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**U.S. Antidumping Enforcement and Macroeconomic
Indicators:
What Do Petitioners Expect, and Are They Correct?**

by

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U.S. Antidumping Enforcement and Macroeconomic Indicators: What Do Petitioners Expect, and Are They Correct?

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ABSTRACT

We contribute to the literature on the political economy of U.S. antidumping enforcement through two related empirical studies. First, we analyze the pattern – and macroeconomic determinants -- of country-specific antidumping petitions filed by U.S. firms against 15 countries between 1981 and 1998 (examining quarterly data). Importantly, we suggest that “learning” by petitioners about the administration – in practice -- of the U.S. trade laws has led to changes in the roles of these macroeconomic determinants over time. We then investigate the effect these same indicators have had on the success experienced by petitioners during that same time period, explaining outcomes in 473 U.S. antidumping cases by macroeconomic, country, and industry effects.

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Robert M. Feinberg*

I. Introduction

Despite a voluminous literature over the past 20 years on the economic causes and consequences of antidumping policies, both in the U.S. and in other countries,¹ little work has been done on the extent to which patterns of antidumping filings and enforcement have been driven by macroeconomic phenomena. We contribute to this literature here, by first analyzing the determinants of country-specific antidumping petitions filed by U.S. firms against 15 countries between 1981 and 1998 (examining quarterly data), and then explaining the outcomes of 473 petitions filed during this period. Importantly, we suggest that “learning” by petitioners about the administration – in practice -- of the U.S. trade laws has led to changes in the roles of macroeconomic determinants over time, reflecting the perceived relative importance of the two U.S. government agencies involved in the antidumping process, the International Trade Administration of the U.S. Department of Commerce (“Commerce”) and the U.S. International Trade Commission (“ITC”). We then show that petitioners’ expectations on the role of exchange rate fluctuations in ITC decisions seem consistent with observed outcomes.

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¹ For an excellent survey, see Blonigen and Prusa (2003). Also, see the links at Bruce Blonigen’s web site -- <http://darkwing.uoregon.edu/%7Ebruceb/adpage.html>.

At first glance, the paucity of studies seeking macroeconomic causes of this form of trade protection should not be surprising; antidumping rules seem to be written so as to require specific case-by-case analysis. For example, the U.S. provisions require dumping and material injury resulting to a domestic industry by reason of that dumping. The dumping determination involves a comparison of home country and U.S. prices by exporters on a narrowly-defined product (with secondary measures involving cost comparisons or price comparisons involving 3rd countries in certain circumstances). The material injury finding looks to indicators of industry performance but (whether the link is formally made or not) requires some causal link from the pricing behavior of exporters to the U.S. market. In what follows, we explore how macroeconomic indicators can influence the antidumping process, discuss the limited previous economic research on this topic, and present and interpret some new results.

II. Dumping, Economic Growth and Exchange Rates

Given the case-specific requirements for finding dumping (determined in the U.S. by Commerce) and “material injury” (determined by the ITC), what role can macroeconomic conditions play in all this?² First, consider the dumping determination.³ Let the home market price (in foreign currency) be P_F and the exporter’s price (after adjustments for transportation and distribution) in the US (in dollars) be P_{US} . In the absence of dumping, $P_{US} = P_F/e$, where e is the foreign currency (or external) value of the dollar. (Dumping would require $P_{US} < P_F/e$.)

² Knetter and Prusa (2003) present a formal model of the effects discussed below in the NBER Working Paper version of their paper.

³ While the following discussion is based on the “price comparison” analysis of dumping, similar results would obtain from an analysis of the “cost comparison” approach.

If the U.S. experiences an expansion, we would expect an increased demand for most products. An exporter would likely raise P_{US} , *cet. par.*, therefore *reducing* the likelihood of dumping. In a recession, in contrast, exporters would likely reduce price in the US market to retain market share, *increasing* the likelihood of dumping.

Similarly, an appreciation of the dollar (e increasing) would *reduce* the likelihood of dumping if foreign exporters refrain from passing on the full reduction in price dictated by the exchange rate change, taking higher profit margins on sales in the U.S. market instead.⁴ A depreciation would *increase* the likelihood of dumping as exporters will likely reduce profit margins on U.S. sales to avoid having to raise U.S.-dollar prices to uncompetitive levels.

But potential domestic petitioners know they also must show injury caused by dumping. While a true causal (or “but for”) analysis of material injury may not imply a clear role for macroeconomic determinants, it is reasonable for domestic petitioners to anticipate that their chances of convincing the ITC that they have been harmed by dumping are greater the weaker is the industry’s general condition. The probability of any given industry experiencing a decline will clearly be larger the weaker is the overall US economy. This implies that an economic expansion would *reduce* the likelihood of

⁴ Such incomplete passthrough is certainly thought to be the norm – see Goldberg and Knetter (1997) for an excellent survey of the passthrough literature. See Kim (2000) for a discussion of the treatment of exchange rate movements in dumping margin calculations, both in the US and more generally under WTO rules.

generating a finding of injury by reason of dumping,⁵ and a dollar appreciation (which inevitably will lead to lower import prices and increased import competition) will *increase* the likelihood of receiving a positive injury determination.

Considering both parts of the equation – the likelihood of convincing Commerce of dumping, and the likelihood of convincing the ITC of injury – we see that the business cycle effects on the antidumping filing decision are unambiguous. An expansion, *cet. par.*, should lead to reduced petitions. But, the exchange rate effect is unclear; an appreciation of the dollar may make a showing that dumping exists less likely, but make injury easier to show. Of course, any impact of macroeconomic determinants depends on the willingness of the appropriate government agencies to consider these as relevant to the case (as opposed to purely case-specific determinants).

As noted above, there has been little previous empirical evidence. Feinberg (1989) found evidence of a negative relationship between U.S. antidumping and countervailing duty petitions (lumped together) against the 4 leading target countries and country-specific real exchange rates. While this tends to support what might be called a “technical” view of antidumping filing (i.e., occurring more frequently when the rules indicate more likelihood of dumping actually occurring), it should be noted that the time period chosen (1982-87) was in the period shortly after major changes in the U.S. trade

⁵ Note the distinction between this point – that an overall economic expansion reduces the pool of US industries likely to be able to convince the ITC of injury, and thus reduces the likely number of petitions filed – and the one made below in explaining the success of petitions, which is that *given the filing of an antidumping petition* an industry is more likely to show injury as the aggregate economy is performing better.

laws (among other things giving Commerce, instead of the U.S. Department of Treasury, the responsibility for determining dumping).⁶

It is quite likely that in those early years petitioner attorneys did not realize the extent to which general macroeconomic trends might be relevant to the outcome of a case or that getting over the Commerce hurdle (i.e., a finding of “dumping”) would be no problem – Knetter and Prusa (2003) note that over a 20 year period only 3 percent of petitions have been rejected by Commerce on these grounds. If petitioners anticipate that a finding of dumping is a virtual certainty, and the focus turns to persuading the ITC of injury to the domestic industry, the expected role of exchange rates on the filing decision is more likely to turn to a positive effect of a dollar appreciation.

Knetter and Prusa do find convincing evidence – after examining a broader and longer data set – that the effect of exchange rate movements on antidumping is in fact now positive.⁷ They look at annual target-specific filings in 4 areas (Australia, Canada, the EU, and the US) and find both a strong positive impact of currency appreciation and a strong negative impact of growth in GDP. They experiment with limiting their analysis

⁶ It also should be noted that as the first surge of US dumping cases occurred only in 1982, petitioner attorneys (and those within domestic companies who hired them) had little previous experience at that point in how the two administering agencies would deal with these cases. While there have been subsequent changes in the antidumping procedures (and of course the creation of the WTO) since the 1979 Trade Act, it seems clear that the trend of making an affirmative decision easier to obtain began at that point.

⁷ Earlier, Leidy (1997) had found that declines in real GDP led to increases in combined antidumping and countervailing duty petitions in the US over the 1980-95 period (and significant in some specifications was a positive effect of real dollar appreciation). However, the analysis was based on just 16 annual observations on aggregate filing data (and combining the two types of cases is problematic given that -- while the ITC’s injury analysis is the same -- the Commerce determination is quite different and may respond to different determinants in the two types).

to the sample of target countries and time period used in Feinberg (1989) and find there a *negative* (but not significant) impact, concluding that those earlier results were specific to the sample and time period chosen. In what follows, we first replicate the Knetter and Prusa results – only for the US – using quarterly data, and then explain why the patterns of response to macroeconomic phenomena have changed over time.

Of course, in attempting to understand the motivations of petitioners, one would expect that incentives for *filing* cases should be related to prospects for *winning* these cases. It thus is of interest to see if the macroeconomic determinants of filings are also found to be determinants of success in these filings. Starting with Finger et al. (1982), economists have empirically examined the political and economic determinants of U.S. antidumping decisions. More recent work along these lines includes Moore (1992), DeVault (1993) and Hansen and Prusa (1997). While results have varied somewhat from study to study, the basic result is that decisions can be explained by the protection of rents to labor and capital, along with some – but generally not a dominant -- role for political influence.

But these papers have focused on case-specific or industry-specific determinants. No work to date has examined the role of macroeconomic indicators in explaining outcomes. In what follows, after considering the filing decision, we examine 473 U.S. antidumping cases filed between 1981 and 1998 and attempt to explain the determinants of a favorable outcome for petitioners, allowing for both macroeconomic and steel industry effects.

III. Data and Methodology

In this study we first examine the quarterly target-specific antidumping filing decision by U.S. firms over the 1981-98 period. We include petitions against 15 countries representing 57% of U.S. antidumping cases over this period. Some countries needed to be excluded, largely for reasons of political or economic system change over the period which made a consistent time series of dumping petitions and/or exchange rates and consumer price indexes impossible to obtain; the most prominent exclusions are the USSR (and constituent countries), China, and Germany. The countries we include and some descriptive information on filings against them are listed in Table 1. These countries are a nice mix of developed and developing, major and lesser US trading partners, and show considerable geographical dispersion.

We pool the 72 quarters of information for each country yielding 1080 observations. Using the Knetter and Prusa approach as our point of departure, we employ their technique of using a negative binomial regression approach with random target country effects – though we use quarterly data rather than their annual observations, and focus only on US petitions (while they examine Australian, Canadian, and EU filings as well). Our data on antidumping filings are taken from Bruce Blonigen’s website (cited in footnote 1) supplemented by the U.S. International Trade Commission website (www.usitc.gov). Exchange rate and GDP data were obtained from the on-line version of *International Financial Statistics*.

Our econometric specification is quite simple. We assume that the number of antidumping cases filed by U.S. firms against a particular country in a particular quarter is determined by the state of the U.S. economy – measured by 3-year growth in real GDP – and by the one-year lagged bilateral real exchange rate, REXCH, (weighted by relative CPI movements) vs. that country (the latter variable expressed in log form).⁸ We then test to see if these effects have changed over time and in which direction.

In examining case outcomes, we use the same data sources indicated above. Our sample consists of 473 cases, involving the same 15 countries listed in Table 1. Summary statistics on the distribution of cases across countries and case outcomes are presented in Table 2. Among other things, it is interesting to note that cases against Japan represent roughly 20 percent of the antidumping investigations in our sample. South Korea and Taiwan tie for second with 11 percent each. The iron and steel sector was responsible for more than one-third of all cases.

In defining success resulting from antidumping petitions, we consider two alternative definitions -- both the probability of an affirmative decision by the ITC and the probability of all outcomes other than a negative decision (we refer to this as a “positive” outcome), the latter definition including “suspension agreements” and

⁸ This specification is that used by Knetter and Prusa. It is motivated by the fact that the ITC examines a 3-year window in judging the question of material injury to a domestic industry, however pricing issues (for which exchange rate movements would seem most relevant) are usually examined over a shorter (6 month to one year) time frame.

“terminated” cases (both often indicative of an agreement between petitioners and respondents).⁹

How will macroeconomic indicators affect the odds of success? As noted earlier, injury to the domestic industry may be easier to claim before the ITC as the dollar appreciates and import prices fall, predicting a positive impact. The predicted impact of overall US economic growth initially seems counter-intuitive: while strong growth would be expected to reduce the likely pool of industries seeking import relief (and the first set of results below support this), the effect should go in the opposite direction on the probability of success for those industries which do file a case. An industry with negative indicators in a time of overall US expansion is better-placed to blame a significant part of its woes on unfairly-traded imports than one having the same experience during a recessionary period – this would predict a positive relationship between GDP growth and the likelihood of favorable antidumping outcomes.

IV. Results

We first present results in Table 3 reporting “incidence rate ratios” (IRR), for easy comparison with the Knetter and Prusa results, associated with the estimated coefficients from the negative binomial regression. As they describe (pp. 9-10), the IRR is the ratio of the predicted number of filings with the variable of interest “one unit above its mean value and all other variables ... at their means to the counts predicted when all variables are at their means.” Despite the use here of quarterly vs. annual data, and our use of only

⁹ See Prusa (1992) for a discussion of why withdrawn and terminated cases may bring significant benefits to the domestic industry filing the case.

US vs. their use of four-country filings, the column (1) and (2) results are quite similar (though our estimated impacts are smaller in magnitude).

Our estimated IRR of 2.29 on the one-year lagged real exchange rate implies a 10% real appreciation would increase petitions by 13% with all other variables at their mean; the Knetter-Prusa results imply a 27% increase. Similarly our estimated IRR of 0.98 implies a 2% reduction in petitions associated with a one percentage point increase in the 3-year rate of real GDP growth (the Knetter-Prusa results imply a 7% reduction). We now examine how we get there from the Feinberg (1989) results.

In Table 4, we report in column (1) the coefficient estimates corresponding to the IRRs of Table 3, column (1). We then present coefficient results in column (2) adding interactions of both the exchange rate and economic growth variables with $\ln\text{TIME}$,¹⁰ with time simply the count of quarters starting at the beginning of the sample period. What we find here is that both interaction terms are statistically significant, suggesting strengthening impacts over time. The real exchange rate impact has become increasingly positive over time (while in the early quarters not significantly different from zero), the real GDP growth effect becoming increasingly negative over time (and in fact a positive impact initially).

For a slightly different specification, in column (3) we set $\ln\text{TIME} = 0$ through the period analyzed in Feinberg (1989), essentially assuming that petitioners began learning

¹⁰ Comparable results were obtained with time expressed in levels (vs. logs), and these are available from the author. However, the diminishing marginal “learning” effects over time implicit in the log specification seem more plausible.

only then that Commerce almost always finds dumping margins (and that the ITC might pay attention to macroeconomic indicators affecting the domestic industry). There is now no significant impact of either GDP growth or real exchange rate movements in the earlier period, but a strongly increasing impact of both since then.

A reasonable interpretation is that in the early years after the 1979 Trade Act, potential petitioners may have thought that statutory provisions and case-specific factors were what Commerce and the ITC would examine, so that macroeconomic indicators would have little impact on success of petitions. But as time went on, it became apparent that a dumping finding was a virtual certainty, and the only issue of interest was how the ITC would find on injury. Here, despite efforts in the early and mid-80s by some ITC Commissioners to use a “but-for” (or economic causality) approach, the dominant approach since has focused on industry trends, and both real GDP growth and exchange rate movements will affect these.

Turning now to the explanation of antidumping outcomes, Table 5 presents probit results explaining both *affirmative* decisions and *positive* outcomes (the latter defined as either an affirmative decision or a case withdrawn due to either settlement or termination).¹¹ In addition to country fixed effects for the 15 target countries included,¹² we include a fixed effect to deal with the heavily over-represented iron and steel sector

¹¹ Though not reported there, Chi-square tests easily reject the hypothesis of no collective significant effect of the right-hand side variables.

¹² We employed a random effects approach in the earlier results explaining filings so as to make our results as consistent as possible with the Knetter and Prusa study. However, in explaining outcomes, we estimated the probit equation with fixed country effects in order to investigate possible country bias in ITC decision-making; random effects estimates of the macroeconomic determinants were quite similar though (and are available on request).

(we also present results excluding cases from that sector). There is some suggestion in the results that cases against Japan have been more likely than others to receive an affirmative determination at the ITC, whether or not steel cases are included (that was the only country fixed effect significant at 5%); none of the country fixed effects were significantly different from zero in explaining "positive" outcomes.¹³

Our primary interest, however, is in the role of changes in the real exchange rate and economic growth in the U.S. in determining antidumping outcomes at the ITC. The exchange rate impacts are as predicted, with a ten percent increase in the real appreciation of the dollar (of course, indicating further downward pressure on all import prices), increasing the probability of a positive outcome for petitioners by about 4 percentage points (though not statistically significant when iron and steel cases are excluded), and increasing the probability of an affirmative ITC decision by between 2 and 7 percentage points (depending on whether the iron and steel cases are included or not). Similarly, it is not surprising to find that, *cet par.*, steel industry cases have a 17 percentage point higher rate of yielding a positive outcome than others (and a 13 percentage point higher probability of obtaining an affirmative decision).¹⁴

As for the impact of growth in the economy, an increase of the 3-year cumulative growth rate of US GDP by 10 percentage points *increases* the likelihood of a favorable

¹³ The pattern in the results of a greater likelihood of petitioners winning cases against Japan at the ITC but no impact on the more general category of "positive" outcomes (including settlements and terminated cases) is consistent with a story whereby petitioners are less likely to want to settle or terminate cases against Japanese firms, anticipating a stronger chance of receiving antidumping duties at the Commission.

¹⁴ As for country effects, there is some suggestion of a greater likelihood of success in cases against Japan, though only in the steel industry cases.

outcome by between 13 and 18 percentage points (depending on whether iron and steel cases are included or not, and whether affirmatives or “positive” outcomes are being explained) – highly significant in all specifications. While initially this may seem counter-intuitive, the explanation for this pattern is in fact quite straightforward: when economic growth in the overall economy is weak, an industry has a more difficult time persuading the ITC that its injury is due to case-specific factors, while during strong growth it may be easier to point to anything experienced by the industry which is somewhat weaker as due to “unfairly traded imports”¹⁵. In any event, we do see an interesting dichotomy with stronger economic growth reducing the number of filings, but increasing the probability of success at the ITC (given the filing of a case).¹⁶

V. Conclusions

This paper presents evidence consistent with a significant role for macroeconomic indicators in determining outcomes of US antidumping cases (thus providing macroeconomic incentives for bringing these cases). Of course, case-specific factors play an important role (and future work should attempt to separate out the relative contributions of case-specific and macroeconomic factors). Nevertheless, a significant role for economic growth and exchange-rate pressures seems contrary to the spirit of antidumping rules – aimed at “unfairly traded” imports not global or domestic macroeconomic trends.

¹⁵ Furthermore, if growth is strong, there is more likelihood of demand-driven import surges which may be interpreted as evidence of injury.

¹⁶ Attempts to include a time trend (either by itself or interacted with the macroeconomic indicators) in explaining outcomes proved unsuccessful, with no significant impact (and no qualitative change in other estimated coefficients) of such a trend variable. This is despite evidence presented by Blonigen (2003) of increasing Commerce-determined dumping margins over time, which he attributes in large part to increased use of upward-biased discretionary procedures.

The results presented here can also be interpreted as consistent with an increasingly important role for the ITC relative to Commerce in the antidumping process in the US, as the latter's dumping filing is now regarded as a foregone conclusion. While the magnitude of a dumping duty (determined by Commerce) is certainly important to the parties to an investigation, its importance is mainly in increasing the chances of a positive injury finding at the ITC; beyond a moderate duty, antidumping duties are often prohibitive (so the difference between a 40% and 100% duty may not matter much in terms of actual protection), and actual duties imposed are determined after the case is decided, through a series of administrative reviews.

Of course, nothing in these results says anything about the merits of any particular antidumping case. And a discussion of the wisdom of an antidumping regime more generally is a topic for another time. But these findings do strongly suggest that petitioners have learned since the mid 1980s that macroeconomic phenomena can play a role in antidumping outcomes, despite the stated intent of trade law enforcement to abstract from such effects.

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Table 1. U.S. Antidumping Petitions Against 15 Leading Target Countries* (cases filed 1981-1998)

	Antidumping petitions	% of quarters with a new petition
Belgium	15	11.1%
Canada	38	31.9
France	35	25.0
India	13	11.1
Italy	39	34.7
Japan	93	68.1
Korea	51	43.1
Mexico	26	26.4
Netherlands	13	11.1
Spain	21	16.7
Sweden	13	9.7
Taiwan	51	44.4
Thailand	10	11.1
United Kingdom	34	25.0
Venezuela	20	19.4

*This is not a list of the 15 leading target countries. As explained in the text, several countries (Brazil, China, Germany, and countries of the former USSR) were excluded from the analysis due to data difficulties arising from changes in the country's boundaries or in obtaining reliable measures of market-based real exchange rates over the time period.

Table 2 -- Summary Statistics on Case Outcomes (n= 473 cases)

	Mean	Standard Deviation
Affirmatives	0.431	0.496
Negatives	0.410	0.492
Suspended	0.015	0.121
Terminated	0.144	0.351
1-yr real exchange rate change (%)	1.731	13.777
3-yr real GDP growth (%)	8.658	4.836
Belgium	0.032	0.175
Canada	0.080	0.272
France	0.074	0.262
India	0.027	0.164
Italy	0.082	0.275
Japan	0.197	0.398
Korea	0.108	0.310
Mexico	0.055	0.228
Netherlands	0.027	0.164
Spain	0.044	0.206
Sweden	0.027	0.164
Taiwan	0.110	0.313
Thailand	0.021	0.144
United Kingdom	0.072	0.259
Venezuela	0.042	0.201
Iron/steel	0.370	0.483

Table 3. Negative Binomial Estimation of Determinants of Quarterly U.S. Petitions (Random Target Country Effects), IRRs for Comparison with Knetter and Prusa Results

	(1)	(2) K-P Results*
<i>ln</i> REXCH (-1 year)	2.29 (2.68)	3.67 (2.80)
RGDP (3-yr%Growth)	0.98 (-1.82)	0.93 (-2.05)
Observations	1080	74

Estimates are reported as “incidence rate ratios”. z-statistics reported for a test of no effect on filings (which corresponds to an IRR value of 1.0).

* These are as reported in Table 3, column (3) of Knetter and Prusa (2003).

Table 4. Negative Binomial Estimation of Determinants of Quarterly U.S. Petitions (Random Target Country Effects), Coefficient Estimates (1080 observations: 15 countries, 72 quarters --1981-1998)

	(1)	(2) <i>lnTIME</i> >0 throughout	(3) <i>lnTIME</i> =0 until 1988
<i>lnREXCH</i> (-1 year)	0.828 (2.68)	0.487 (1.43)	0.518 (1.52)
RGDP (3-yr%Growth)	-0.025 (-1.82)	0.151 (2.07)	0.007 (0.44)
<i>lnTIME</i> * <i>lnREXCH</i> (-1 year)		0.079 (1.96)	0.042 (2.75)
<i>lnTIME</i> *RGDP (3-yr%Growth)		-0.054 (-2.44)	-0.025 (-3.52)
Constant	-3.633 (-2.55)	-3.134 (-2.10)	-2.353 (-1.49)

z-statistics reported below estimated coefficients.

Table 5 -- Probit Results on Outcomes

	Explaining Affirmatives w/o iron/steel		Explaining Positive Outcomes w/o iron/steel	
Iron/steel	0.134 (2.49)	--	0.172 (3.31)	--
1-yr RER change	0.0024 (1.31)	0.0074 (2.79)	0.0043 (2.39)	0.0036 (1.35)
3-yr RGDP change	0.0170 (3.21)	0.0182 (2.66)	0.0131 (2.52)	0.0164 (2.40)
n	473	298	473	298

Coefficients presented are actually marginal effects

z coefficient is in parentheses, for test of null hypothesis that underlying coefficient =0

Not reported here are country fixed effects