluntary restraint agreement. Hence, we would expect that these settled outcomes to have a measurable impact on trade. Note, however, that these agreements usually involve explicit quantity restrictions but often do not mandate specific price increases. Thus, settled cases might have

a substantial impact on quantities but not prices.

There is also evidence that imports are significantly restrained when the case is rejected. For example, Staiger and Wolak (1994) find that imports fall dramatically during the investigation period, regardless of the case's ultimate outcome.[7] Legal scholars often refer to this as the "harassment" effect of an AD investigation. Therefore, all three outcomes—affirmative decisions (duties levied), settled, and negative decisions—can have significant impact on imports. In order to quantify the importance of these effects I also report a specification where dummy variables capture the affect of the case's outcome at time $t = 1, 2, 3$.

Finally, in all specifications I include (but do not report) year dummies for each regressions. Year dummies capture macroeconomic shocks that are common across all cases but vary over time. For instance, the dollar depreciation in 1985 might affect the domestic price of all 1985 imports.[8]

Named Countries

In Table 3 I report results for the value of imports. The first (last) four columns report estimates for the named (non-named) countries.[9] According to the FE estimates, the imposition of AD duties significantly restrain trade in each of the first three years following the case.[10] Specifically, a 10% duty causes imports

[7]Staiger and Wolak's (1994) regressions focus on trade during the first year following the filing of the petition and are therefore best interpreted as estimates of the short run effect of AD investigations. In contrast, the regressions below are best interpreted as longer run effects.

[8]Full parameter estimates are available from the author upon request.

[9]To keep the table manageable, I abuse notation by denoting the IV parameter estimates without Δ.

[10]Using the Davidson-MacKinnon (1981) test I cannot reject the log-log specification in favor

from named countries to fall by about 1.9% during the first year following the AD investigation. The impact is smaller in subsequent years, but still significant. According to the IV estimates, the impact during the first year is somewhat larger than the FE estimates, but the impact in the second and third year is no longer significant.

Given the discussion in Prusa (1997) the estimated elasticities are somewhat smaller than expected. There are several possible explanations. First, as mentioned above the foreign firms may raise their price to the US market. By doing so the foreign firms increase the chance that the duties will be removed in a more timely fashion. Doing so also means that they earn the higher per unit revenue rather than allowing the duty to be collected by the US government.[11] Second, AD duties vary dramatically from case to case. Although the average duty (in affirmative cases) is 45%, the median duty (in affirmative cases) is 26%, suggesting that there are cases with rather large duties. Reviewing the data indicates that there were a handful of exceptionally large duty cases—eleven cases had margin exceeding 200%. Ten percent of the cases had duties exceeding 100%. Such wide disparity is duties might make the constant elasticity specification inappropriate.

For these reasons from this point on I will primarily emphasize the results from the dummy variable specification. Note that unlike the ln(duty) specification, the parameter estimates for the outcome dummies must be transformed before they can be readily interpreted. At the bottom of the table I report the economic effect

of estimating in levels.

[11]See Blonigen et. al. (1997) for a good discussion of this issue.

of the respective case outcomes. According to both the FE and IV estimates, an affirmative AD determination reduces the value of imports by about 50% in *each* of the three years following the determination. The value of imports falls by about 60% following a settlement agreement. Trade also falls in rejected cases by about 20%, although the effect is not statistically significant for the IV estimates.

In Tables 4 and 5 I report analogous results for import quantities and prices, respectively. Comparing the tables it becomes clear that AD has a larger impact on quantities than on prices. In particular looking at the IV dummy results, an affirmative AD determination causes quantities to fall by almost 70% during the first three years following the duty. Prices increase by about half as much. Interestingly, the parameter estimates confirm our conjecture that settled cases will primarily entail large restrictions in import quantities but relatively small (and statistically insignificant) price increases. In particular, imported quantities fall about the same when cases are settled or result in duties. However, prices increase far less for settled cases than for affirmative cases. These results are consistent with the view AD law essentially serves as a GATT-consistent tool to manage trade. The logic is that industries can influence when their dispute will be settled (Prusa, 1991). For instance, certain industries seem especially proficient at creating political pressure, forcing the government to negotiate a voluntary export restraint. Given this, it appears that industries who opt to settle are primarily interested in managing their import competition rather than a desire to have import prices reflect "fair" pricing.

Non-named Countries

An AD case should also affect imports from non-named countries. Interestingly, while the FE and IV estimates gave quite similar results for imports from named countries, the two procedures give significantly different results when we analyze imports from non-named countries. As a result, the discussion will concentrate on the IV estimates since they have better theoretical grounding in this application.

Looking first the effect on the value of imports (Table 3) we see that the dummy variable specification is not well estimated. However, the ln(duty) specification does find that non-named countries respond to the reduction in trade by named countries by increasing their sales to the US market. This is precisely the effect we expect. The IV elasticity estimates imply that a 10% AD duty raises non-named imports by 6% during the first year, implying that non-named countries offset about one-third of the fall from named countries.[12] The IV dummy variable specification also finds that an affirmative determination leads to steadily increasing imports by non-named supplies: imports increase by 16% in year 1, 31% in year 2, and 45% in year 3, but the estimated coefficients are not statistically significant.

Turning next to the price and quantity effects, just as we found for the named countries, we find that the AD has a far greater effect on import quantities not prices. For the price equations, none of the estimated parameters are statistically significant. By contrast, the many of parameters in the quantity equation are significant. For instance, the dummies controlling for an affirmative AD de-

[12]On average non-named suppliers have 60% of the import market.

termination are not only significant but also large and positive, implying that non-named suppliers respond to the affirmative duty on named countries by substantially increasing their sales.

4. Concluding comments

In this paper I have documented the spread of AD protection and presented estimates of the trade impact of such protection. Over the past decade the number of countries using AD has dramatically increased. It is now the case that new users more actively pursue AD investigations than traditional users such as the US and EC. In addition, the data suggest that such investigations have a significant impact on import trade, regardless of whether duties are officially levied. Specifically, settled cases are about as restrictive as cases that result in duties. In either event the value of imports from named countries falls by 50–70 percent over the first three years of protection. And, even if the case is rejected I find that imports fall by 15–20 percent.

Given both the large number of AD users and also the huge impact AD duties have on trade, antidumping will surely remain a top issue for the next WTO round. The central issue, of course, is whether the next round will tighten the rules governing AD protection. The estimates presented in this paper should be a sobering reminder to negotiators of the distortions created by AD actions.

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Table 1
AD Actions, Reporting Countries

Reporting country	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total
Traditional users												
United States	15	40	24	34	63	83	32	48	14	22	16	391
Australia	22	16	21	47	68	71	59	15	5	17	42	383
European Community	28	27	18	48	29	42	21	43	33	25	41	355
Canada	31	15	13	15	11	46	25	2	11	5	14	188
New Zealand	0	9	1	1	9	14	0	6	10	4	5	59
TOTAL	96	107	77	145	180	256	137	114	73	73	118	1376
New users												
Mexico	18	11	7	11	9	26	70	22	4	4	6	188
Argentina	0	0	0	0	1	14	27	17	27	22	15	123
Brazil	0	1	1	2	7	9	34	9	5	18	11	97
South Africa	0	0	0	0	0	0	0	16	16	33	23	88
Others	6	5	11	7	31	21	31	50	31	71	60	324
TOTAL	24	17	19	20	48	70	162	114	83	148	115	820
Overall Total	120	124	96	165	228	326	299	228	156	221	233	2196
% by Traditional Users	80.0%	86.3%	80.2%	87.9%	78.9%	78.5%	45.8%	50.0%	46.8%	33.0%	50.6%	62.7%
% by OECD Countries	95.8%	95.2%	96.9%	98.8%	84.6%	89.6%	72.2%	61.8%	51.9%	40.7%	59.7%	74.7%

Source: Author's compilation based on data reported by Miranda, et. al. (1998).

Table 2
AD Actions, Targeted Countries

Targeted country	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total
Traditional users												
United States	18	10	8	18	16	26	30	14	12	21	15	188
Australia	0	2	0	0	0	2	3	0	1	0	1	9
European Community	27	23	13	24	68	70	53	31	30	37	57	433
Canada	3	5	1	1	5	8	5	1	2	1	3	35
New Zealand	2	0	0	0	1	1	1	0	1	0	0	6
TOTAL	50	40	22	43	90	107	92	46	46	59	76	671
Other Leading Targets												
China-PR	1	5	4	12	16	31	45	39	20	43	31	247
Korea	8	12	6	11	12	25	17	8	14	10	16	139
Japan	19	18	10	13	18	14	11	7	5	6	12	133
Brazil	5	6	7	7	7	18	23	9	8	10	5	105
China - Taiwan	6	8	6	11	10	15	11	5	4	8	16	100
Others	31	35	41	68	75	116	100	114	59	85	77	801
TOTAL	70	84	74	122	138	219	207	182	110	162	157	1525
Overall Total	120	124	96	165	228	326	299	228	156	221	233	2196
% Against Traditional Users	41.7%	32.3%	22.9%	26.1%	39.5%	32.8%	30.8%	20.2%	29.5%	26.7%	32.6%	30.6%
% Against OECD Countries	67.5%	56.5%	42.7%	42.4%	53.9%	47.5%	40.5%	28.1%	43.6%	35.7%	45.5%	44.5%

Source: Author's compilation based on data reported by Miranda, et. al. (1998).

Table 3
Impact of AD Actions on Value of Imports

	Named				Non-Named			
	ln Imports (FE)	ln Imports (FE)	ln Imports (IV)	ln Imports (IV)	ln Imports (FE)	ln Imports (FE)	ln Imports (IV)	ln Imports (IV)
ln Imports, t-1	0.255	0.255	0.386	0.404	0.128	0.136	0.108	0.108
	(0.017)**	(0.017)**	(0.060)**	(0.060)**	(0.014)**	(0.016)**	(0.022)**	(0.023)**
ln Duty, year+1	-0.190		-0.244		0.107		0.065	
	(0.037)**		(0.045)**		(0.029)**		(0.028)*	
ln Duty, year+2	-0.155		0.061		0.146		0.041	
	(0.043)**		(0.052)		(0.033)**		(0.029)	
ln Duty, year+3	-0.124		-0.005		0.183		0.038	
	(0.051)*		(0.058)		(0.037)**		(0.032)	
Aff Dec, year+1		-0.788		-0.888		0.352		0.155
		(0.138)**		(0.156)**		(0.126)**		(0.106)
Aff Dec, year+2		-0.651		-0.656		0.495		0.285
		(0.164)**		(0.246)**		(0.153)**		(0.166)
Aff Dec, year+3		-0.687		-0.755		0.631		0.398
		(0.199)**		(0.333)*		(0.184)**		(0.224)
Neg Dec, year+1		-0.404		-0.295		0.148		0.009
		(0.139)**		(0.159)		(0.129)		(0.110)
Neg Dec, year+2		-0.339		-0.134		0.205		0.024
		(0.162)*		(0.245)		(0.156)		(0.172)
Neg Dec, year+3		-0.348		-0.126		0.321		0.163
		(0.195)		(0.329)		(0.188)		(0.231)
Settled, year+1		-0.560		-0.966		0.241		0.071
		(0.190)**		(0.231)**		(0.172)		(0.154)
Settled, year+2		-0.475		-0.835		0.308		0.106
		(0.210)*		(0.333)*		(0.196)		(0.230)
Settled, year+3		-0.893		-1.438		-0.023		-0.219
		(0.249)**		(0.439)**		(0.223)		(0.298)
Observations	3591	3591	2883	2883	1723	1723	1401	1401
R-squared	0.75	0.75	---	---	0.85	0.85	---	---
%Δ in dependent variable per unit change in								
Aff Dec, year+1		-54.95%		-59.36%		41.00%		16.07%
Aff Dec, year+2		-48.53%		-49.65%		62.10%		31.16%
Aff Dec, year+3		-50.66%		-55.53%		84.84%		45.11%
Neg Dec, year+1		-33.87%		-26.51%		14.96%		0.34%
Neg Dec, year+2		-29.67%		-15.13%		21.31%		0.89%
Neg Dec, year+3		-30.70%		-16.45%		35.38%		14.62%
Settled, year+1		-43.93%		-62.93%		25.39%		6.14%
Settled, year+2		-39.14%		-58.96%		33.54%		8.32%
Settled, year+3		-60.29%		-78.44%		-4.68%		-23.19%

Standard errors in parentheses; constant and year dummies not reported
* significant at 5% level; ** significant at 1% level

Table 4
Impact of AD Actions on Quantity of Imports

	Named				Non-Named			
	ln Quantity (FE)	ln Quantity (FE)	ln Quantity (IV)	ln Quantity (IV)	ln Quantity (FE)	ln Quantity (FE)	ln Quantity (IV)	ln Quantity (IV)
ln Quantity, t-1	0.134	0.136	0.251	0.250	0.120	0.133	0.201	0.192
	(0.020)**	(0.020)**	(0.061)**	(0.061)**	(0.018)**	(0.019)**	(0.040)**	(0.041)**
ln Duty, year+1	-0.271		-0.294		0.128		0.122	
	(0.048)**		(0.057)**		(0.036)**		(0.038)**	
ln Duty, year+2	-0.237		0.065		0.182		0.041	
	(0.056)**		(0.067)		(0.041)**		(0.040)	
ln Duty, year+3	-0.195		-0.003		0.240		0.053	
	(0.067)**		(0.073)		(0.046)**		(0.043)	
Aff Dec, year+1		-1.130		-1.134		0.391		0.356
		(0.181)**		(0.200)**		(0.155)*		(0.144)*
Aff Dec, year+2		-0.934		-0.910		0.650		0.615
		(0.216)**		(0.319)**		(0.187)**		(0.226)**
Aff Dec, year+3		-0.921		-1.061		0.853		0.816
		(0.263)**		(0.428)*		(0.226)**		(0.304)**
Neg Dec, year+1		-0.486		-0.376		0.265		0.157
		(0.183)**		(0.203)		(0.163)		(0.154)
Neg Dec, year+2		-0.452		-0.282		0.123		0.112
		(0.215)*		(0.315)		(0.195)		(0.239)
Neg Dec, year+3		-0.435		-0.448		0.553		0.674
		(0.259)		(0.425)		(0.235)*		(0.324)*
Settled, year+1		-0.628		-1.100		0.147		0.027
		(0.237)**		(0.280)**		(0.210)		(0.208)
Settled, year+2		-0.543		-1.030		0.282		0.186
		(0.265)*		(0.406)*		(0.241)		(0.313)
Settled, year+3		-1.068		-1.774		-0.111		-0.154
		(0.317)**		(0.539)**		(0.276)		(0.407)
Observations	3167	3167	2501	2501	1535	1535	1235	1235
R-squared	0.75	0.75	---	---	0.91	0.91	---	---
%Δ in dependent variable per unit change in								
Aff Dec, year+1		-68.23%		-68.45%		46.02%		41.32%
Aff Dec, year+2		-61.60%		-61.73%		88.16%		80.27%
Aff Dec, year+3		-61.53%		-68.41%		128.73%		116.01%
Neg Dec, year+1		-39.52%		-32.73%		28.58%		15.58%
Neg Dec, year+2		-37.84%		-28.23%		10.92%		8.73%
Neg Dec, year+3		-37.41%		-41.65%		69.12%		86.14%
Settled, year+1		-48.13%		-68.00%		13.31%		0.58%
Settled, year+2		-43.89%		-67.13%		28.71%		14.74%
Settled, year+3		-67.33%		-85.33%		-13.89%		-21.09%

Standard errors in parentheses; constant and year dummies not reported
* significant at 5% level; ** significant at 1% level

Table 5
Impact of AD Actions on Unit Value of Imports

	Named				Non-Named			
	ln Unit Value (FE)	ln Unit Value (FE)	ln Unit Value (IV)	ln Unit Value (IV)	ln Unit Value (FE)	ln Unit Value (FE)	ln Unit Value (IV)	ln Unit Value (IV)
ln Unit Value, t-1	-0.018	-0.018	0.014	0.008	-0.039	-0.046	-0.076	-0.060
	(0.021)	(0.021)	(0.056)	(0.056)	(0.028)	(0.028)	(0.076)	(0.073)
ln Duty, year+1	0.059		0.051		0.025		0.030	
	(0.020)**		(0.023)*		(0.031)		(0.035)	
ln Duty, year+2	0.044		-0.020		-0.018		-0.046	
	(0.023)		(0.026)		(0.035)		(0.038)	
ln Duty, year+3	0.094		0.053		-0.012		0.002	
	(0.028)**		(0.029)		(0.040)		(0.041)	
Aff Dec, year+1		0.297		0.254		-0.015		0.069
		(0.075)**		(0.080)**		(0.132)		(0.137)
Aff Dec, year+2		0.250		0.234		-0.260		-0.197
		(0.090)**		(0.126)		(0.159)		(0.212)
Aff Dec, year+3		0.398		0.435		-0.289		-0.238
		(0.109)**		(0.170)*		(0.192)		(0.288)
Neg Dec, year+1		-0.007		0.013		-0.163		-0.158
		(0.076)		(0.081)		(0.139)		(0.148)
Neg Dec, year+2		0.095		0.152		-0.094		-0.102
		(0.089)		(0.126)		(0.166)		(0.228)
Neg Dec, year+3		0.176		0.331		-0.403		-0.325
		(0.108)		(0.170)		(0.196)*		(0.299)
Settled, year+1		0.078		0.116		-0.298		-0.280
		(0.098)		(0.111)		(0.180)		(0.198)
Settled, year+2		0.065		0.144		-0.193		-0.155
		(0.110)		(0.162)		(0.206)		(0.297)
Settled, year+3		0.186		0.286		-0.415		-0.374
		(0.132)		(0.215)		(0.233)		(0.381)
Observations	3167	3167	2501	2501	1535	1535	1235	1235
R-squared	0.89	0.89	---	---	0.90	0.90	---	---
%Δ in dependent variable per unit change in								
Aff Dec, year+1		34.24%		28.54%		-2.37%		6.15%
Aff Dec, year+2		27.93%		25.34%		-23.84%		-19.72%
Aff Dec, year+3		48.05%		52.26%		-26.49%		-24.43%
Neg Dec, year+1		-1.00%		1.01%		-15.86%		-15.55%
Neg Dec, year+2		9.51%		15.46%		-10.23%		-11.97%
Neg Dec, year+3		18.53%		37.31%		-34.47%		-30.90%
Settled, year+1		7.64%		11.58%		-26.96%		-25.89%
Settled, year+2		6.05%		14.02%		-19.28%		-18.06%
Settled, year+3		19.40%		30.10%		-35.74%		-36.01%

Standard errors in parentheses; constant and year dummies not reported
* significant at 5% level; ** significant at 1% level

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