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**East Asia's Antidumping Problem**

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## East Asia's Antidumping Problem

*Thomas J. Prusa<sup>1</sup>*

### 1. INTRODUCTION

The more things change, the more they stay the same. In the 1970s antidumping (AD) was the most common type of trade dispute, and East Asian countries were the leading targets of these investigations. The same was true in the 1980s. The same was also true in the 1990s. The same is still true today.

For all the hue and cry about safeguards, Super 301, government subsidized exports, etc., AD was, is, and for the indefinite future will continue to be, the undisputed king of protection. Several authors have documented the world's growing AD problem (Miranda et al., 1998; Prusa, 2001; Zanardi, 2004). Each study provides evidence of the growing use and proliferation of AD protection. Prusa (2004) perhaps offers the best evidence, pointing out that in terms of the quantity of trade litigation, AD has lapped the field – several times over. Between 1995 and 2000, WTO members reported 61 safeguard investigations, 115 countervailing duty investigations, and 1,441 AD investigations! Said somewhat differently, over the past 25 years there have been more disputes under the AD agreement than under all the other GATT/WTO trade statutes put together.

While there is considerable disagreement whether AD levels or tilts the playing field, there can be little doubt that East Asian countries have been, and will likely continue to be, the leading targets of AD actions. Simply put, AD is a serious problem for East Asia; by almost any

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<sup>1</sup> THOMAS J. PRUSA is from Rutgers University. The author would like to thank Jorge Miranda and Raul Torres for their assistance in compiling the AD database and Ethel Fonseca for her excellent research assistance. Participants at the Tokyo conference also made a number of very helpful comments that improved the paper.

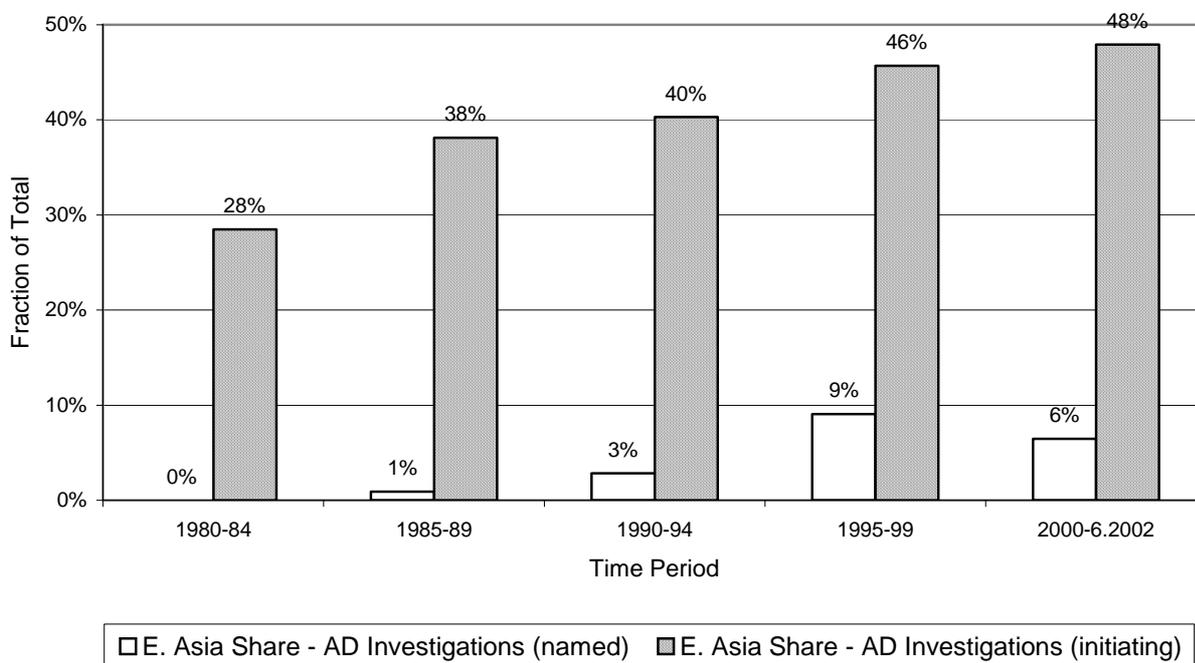
measure East Asian countries are subject to a disproportionate share of AD actions. The extent of the disparity has not been recognized in any previous studies. The goal of this paper is to eliminate this gap in the literature.

For this paper, I review AD disputes over the past 25 years and find that East Asian economies – Japan, Indonesia, South Korea, Malaysia, Philippines, Singapore, Thailand, China-Taiwan, and China-PRC – are not only subject to an extraordinarily large number of AD actions but also account for most of the worldwide *growth* in AD actions. I will show that the growth of AD has largely come at the expense of East Asian countries.

This important lesson is effectively conveyed in Figure 1, in which I calculate the fraction of AD cases filed by all GATT/WTO members targeting East Asian countries. To get a sense of the trend, I divide the sample into five-year sub-periods. As shown, East Asian countries have long been the main targets of AD actions, accounting for about one-third of all AD actions during the 1980s, more than 40% of all AD actions during the 1990s, and almost 50% of all AD actions in recent years. At this time I do not control yet for factors that might explain these numbers. Later in the paper I find similar results when I account for such mitigating factors. Bottom-line: East Asia accounts for a large and growing share of worldwide AD activity.

Another detail that this paper uncovers is that East Asian countries have largely shunned the use of AD. This is also depicted in Figure 1 where I calculate the fraction of AD cases filed by East Asian countries. As seen, East Asian countries generally account for less than 5% of AD filings worldwide. As I will discuss, such restraint is highly unusual. It appears that East Asian countries are outliers on both perspectives – they are subject to a remarkably large number of AD actions but file remarkably few AD actions.

FIGURE 1  
East Asia's Share of Worldwide Total AD Disputes



My hope is that this paper will give readers a better understanding of the patterns of AD by and against East Asian countries over the past 25 years. Whether measured by number of cases or by cases per dollar of trade, East Asian countries look significantly different than other large economies. To a large extent, the trends and patterns are so sharp that simple tables do a good job delivering the message. But, to confirm that other factors are not behind the patterns I also use more formal statistical methods to confirm the findings. For instance, after controlling for factors that might influence filings such as the exchange rate and trade volume, I find that East Asian countries are subject to about twice as many cases as either North American or Western European countries. Moreover, I find the trend in filings against East Asian countries is increasing, by which I mean that in recent years the propensity for countries to direct their AD filings against East Asian countries is growing. One concern is that the growing intensity of AD

use against East Asia is driven by China-PRC. Importantly, I find a rising propensity even if I exclude China-PRC. Looking from the other side of the dispute, I also find that North American countries file more than six times as many cases as do East Asian countries, holding other factors constant. On either side of the AD process, East Asian countries are outliers.

I also estimate how individual East Asian countries fare in the AD process. Interestingly, Japan – the country traditionally cited as an unfair trader – stands out relative to non-Asian countries but is not an outlier relative to other East Asian countries. Japan is in the middle of the pack with respect to East Asian countries. Once I control for other factors I find that countries like Thailand, South Korea, China-Taiwan and China-PRC are all named more frequently than Japan. Countries like Singapore and Hong Kong are named less often than Japan.

Finally, I also control for industry differences in filing propensities. I find that the propensity to file against East Asian countries is not driven by the steel and chemical industries, but is rather systematically reflected in the data. In fact, my results indicate that there is no significant industry effect behind the filing trends.

Before proceeding I note that no evidence is presented here as to whether the AD actions against East Asian countries are warranted, by which I mean I have no evidence that some truly “unfair” behavior is being investigated. Nor is any evidence provided that the actions targeting East Asian countries are less warranted than those targeting other countries. To a large extent the answers to these questions are what one would really like to have. Unfortunately, the data simply do not exist to allow me to answer them. That being said, there is considerable evidence that virtually all AD actions defy basic microeconomic principles and that AD actions, especially those by new users, are simply WTO-consistent protectionism (Finger, 1993; Stiglitz, 1997; Lindsey, 1999; Prusa, 2004). From this perspective, the results in this paper are an alarming

indictment of current AD use and should encourage East Asian countries to lead the charge to reform AD.

The rest of the paper proceeds as follows. In the next section I review the construction of the database. I then summarize the use of AD by and against East Asian economies. In Section 3, I estimate the number of filings using negative binomial regression. In Section 4, I offer some interpretations of the results and concluding comments.

## 2. A LOOK AT THE DATA

### *a. Background*

In order to get a handle on the worldwide use of AD, I reviewed reports submitted to the WTO by member countries. By agreement, since 1980 all WTO members have been required to make semi-annual reports on their use of trade remedies, including AD activity. Using these reports a database of all AD actions filed by WTO members between 1980 and June-2002 was compiled; overall about 4600 AD actions have been reported to the WTO. AD actions initiated by non-WTO members are not in my database.<sup>2</sup> The WTO reports include only basic case information, such as the filing (reporting) country, the affected country, the name of the product being investigated and the date the case was filed. For some cases I also know whether a duty was imposed, but the size of duty is almost never reported. Also, one cannot use the WTO AD reports to track the trade impact because product (tariff) codes are not reported.

Before looking at the patterns in AD use, a couple of comments on the database are in order. To begin with, the country- and product-specificity of AD investigations affects the

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<sup>2</sup> Zanardi (2004) also reports AD activity by non-WTO members such as Taiwan and Russia and PR-China prior to their membership. My statistics do not include these additional disputes. Overall the differences between Zanardi's aggregate statistics and mine are minor.

accounting. AD cases are reported by product against a particular named country. For instance, occasionally an investigation involving a single product will be broken into multiple products and consequently reported as multiple cases.<sup>3</sup> More common, an investigation will name multiple foreign countries, and hence be recorded as multiple cases. Both characteristics increase the number of AD filings as domestic industries seek to widen the scope of protection.

More complicated accounting issues involve EU countries and former USSR republics. First, under EU rules AD cases are not filed by individual countries but on behalf of the entire EU. By contrast, AD cases filed against EU countries name individual countries.<sup>4</sup> For instance, a U.S. AD action against steel beams from France and Germany would be reported as two separate cases. In order to keep the accounting consistent, I have “merged” cases involving the same product filed at the same time against individual EU countries into a single EU case and have classified the affected country as the ‘EU’. This adjustment results in about 300 fewer cases. As a result, the numbers I report in this paper will differ from statistics reported elsewhere (Miranda et al., 1998; Prusa, 2001; Zanardi, 2004). Nevertheless, I feel that combining cases against EU countries allows one a more consistent “balance sheet” of worldwide AD activity.

A different type of accounting problem exists for cases against former Soviet republics. Here the problem has to do with consistent accounting across time. The dissolution of the USSR has resulted in the emergence of many “new” affected countries. Simply put, the geographic coverage captured by a single AD case in the mid-1980s now might require more than a dozen

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<sup>3</sup> For instance, a case against magnesium might be reported as two cases, one involving “pure magnesium” and another involving “alloy magnesium.”

<sup>4</sup> On a handful of occasions a country has reported an AD action against the entire EU.

separate filings. While I make no adjustment for the break-up, one needs to keep this in mind when looking at filing trends over time against Eastern European countries.

Finally, countries are grouped together into geographic regions using World Bank regional classifications. Reporting statistics and trends at the regional level rather than at the individual country level is helpful for two reasons. First, there is the simple matter of presenting the results as expeditiously as possible. Since 1980 about 40 countries have initiated AD actions and almost 100 countries have been the targets of these actions. Breaking the analysis into countries leads to a very real problem of not being able to see the forest for the trees.<sup>5</sup> Second, countries within a given region typically have similar experiences with AD and hence are likely to have similar positions vis-à-vis AD reform.<sup>6</sup>

#### *b. AD – Filing Patterns*

In Table 1, I report the number of AD cases filed since 1980, including subtotals for five-year intervals. As mentioned above, I aggregate the individual country filings to a regional basis in these summary tables.

TABLE 1  
Number of AD Cases Filed by Each Region

Reporting region	1980–6.2002	1980-84	1985-89	1990-94	1995-99	2000-6.02
North America	1236	276	306	308	171	175
Pacific/Oceania	832	228	172	267	114	51
Western Europe	789	154	138	212	199	86
South America	742	0	36	279	264	163
South Asia	275	0	0	15	120	140
East Asia	186	0	6	32	103	45
East and Southern Africa	148	0	0	14	110	24

<sup>5</sup> See Zanardi (2004) for a discussion of AD actions at the country-level.

<sup>6</sup> The one exception is “Pacific/Oceania” where the trends for Australia not only dominate overall statistics but differ from other countries in the region..

North Africa	28	0	0	0	20	8
Central America and Caribbean	24	0	0	0	19	5
Middle East	24	0	0	3	16	5
Eastern Europe	17	0	0	2	11	4
West Africa	0	0	0	0	0	0
Central Asia	0	0	0	0	0	0

Since 1980, North American countries have filed more AD cases than any other region. About 85% of North American cases have been filed by the United States and Canada. Pacific/Oceania is the second heaviest AD-using region. This is almost entirely due to Australia. Western Europe's total of 789 cases (which are primarily EU filings) makes it the third heaviest AD user. In other words, over the long run AD use has been dominated by the four traditional AD users: United States, Canada, Australia, and EU.

When one looks at the filings for the individual sub-periods, however, an important dynamic pattern emerges. In particular, looking across the columns one can see the adoption of AD protection by more and more countries around the world. Early on (1980-84) *all* AD filing activity was confined to three regions, North America, Pacific/Oceania, and Western Europe. Furthermore, the four traditional users account for 99% of these filings. As pointed out by Finger (1993) for all intents and purposes, until the mid-1980s AD was an active policy instrument for only four users.

Since that time AD use has progressively spread throughout the world. During the second half of the 1980s, for instance, South American and East Asian countries began to use AD. By the second half of the 1990s, AD was used by nearly all parts of the world. Today, only the poorest countries in Africa and Central Asia are not active AD users. What is more, the new users have not just dabbled with AD. As discussed in Prusa (2001, 2004) when countries begin to use AD, they typically do so in a big way. Today, many of the most aggressive AD users are

new users. As a result for the last decade the traditional users have accounted for less than 40% of all AD actions (Prusa, 2004).

Looking at the filing totals in Table 1 gives the first sense in which East Asian countries are outliers. Until now, East Asian countries have not turned to AD to protect their domestic industries; as mentioned, this is not the same pattern witnessed by other new users. Countries generally have a difficult time restraining the use of AD. South American and South Pacific countries have embraced AD protection to a far greater extent than have East Asian countries. For instance, since 1985 South American countries have filed about four times as many AD cases as East Asian countries have. Given the ease with which countries can impose AD protection, East Asia's forbearance is unusual.

TABLE 2  
Number of AD Cases Against Each Region

Affected region	1980-6.2002	1980-84	1985-89	1990-94	1995-99	2000-6.02
East Asia	1733	180	247	453	519	334
Western Europe	718	198	111	167	158	84
Eastern Europe	595	96	115	133	158	93
North America	433	104	82	125	86	36
South America	396	39	73	131	94	59
South Asia	139	3	3	48	51	34
East and Southern Africa	71	4	6	15	25	21
Pacific/Oceania	64	26	10	8	11	9
Middle East	62	6	9	11	17	19
Central Asia	51	0	0	31	12	8
North Africa	19	1	0	5	7	6
Central America and Caribbean	18	1	2	3	9	3
West Africa	2	0	0	2	0	0

In Table 2, I report the number of AD cases against countries for each region. I again report the 1980-2002 total and also subtotals for five-year intervals. These statistics and trends depicted sharply contrast with those presented in Table 1. First, over the entire period, East Asia has been subject to 40% of all AD cases – more than twice as many as Western Europe and

almost four times as many as North America. Importantly, the tendency for countries to direct their AD actions against East Asia is robust and is not driven by a single “bad” period such as the Asian crisis of the late 1990s. In four of the five sub-periods, East Asia is the most affected region. Second, Table 2 indicates that the proliferation of AD evidenced in Table 1 can also be seen in the distribution of affected regions, albeit less dramatically. Over time AD actions have been directed at a growing number of countries. The data indicate, however, that the proliferation of AD has had a less dramatic effect on the distribution of affected regions than what was observed in Table 1. For the most part the regions that were the major targets of AD actions in the early 1980s remain leading targets today.

TABLE 3  
Number of AD Cases Against Countries (Leading Targets)

Affected country	1980 - 06.2002	1980-84	1985-89	1990-94	1995-99	2000-06.2002
European Union	529	127	79	117	138	68
China-PRC	468	24	24	143	164	113
USA	354	80	64	105	77	28
South Korea	310	43	49	73	98	47
Japan	301	72	84	63	58	24
China-Taiwan	220	25	43	52	61	39
Brazil	198	27	39	65	42	25
Thailand	120	2	8	37	42	31
India	118	3	3	35	47	30
Indonesia	107	0	1	23	48	35
Malaysia	68	1	7	22	21	17
Singapore	62	6	11	19	11	15

Table 3 breaks out the individual country statistics for the 12 most often targeted countries. Eight of the 12 top targets are East Asian countries. As seen, Japan is the only East Asian country to experience a clear decrease in AD actions. By contrast, six of the East Asian countries – China-PRC, South Korea, China-Taiwan, Indonesia, Malaysia, and Singapore – have experience a significant increase in AD actions over time. Put another way, using 1980-84 as a benchmark, AD actions against all countries other than East Asian countries grew by only 10%

between 1985 and 2002 (average growth rate). By contrast, over the same time frame AD actions against East Asian countries grew by 110%.

The emergence of China-PRC is a major reason for the rising trend of AD use against East Asia. Since the 1980s AD actions against China-PRC have increased five-fold. If we exclude China-PRC from the East Asian totals, we find that between 1985 and 2002 AD actions against East Asian countries grew by 75%. It appears that China-PRC is part of the explanation for the increase but not the whole story. The message is clear: East Asian countries have not only borne the brunt of AD protectionism but also the burden is increasing over time.

Table 4 again breaks out the individual country statistics for the 12 most often targeted countries. But, here I normalize the filing numbers by the value of exports to create an intensity measure. The idea, of course, is that countries that export a lot might be expected to be subject to a larger number of AD actions than countries that export less. To give the normalized filing trends some context, I then re-normalize so that Japan's intensity measure in 1980 is 100. Countries with intensity measures greater (less) than 100 are subject to more (fewer) AD cases per dollar of exports than Japan experienced in 1980.<sup>7</sup> Japan in 1980 seems an apropos benchmark, especially considering that the psychological justification for AD is seemingly rooted in anecdotes about and experiences with Japan (Prestowitz, 1988; Mastel, 1998).

TABLE 4  
Subject Intensity, Affected Countries (Leading Targets)

Affected country	1980 - 06.2002	1980-84	1985-89	1990-94	1995-99	2000-06.2002
European Union	155	264	152	181	94	83
China-PRC	787	683	521	1523	553	653
USA	139	214	168	208	65	42
South Korea	786	1418	785	864	458	405
Japan	176	296	270	171	80	61

<sup>7</sup> Finger, Ng, and Wangchuk (2000) perform a similar calculation.

China-Taiwan	511	787	645	541	271	311
Brazil	884	899	980	1592	462	485
Thailand	709	930	585	1034	432	566
India	818	570	464	1541	721	795
Indonesia	495	-	172	614	523	673
Malaysia	299	251	371	485	157	229
Singapore	249	305	371	261	95	215
<u>Weighted Avg. East Asia</u>	<u>580</u>	<u>707</u>	<u>499</u>	<u>914</u>	<u>394</u>	<u>458</u>

Note: JAPAN 1980=100

The intensity measure leads to several interesting findings. First, notice that almost all the entries for almost all countries are greater than 100. Critics of Japan might be surprised to find that Japan, the United States, and the EU all have similar propensity to allegedly trade unfairly. Japan's average intensity over the whole period is 176, the EU's is 155, and the U.S.'s is 139. Second, as compared with Japan the other leading affected countries are targeted at a much greater intensity. South Korea's intensity is 786, China-Taiwan's is 511, China-PRC is 787. Overall, the subject intensity for East Asian countries averages almost 600. In terms of intensity, however, East Asia is not alone as the other two major AD targets, Brazil and India, also have experienced extremely high intensity rates (average 800). Third, the increasing trend in cases against East Asian countries documented in Table 3 is not nearly as robust when using an intensity measure. For many East Asian countries the trend has been generally downward, suggesting that the propensity to file AD cases against East Asian economics is due in part to their success in exporting.

### 3. MODEL AND RESULTS

As compared to regions with comparably developed economies, the preceding discussion indicates that East Asian countries file relatively few AD actions but are subject to a large number of AD actions. I now turn to statistically quantifying whether East Asia still looks

different once we control for factors that might influence the decision of one country to invoke an AD action against another.

I use the WTO AD reports to create a panel dataset of AD filings by country  $i$  against country  $j$  in year  $t$ . Hence, the dependent variable is the number of AD filings by country  $i$  against country  $j$  in year  $t$ . I include all countries that filed at least one AD case between 1980 and 2001. Countries that have not filed any AD cases are excluded. Similarly, I restrict the set of potential countries that might be investigated to those countries that were named in at least one AD case between 1980 and 2001.

Because countries begin using AD at different times, the panel is unbalanced as I only include country  $i$  in the panel in the years following its first AD filing. For example, Canada, the United States, and the EU are included in the estimates for every year since 1980. By contrast, South Africa is included only since 1994; Mexico is included only since 1987.

It makes sense to include bilateral trade as a macroeconomic control for the tendency for countries to file AD actions. From the preceding discussion it seems possible that East Asia's proficiency at exporting explains the large number of AD cases filed against East Asian countries. To control for this I obtained bilateral values of trade from Statistics Canada, World Trade Database (WTDB), and converted the nominal values into real trade values using the CPI.

Following the discussion of Knetter and Prusa (2003), I also include the real exchange rate as a macroeconomic control. Using a database restricted to the four traditional AD users, Knetter and Prusa find that a real appreciation significantly increases filings. I use bilateral real exchange rates between each country pair. The Economic Research Service of the U.S. Department of Agriculture is a convenient source for bilateral real exchange rates since they report exchange rates in a consistent fashion for virtually all countries in the world. The

exchange rate is defined as foreign currency per unit of domestic currency so that an increase in the exchange rate reflects an appreciation of the filing country's currency. Also, I normalize each country's exchange rate by dividing by the sample average, which in effect means that the mean real exchange rate between each country pair is 1.

Since the number of filings is a non-negative count variable, I estimate the relationship between number of filings and macroeconomic factors using negative binomial regression, which is essentially a Poisson model with a more flexible error structure.

The Poisson regression model assumes that the incidence rate  $v_{ijt}$  (the rate per unit time at which happenings occur) is a function of some underlying variables as follows:

$$v_{ijt} = \exp(\beta_0 + \beta_1 x_{1ijt} + \beta_2 x_{2ijt} + \dots + \beta_k x_{kijt}).$$

The expected number of occurrences is equal to this incidence rate multiplied by the exposure (the number of units of time over which observations are measured). The exposure is uninteresting in this application since each observation in the data set is the number of AD filings in a one-year interval.<sup>8</sup>

One feature of the Poisson model that is frequently violated in applications is the equivalence of the expected value and variance of a Poisson random variable. Often, count data exhibit overdispersion with respect to the Poisson model – i.e., the variance of the observed counts exceeds their mean. This is certainly true for my data, with the variance approximately three times the mean. In such cases, an alternative is to assume that the data are generated by a negative binomial random variable, which allows for a variance that is greater than the expected value of the distribution. The regressions use random effects for each filing-affected country pair

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<sup>8</sup> Because I only have six months of data for 2002 I restrict the sample to 1980-2001 for the regression estimates.

In Tables 5 and 6, I present a series of specifications in an attempt to quantify whether East Asia looks different than other regions. As is common when using Poisson or negative binomial regression, I report “incidence rate ratios” associated with the parameter estimates. The incidence rate ratio (IRR) is the ratio of the counts predicted by the model when the variable of interest is one unit above its mean value and all other variables are at their means to the counts predicted when all variables are at their means. Thus, if the IRR for the real exchange rate is 1.50, then a one unit increase in the real exchange rate (a 100% real appreciation given that we use the log of the real rate) would increase counts by 50% when all other variables are at their means. The t-statistics are reported for a test of the null hypothesis that the IRR=1, which would imply no relationship between the dependent variable and the regressor.

Let’s begin by looking at the results in Table 5. Specification A is the benchmark specification where I include the real exchange rate and bilateral trade flows.<sup>9</sup> The estimates indicate that a real appreciation leads to an increase in filings; specifically, a one unit increase in the real exchange rate will increase filings by about 30%. The estimated impact is similar across all specifications. The parameter estimates are consistent but somewhat smaller than those reported in Knetter and Prusa (2003). Given that Knetter and Prusa’s sample was restricted to only the four traditional users, these estimates indicate that real exchange rate movements have a smaller effect for the new users. Since Knetter and Prusa argue that the exchange rate effect is driven by the injury determination, one interpretation of these parameter estimates is that new users conduct their injury test differently.

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<sup>9</sup> I experimented with other lag structures and differencing the regressors. None of the main results are affected by the choice of lag structure and/or differencing.

The results also indicate that an increase in imports from country  $j$  increases the number of AD petitions. This is the expected result, as more imports mean injury will be easier to show.

In specifications B, C, and D, I include additional regressors in order to test whether East Asia stands out. In specification B, I include region dummies for each named (or affected) country. The excluded region is North America. The parameter estimate (IRR) for East Asia is approximately 2, which means that holding the real exchange rate and trade values constant, East Asian countries are subject to twice as many AD actions as North America. Two comments are in order. First, the effect is large and statistically significant. Second, East Asia is the *only* region to have a statistically significant incidence rate greater than one. All other regions have either an estimated IRR less than one (i.e., a negative effect) or are statistically insignificant (i.e., same propensity as North America). What does this mean? With respect to AD, East Asia is definitely treated differently than all other parts of the world.

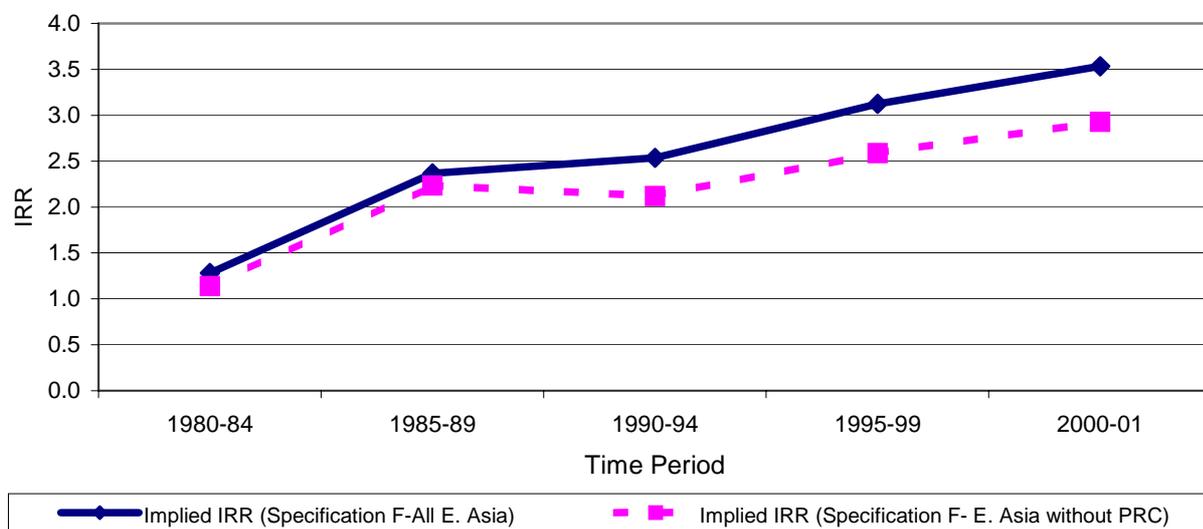
In specifications C and D, I also control for potential filing country differences. In specification C, I allow the impact to vary by region. Once again the excluded region is North America. Interestingly, I find that East Asia has an estimated IRR of 0.15; only Eastern Europe has a smaller estimate. The estimate implies that for a given level of exchange rate and bilateral trade, East Asian countries file about 1/6 as many AD actions as North America. In specification D, I control for filing country differences with a single “traditional user” dummy. With an estimated IRR of 3.04, the results indicate that traditional users are far more likely to file AD actions than are new users.

In Table 6, I examine whether the propensity for East Asia to be targeted has changed over time. From Table 5 we saw that East Asia was the big outlier, the region with the largest propensity to be named. Given this result, in Table 6, I reduce the regional effect to a single

“East Asia” dummy variable. In effect, I measure East Asia against all other regions. As shown in specification E, East Asia’s IRR is 2.96 relative to all other regions. This estimate is significantly larger than what was found in Table 5 but this makes sense; in Table 5, East Asia was measured relative to North America; because many regions have IRRs less than 1, the Table 6 estimate should be larger than what is reported in Table 5.

In specification F, I allow filing patterns to vary by time. Here the estimates are measured relative to all regions other than East Asia during 1980-84. As seen, once I control for the real exchange rate and bilateral trade, the (IRR) time dummies are less than one. This means that over time all other (non-East Asia) countries are being named less often. Interestingly, the same effect is not found for East Asia. In fact, I find the opposite trend – East Asian countries are being named more and more over time. The baseline East Asian IRR is 1.28; the 1985-89 IRR is 1.85; the 1990-94 IRR is 1.98; the 1995-99 IRR is 2.44; the 2000-01 IRR is 2.77. Due to the non-linear functional form, the actual IRR for each time period is a non-linear combination of the benchmark IRR and the period effect. The actual time period IRR is depicted in Figure 2 below. As shown, the East Asian IRR is increasing over time. As a result, the average period IRR is consistent with the effect reported in specification E.

FIGURE 2  
Implied IRR - Specification F



As discussed above, it would be reasonable to conjecture that the positive time trend is driven by China-PRC. Without the emergence of PRC, it is conceivable that the East Asia trend might look more like the other regions. To check this, I re-ran specification F dropping China-PRC from my sample. As shown in Figure 2, China-PRC does pull up the overall East Asian effect. Nevertheless, the trend for the rest of East Asia is still positive, particularly over the past decade. Thus, with or without China-PRC in the sample, the conclusion is the same. There is an increasing tendency for East Asian countries to be targeted in AD actions.

In Table 7, I focus on individual East Asian countries. The specification is similar to specification E (reported in Table 6) but now I estimate the propensity for individual East Asian countries to be named. The results confirm the findings suggested by the previous tables: namely, the propensity for AD to be used against East Asian countries is not limited to one or two countries. I find that all of the major East Asian economies – Japan, Indonesia, Thailand, China-Taiwan, South Korea, and China-PRC – have statistically and economically significant propensity to be investigated. Japan is about twice as likely to be named in an AD investigation

as a non-East Asian country; Indonesia, China-Taiwan, and South Korea are about four times as likely to be named and China-PRC is almost six times as likely to be named. Overall, the results indicate that AD is not simply a problem for just the PRC or just the PRC and Japan; rather, there is a general tendency for almost all East Asian countries to be named in AD complaints.

In Table 8, I investigate whether the results are driven by the two key industries, steel and chemicals. These two industries have traditionally been intensive AD users. It also turns out that East Asian countries have substantial cost advantages in these two industries. So it is possible that the tendency for East Asian countries to be investigated is driven by just two industries.

To check on this issue I totaled the AD cases filed by AD filings by country  $i$  against country  $j$  in year  $t$  in industry  $s$ , where  $s$  denotes whether the disputes involve “steel/chemicals” or “all other industries”. For example, suppose country  $i$  filed 5 cases against country  $j$  in year  $t$  and 3 cases involved steel/chemicals and 2 cases involved other industries. This filing pattern will result in two observations in year  $t$ , the first with 3 cases and the other with 2 cases. As compared with the original dataset (which did not incorporate any industry filings), the new dataset has about twice as many observations.<sup>10</sup>

Specification H, which measures the potential industry effect, clarifies this unexpected result. In this specification I allow the industry effect to vary by region. Thus, I measure a steel/industry effect for South America, an effect for South Asia, etc. Interestingly, I find that none of the industry dummies are statistically significant. This suggests that the propensity of East Asian countries to be named in AD cases is not driven by industry. If anything, the results

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<sup>10</sup> The number of observations does not double because I cannot estimate an industry effect for a country that never files a steel/chemical case.

indicate that once we control for bilateral trade there is a small propensity for steel and chemical industries to be named slightly less often than others.

#### 4. CONCLUDING COMMENTS

In this paper I have presented compelling evidence that East Asian countries are subject to far more AD investigations than any other region in the world. Whether I simply looked at the number of filings or controlled for exports, East Asia stands head and shoulders above all others. When I used statistical techniques to control for macroeconomic factors that might influence filing patterns, I found that East Asia was the only region to have a statistically significant affected intensity greater than North America. In addition, I found that unlike all other regions that have a negative time trend, the time trend for East Asia is positive. This means that over time more and more cases are aimed at East Asia, yet all other regions seem to be experiencing fewer cases.

What these findings mean, of course, is open to debate. In this paper I present no evidence on the question whether the cases against East Asia are appropriate. AD proponents such as Prestowitz (1988) and Mastel (1998) would surely argue that such filing patterns simply indicate that East Asian countries have closed home markets. This is an attractive explanation as it explains both why East Asia is subject to so many AD actions and also why East Asia files so few actions: a closed home market makes it likely that firms will dump in their export markets (meaning the AD actions against East Asia are appropriate) and also make it impossible for foreign firms to compete in Asian home markets (which means that East Asian firms need not resort to AD).

Yet, there is no evidence that the Prestowitz-Mastel view is valid. In fact, given the persuasive evidence presented by Lindsey (1999) and Lindsey and Ikenson (2002), it seems far

more likely that closed home markets (if such an allegation were true) have absolutely nothing to do with the AD patterns documented. More plausibly, East Asia's AD problem first and foremost has to do with how these countries have developed. East Asian countries export manufactured goods, and AD is primarily used against manufacturing.

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