EFFECTS OF UNFAIR IMPORTS ON DOMESTIC INDUSTRIES

U.S. Antidumping and Countervailing Duty Cases, 1980 to 1988

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PREFACE

The authors are grateful to a number of people who contributed, in various ways, to the preparation of this report. Within the Commission, we had the benefit of constructive comments and suggestions from Keith Anderson, Ron Bond, Timothy Daniel, John Morris, Howard Morse, Paul Pautler, and John Peterman. Special thanks go to Susan Painter, Lynn Carpenter, Carolyn Samuels, and Cheryl Williams for preparing the data and to Vera Chase, Dolly Howarth, and Efthemia Stewart for editorial assistance.

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We are especially grateful to Anne Brunsdale and Susan Liebeler, both former Chairmen of the U.S. International Trade Commission, for giving each of us the opportunity to work on their staffs, and see up close what is involved in antidumping and countervailing duty cases.

Finally, as usual, remaining errors or shortcomings are the responsibility of the authors alone.

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EXECUTIVE SUMMARY

In recent years the debate in the United States about trade policy has focused on the issue of fairness. There is widespread belief that unfair trade practices, including sales of goods at less than fair value (otherwise known as dumping) and subsidization of industries by foreign governments, have injured American industries, driven firms out of business and created unemployment. As a result of this belief, the United States has on several occasions amended its laws against dumped and subsidized imports, each time making it easier for domestic industries injured by such imports to obtain relief.

Despite the importance of this debate, its central premise that unfairly traded imports have been a serious problem for American business has remained largely unexamined. This report analyzes the effect of dumped and/or subsidized imports on competing domestic industries between 1980 and 1988. This time frame was chosen because it falls between two substantial changes in the law, the Trade Act of 1979 and the 1988 Omnibus Trade Act. We develop an economic methodology that estimates what the performance of the domestic industries competing with dumped or subsidized imports would have been had such imports not been unfairly traded. By comparing this estimated performance with the actual performance of these industries, we can estimate the effect of unfairly traded imports upon domestic industries. By making certain assumptions about the parameters of the model, we compute upper bounds on the effect of unfairly traded imports. By changing these assumptions, we obtain successively tighter bounds.

During our chosen time frame, the U.S. International Trade Commission made decisions on 221 antidumping or countervailing duty cases. There is sufficient public information available concerning 179 of these 221 cases to permit us to estimate injury to domestic industries as the result of unfairly traded imports.

Our estimates indicate that, of these 179 cases, only 53, or less than one third of the total, suffered a loss in domestic industry revenue as the result of unfairly traded imports that could be greater than 5 percent. Only twenty-one cases involved a loss in revenue as the result of unfairly traded imports that could be greater than 10 percent. Because our methodology and the data we rely on consistently overstates injury to the domestic industry, it is likely that an even smaller number of domestic industries have suffered revenue losses this large because of unfairly traded imports.

The results of this report should not, however, be construed to suggest that domestic industries are never, or almost never, injured by dumped or subsidized imports. For virtually all of the 174 cases for which we calculate injury we find

that the domestic industry suffers some measure of injury from unfair imports. The relevant question is not whether there is any injury, rather it is how much injury is suffered. Indeed, the main purpose of this report is to quantify the injury caused by unfair imports. Moreover, this report examines only those instances of dumped or subsidized imports that have resulted in ITC cases. Furthermore, since this report examines only dumped and subsidized imports it is not appropriate to use our results to draw inferences about the magnitude of the effects of other types of unfair practices on domestic industry. Under U.S. law, there are many foreign policies or practices that may be unfair and cause injury to domestic industries. In addition to dumped and subsidized imports, these include foreign government barriers against U.S. exports and infringement by foreign firms of U.S. intellectual property rights.

The industries most severely affected by unfairly traded imports are diverse. While they include agricultural and consumer goods, they are primarily raw materials and industrial products. Only two, 64K DRAMS and EPROMS, might be considered "strategic."

Our findings are at variance with the popular perception that unfair imports inflict widespread harm on domestic industries. One explanation for this result is that our estimates isolate the effect of unfairly traded imports from other economic changes affecting the industries. Firms that compete with unfairly traded imports may be experiencing difficulties independent of import competition. Casual observers might incorrectly infer causality from the coincidence of declining sales, profits, or employment with unfairly traded imports.

CHAPTER 1

INTRODUCTION

Recent debate on U.S. trade policy has been dominated by the fairness issue. It is argued that the United States needs to adopt or strengthen policies that attempt to provide a "level playing field" for domestic producers. This is needed because it is believed that foreigners engage in practices or adopt polices that cause severe injury to domestic industries. These "unfair" practices include the subsidization of foreign producers by their governments and the "dumping" of goods into the U.S. market by foreign producers.

There is a widely held belief that when foreign firms dump their merchandise in the domestic market or receive subsidies from their government, there will be significant job losses and output reductions in import sensitive industries. This perception is reflected by the results of a 1988 opinion poll which found that 77 percent of the respondents agreed with the statement: "Foreign governments are destroying American industry by subsidizing the costs of manufacturing with government funding..."[1] It is also believed that unfair imports cause a further deterioration of the balance of payments. Furthermore, the fairness issue, which was largely confined to dumped and subsidized imports in the early years of the postwar era,[2] has since spread to give an important if not prominent role to practices of foreign governments that restrict U.S. exports.[3] Concern about problems attributed to unfair imports prompted some of the fiercest lobbying efforts in drafting the 1988 Omnibus Trade Act, efforts that sought to increase the "effectiveness" of the Antidumping and Countervailing Duty laws.[4]

Despite the importance of the fairness issue, there is surprisingly little information about the extent to which unfair imports actually harm domestic producers and workers. However, among the modest collection of studies that have estimated the effects of unfair imports, there are two contributions prepared by staff of the Federal Trade Commission ("FTC"). The first dealt with subsidized steel

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[1] Only 14 percent of the registered voters surveyed disagreed with this statement. Cited in paper by Bart Fisher delivered November 1988 to Symposium in honor of Professor Isaiah Frank. Source of survey was Fingerhut/Madison Opinion Research and Communications, cited in Memorandum to the Democratic Congressional Campaign Committee by Vic Fingerhut, May 6, 1988.

[2] See Pearson (1989), p. 73.

[3] The debate on the 1988 Omnibus Trade Act underscored the importance Congress attached to unfair practices of foreign countries that limit U.S. exports and its dissatisfaction with the manner in which the Administrative branch had enforced section 301 of the Trade Act of 1974. Section 301 authorizes the President to challenge foreign government practices that, in effect, reduce U.S. exports. As a consequence of this dissatisfaction, Congress amended section 301, adding the so called "super 301", making it more difficult for the Administration to avoid taking action. For a useful background discussion, see Ahearn, Mendelowitz, and Reifman (1991), pp. 50-52.

[4] Horlick and Oliver (1989), p. 5 and Barshefsky and Zucker (1988), p. 253.

imports from the European Community and four other countries, FTC (1982), and the second dealt with subsidized softwood lumber imports from Canada, FTC (1983).[5] With the exception of these few studies we do not generally know whether unfair imports typically cause domestic industry to contract by 1 percent or by 50 percent. This report attempts to remedy this shortcoming. We focus on dumped and subsidized imports and provide estimates of their effect on U.S. industries by drawing on a large sample of cases investigated by the U.S. International Trade Commission ("ITC") between 1980 and 1988.

A preview of the rest of this report follows. First, in chapter 2 we summarize and provide perspectives for antidumping and countervailing actions in the United States during the period 1980 to 1988. Chapter 2 also explains concepts and procedures encountered in U.S. antidumping and countervailing duty investigations and summarizes the outcomes of these investigations. Readers familiar with these matters may wish to skip this chapter. Chapter 3 discusses in relatively nontechnical terms the economic model we use to estimate the magnitude of injury to domestic industry caused by unfair imports. The main elements of our approach to estimating injury are found in the first four sections; in order to fully understand our empirical results it is important to be familiar with this material. For readers who like diagrams, a simplified version of our model is provided in Figure 3.1. For those who are interested in technical details, the model is described more fully in appendix B. The principal chapter of this report is chapter 4. It presents estimates of the magnitude of injury suffered by domestic industries as a consequence of dumped or subsidized imports. Finally, chapter 5 summarizes our empirical findings, acknowledges some qualifications, and offers several possible interpretations of the findings.

[5] See also FTC (1986). In addition, Mutti (1984) has estimated the effects of subsidized steel imports from the EC and Murray and Rousslang (1988) examine the effects on unfair imports on four industries: brass sheet and strip, unfinished mirrors, candles, and oil country tubular goods.

CHAPTER 2

AN OVERVIEW OF UNFAIR IMPORT CASES

I. Introduction

This chapter takes first steps towards shedding some light on the question of whether unfair imports generally cause severe harm to domestic industries. While our quantitative injury estimates are presented later in this report, in chapter 4, we can gain some useful perspectives about the severity of the impact of unfair imports by reviewing certain information from official investigations by the U.S. government. Accordingly, this chapter provides a selective overview of all investigations of unfair imports into the United States during our sample period, 1980 to 1988. This period was chosen because (1) it is relatively recent, (2) it was an active one for unfair import investigations, and (3) it covers the period between two important changes in the law: the Trade Act of 1979, which implemented the agreements reached in the Tokyo Round, and the Trade Act of 1988.[6]

We begin by discussing terminology (section II) and then survey the outcomes of recent antidumping and countervailing duty investigations (sections III and IV). This is followed by an empirical examination of two major factors that determine the magnitude of injury from unfair imports (section V) and a survey of the size of (measured by employment) and hourly wage rates paid by the domestic industries involved in unfair import cases (section VI). Appendix A explains how we constructed the data sample used in this report.

II. Unfair Imports and Unfair Advantages

In this report, "unfair imports" refer to subsidized or dumped imports, imports which involve certain international trade practices deemed to be unfair under U.S. law.[7] Specifically, subsidized imports occur when foreign firms benefit from

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[6] The Trade Act of 1979 introduced an injury test for most subsidized imports (previously only duty free imports were given an injury test) and made substantial changes in procedures for the administration of the law including, *inter alia*, strict time limits for the various phases, and instructed the President to submit a reorganization plan to improve enforcement of the unfair import laws. [This led to the shift of the responsibility for calculating dumping and subsidy margins from the Treasury Department to the Commerce Department.] For a discussion, see for example, Jackson and Davey (1986), sections 10.2 and 10.3, and Shuman and Verrill (1983), pp. 107-111.

[7] A third type of unfair imports under U.S. law, so called section 337 cases, is not examined in this report. This refers to imports that are sold by means of unfair methods of competition that violate U.S. copyrights, patents, or trademarks. For background see, e.g., Jackson and Davey (1986) section 10.4.

(continued...)

certain subsidies or bounties granted by their governments. Dumped imports occur when foreign firms charge prices that are less than fair value ("LTFV"). Less than fair value pricing arises if (1) foreign firms price discriminate by charging a lower price on sales to the U.S. market than on sales to their home market[8] or to third countries, or if (2) foreign firms charge prices on sales to the U.S. market that are below cost of production ("constructed value").[9]

Under U.S. law, countervailing duty ("CVD") and antidumping ("AD") investigations[10] generally start when a domestic industry (e.g., a group of domestic producers, a trade association, or a labor union) simultaneously files a petition with the Department of Commerce ("Commerce") and with the International Trade Commission ("ITC").[11] Commerce and the ITC jointly administer the countervailing duty and antidumping statutes. Commerce determines the amount of the subsidy and/or dumping that is taking place. The ITC determines whether a domestic industry is injured by unfair imports.

If domestic producers are successful before both agencies, they obtain relief in the form of additional duties levied on the unfairly imported products. The magnitude of the relief is based on subsidy or dumping margins (discussed below) calculated by Commerce. After the additional duties are imposed the unfair imports are no longer unfair.

This is an important point and needs to be underscored. In general, imposition of the additional duties will increase the price of the subject imports in the U.S. market and therefore reduce the amount that enters the country, but not to

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[7](...continued)

Note also that this report does not examine those unfair international practices defined in section 301 of the Trade Act of 1974. These unfair practices include, *inter alia*, policies of foreign governments that (1) limit exports of U.S. companies or (2) do not afford adequate protection to U.S. intellectual property rights. For background, see Jackson and Davey (1986), section 10.5. Also see U.S. Congress, House of Representatives (1988), Omnibus Trade and Competitiveness Act of 1988, Conference Report to Accompany H.R. 3, 100th Cong., 2nd Sess., Report 11-576, pp. 2-3, 62-125, and 550-639.

[8] This is the traditional form of dumping. A foreign monopolist who can separate customers in its home market from customers in the U.S. market (and thereby prevent arbitrage) and who also faces a more elastic demand on sales to the U.S. will maximize profits by charging a lower price on sales to the United States. See e.g., Caves, Frankel, and Jones (1990), pp. 302-305.

[9] According to Horlick (1989), p. 136, since 1980 about three-fifths of all antidumping investigations have been based at least in part on allegations of sales below costs.

[10] The system used by the ITC to record CVD and AD investigations is as follows. CVD investigations are indicated by 701-TA-X, where "701" and "TA" refer to section 701 of the Trade Agreements Act of 1979, and "X" is an investigation number. The first CVD investigation decided under the 1979 Trade Act was 701-TA-1. The same comments apply to AD investigations, except that 701 is replaced by 731. Note that there are a small number of CVD cases involving duty free imports from certain countries, where 701 is replaced by 303.

[11] Although they are rare, unfair import investigations can also be initiated by Commerce. A recent example is the countervailing duty case involving softwood lumber from Canada. See Keith Bradsher, "Canadian Lumber Penalized," New York Times, March 7, 1992, p. 39.

zero. Some quantity of imports will still enter the country. Therefore, to determine the impact of unfair imports on domestic industry it is necessary to estimate the amount by which the quantity of the subject imports will decline. The precise amount will depend on, among other things, the size of the additional duties, which explains why the magnitude of the dumping and subsidy margins is so crucial.

In subsidy cases, Commerce determines the net benefits that constitute subsidies and calculates the *ad valorem* subsidy margin. For example, if Commerce determines that the net benefits per unit of imports are $50 while the price of the imports to domestic purchasers is $100, then the subsidy margin is 0.50 or 50 percent (=50/100). In antidumping cases, Commerce determines both the fair price and the price charged on sales to the U.S., and then calculates the *ad valorem* dumping margin. For example, if Commerce determines that the fair price is $100 (e.g., the price charged in the home market) while the price charged in the U.S. market is $80, then the dumping margin is 0.25 or 25 percent [=(100-80)/80)].

Subsidized and dumped imports are perceived to have an unfair price advantage over competitive domestic products. The question is, how large can the unfair price advantage be? This depends on the difference between the initial price of unfair imports and the price that would have been observed in the absence of subsidies or dumping. Under the usual cost conditions, i.e., constant or increasing marginal costs, the upper limit for the price that would prevail in the absence of the unfair practice equals the initial price increased by the full extent of the dumping/subsidy margin. This is the so-called full pass through case.[12]

To illustrate, consider the specific examples discussed above. In the subsidy example, the perception is that the price of imports should have been $150. This equals the actual price ($100) increased by subsidy margin (50 percent). The argument is that because foreign firms benefit from a subsidy that reduces their costs, the price of the imported product is two-thirds of what it should have been. Therefore imports have an unfair price advantage of 33 percent [=(150-100)/150]. Similarly, in the dumping example, it is believed that the fair price of imports is $100. But the actual price was $80 so the unfair price advantage is 20 percent [=(100-80)/100].

Finally, note that whether there is severe injury to domestic producers depends not only on the magnitude of the unfair price advantage, but also on certain characteristics of the market, including, for example, the degree to which quantity demanded responds to price changes. This will be discussed more fully in the next chapter.

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[12] For an analysis of the pass-through issue in CVD investigations, see Knoll (1989), pp. 63-76. For an analysis of this issue in AD investigations, see Boltuck (1991), p. 99.

III. Potential Outcomes of Unfair Import Investigations

Each countervailing duty or antidumping investigation potentially proceeds through a preliminary phase and a final phase at both the ITC and at Commerce, and throughout is subject to a strict timetable.[13] The first determination is made by the ITC when it announces its preliminary injury finding. If this determination is negative, the investigation is terminated. If it is affirmative, the investigation continues at Commerce. If Commerce determines preliminarily that the subsidy or dumping margin is more than *de minimis* (i.e., greater than 0.50 percent), then importers are required to post bonds or make cash deposits based on the margins. If Commerce determines preliminarily that the margin is *de minimis*, then no bond or deposit is required. Regardless of its preliminary margin determination, Commerce proceeds to a final phase margin investigation. If this final investigation concludes that the margin is *de minimis*, the investigation is terminated. If the final margin is not *de minimis*, the ITC must make a final injury finding. A final ITC negative injury determination terminates the investigation. A final ITC affirmative injury determination results in an order from Commerce to the Customs Bureau to impose antidumping or countervailing duties.

Based on the above discussion, each investigation is eventually resolved in one of five ways:

(1) An investigation will end at the preliminary stage at the ITC if the ITC makes a negative injury determination -- "preliminary ITC negative."

(2) An investigation will end at the final stage at Commerce if Commerce makes a negative determination -- "final Commerce negative."

(3) An investigation will end at the final stage at the ITC if the ITC makes a negative final injury determination -- "final ITC negative."

(4) An investigation will end at the final stage at the ITC if the ITC makes an affirmative injury determination -- "final ITC affirmative."

(5) Finally, an investigation can be ended on other grounds -- "Other."

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[13] For an elaboration of what is involved in the administrative process, see Palmeter (1987). Also, for a useful diagram that illustrates the stages and gives the statutory timetable, see ITC (1989), Annual Report, 1988, p. 24.

Under the first three outcomes, no antidumping or countervailing duty orders are issued. Under the fourth outcome, antidumping or countervailing duty orders are issued and additional duties are imposed.[14] The fifth outcome is a catchall. It includes instances where the petitioner requested the petition be withdrawn. It also includes many more instances where a voluntary restraint agreement ("VRA") was negotiated with foreign countries.[15] Finally, note that there is no sunset provision in U.S. law for antidumping or countervailing duty orders.[16]

IV. Results of Unfair Import Investigations

Between 1980 and 1988, the U.S. made 297 decisions on countervailing duty investigations and 399 decisions on antidumping investigations.[17] Tables 2.1 and 2.2 provide details for each year and also give cumulative totals for the nine year period. Figures 2.1 and 2.2 depict the percent distributions of the cumulative totals.[18]

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[14] Following an affirmative decision by the ITC, importers are required to make cash deposits based on the final subsidy or dumping margins determined by Commerce. The actual duty is calculated later, in an administrative review by Commerce. See Horlick (1989), pp. 126-129.

[15] VRAs may facilitate collusion by foreign firms, in which case they may be subject to U.S. antitrust action. To avoid risk of either criminal prosecution or private civil treble damage suits, U.S. trade negotiators encourage the exporting country to establish formal export controls, to obtain immunity from antitrust actions under the "sovereign compulsion" defense. See Jackson (1989), p. 179.

According to Finger and Murray (1990) the vast majority of investigations that fall in the "other" category resulted in VRAs. VRAs are agreements between the United States and foreign countries in which a foreign country agrees to restrict its exports of certain products to the United States.

Note that there is an important difference between the welfare effects of VRAs and AD or CVD orders. This is because a VRA creates quota rents, which are typically lost to the United States, while an AD or CVD order yields duty revenue, which is retained in the United States. In particular, when a VRA restricts imports to the same degree as an AD or CVD order, the VRA results in a transfer to foreigners of the duties that would have been collected under the AD or CVD order and, therefore, is more costly to the United States than the AD or CVD order.

[16] However, parties may appeal to the Court for International Trade to overturn "final" determinations by Commerce or the ITC, i.e., final in the sense that the investigation is terminated. Thus, an ITC preliminary affirmative determination cannot be appealed because the investigation continues, but an ITC preliminary negative determination ends the investigation and, therefore, can be appealed. Note also that administrative reviews by Commerce may revise dumping or subsidy margins. For discussion of these issues, see Horlick (1989), p. 126-131.

[17] In some investigations the ITC decided that there was more than one product and did not make the same determination for all products. For these "split product determinations" we record each determination.

[18] Although Tables 2.1 and 2.2 report the number of decisions made each year for unfair import investigations, it would have made little difference if we had recorded cases based on the year that petitions were filed. Prusa (1991) reports number of investigations between 1978 and 1988 based on filing date.

TABLE 2.1

ANTIDUMPING CASE SUMMARY (1980-1988)
BY YEAR DECIDED

	1980	1981	1982	1983	1984	1985	1986	1987	1988	Total
Final ITC Affirmative	6	3	5	13	20	11	30	39	8	135
(% of Yr)	18%	27%	10%	39%	40%	14%	45%	64%	53%	
Final ITC Negative	3	1	1	8	10	7	10	15	3	58
(% of Yr.)	9%	9%	2%	24%	20%	9%	15%	25%	20%	
Preliminary ITC Negative	13	2	19	8	4	13	11	2	2	74
(% of Yr)	39%	18%	37%	24%	8%	16%	17%	3%	13%	
Final Commerce Negative	1	2	0	1	5	4	3	3	1	20
(% of Yr)	3%	18%	0%	3%	10%	5%	5%	5%	7%	
Other	10	3	26	3	11	44	12	2	1	112
(% of Yr)	30%	27%	51%	9%	22%	56%	18%	3%	7%	
Year End Total	33	11	51	33	50	79	66	61	15	399 Total

Note: Investigations involving split product determinations are separated with respect to the type of decision for the different products involved. Each type of determination is counted invidually in the above categorization.

Source: Bureau of Economics, FTC.

Under the first three outcomes, no antidumping or countervailing duty orders are issued. Under the fourth outcome, antidumping or countervailing duty orders are issued and additional duties are imposed.[14] The fifth outcome is a catchall. It includes instances where the petitioner requested the petition be withdrawn. It also includes many more instances where a voluntary restraint agreement ("VRA") was negotiated with foreign countries.[15] Finally, note that there is no sunset provision in U.S. law for antidumping or countervailing duty orders.[16]

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Note that there is an important difference between the welfare effects of VRAs and AD or CVD orders. This is because a VRA creates quota rents, which are typically lost to the United States, while an AD or CVD order yields duty revenue, which is retained in the United States. In particular, when a VRA restricts imports to the same degree as an AD or CVD order, the VRA results in a transfer to foreigners of the duties that would have been collected under the AD or CVD order and, therefore, is more costly to the United States than the AD or CVD order.

[16] However, parties may appeal to the Court for International Trade to overturn "final" determinations by Commerce or the ITC, i.e., final in the sense that the investigation is terminated. Thus, an ITC preliminary affirmative determination cannot be appealed because the investigation continues, but an ITC preliminary negative determination ends the investigation and, therefore, can be appealed. Note also that administrative reviews by Commerce may revise dumping or subsidy margins. For discussion of these issues, see Horlick (1989), p. 126-131.

[17] In some investigations the ITC decided that there was more than one product and did not make the same determination for all products. For these "split product determinations" we record each determination.

[18] Although Tables 2.1 and 2.2 report the number of decisions made each year for unfair import investigations, it would have made little difference if we had recorded cases based on the year that petitions were filed. Prusa (1991) reports number of investigations between 1978 and 1988 based on filing date.

TABLE 2.1

ANTIDUMPING CASE SUMMARY (1980-1988)
BY YEAR DECIDED

	1980	1981	1982	1983	1984	1985	1986	1987	1988	Total
Final ITC Affirmative	6	3	5	13	20	11	30	39	8	135
(% of Yr)	18%	27%	10%	39%	40%	14%	45%	64%	53%	
Final ITC Negative	3	1	1	8	10	7	10	15	3	58
(% of Yr.)	9%	9%	2%	24%	20%	9%	15%	25%	20%	
Preliminary ITC Negative	13	2	19	8	4	13	11	2	2	74
(% of Yr)	39%	18%	37%	24%	8%	16%	17%	3%	13%	
Final Commerce Negative	1	2	0	1	5	4	3	3	1	20
(% of Yr)	3%	18%	0%	3%	10%	5%	5%	5%	7%	
Other	10	3	26	3	11	44	12	2	1	112
(% of Yr)	30%	27%	51%	9%	22%	56%	18%	3%	7%	
Year End Total	33	11	51	33	50	79	66	61	15	399 Total

Note: Investigations involving split product determinations are separated with respect to the type of decision for the different products involved. Each type of determination is counted invidually in the above categorization.

Source: Bureau of Economics, FTC.

TABLE 2.2

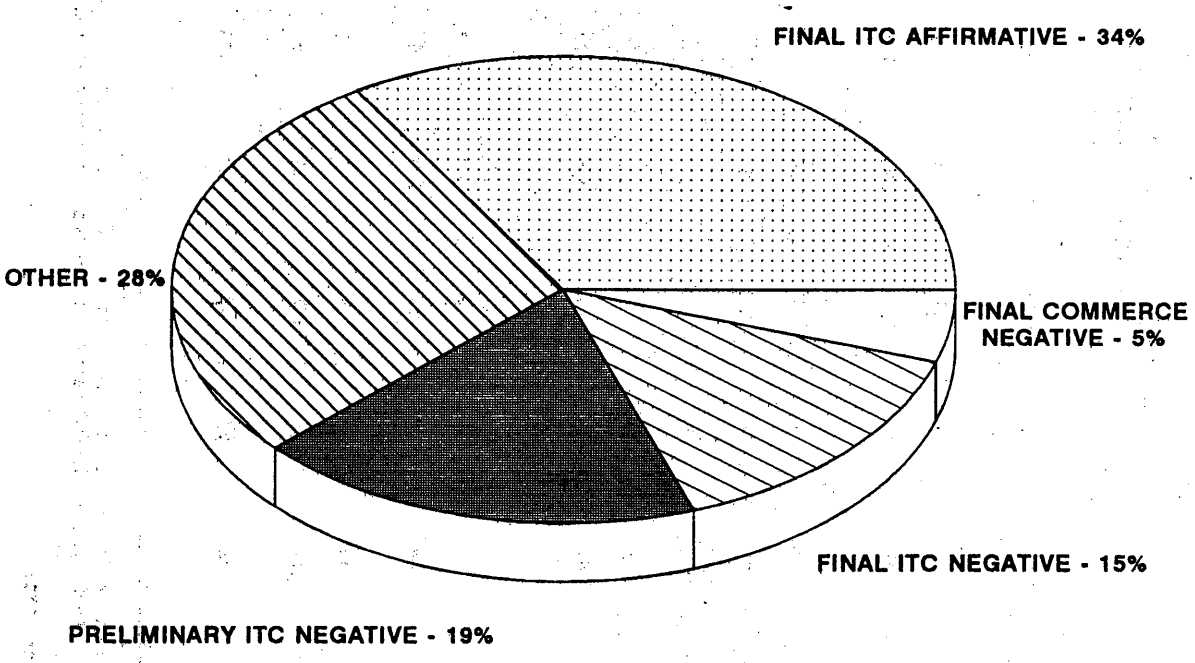
COUNTERVAILING DUTY CASE SUMMARY (1980-1988)
BY YEAR DECIDED

	1980	1981	1982	1983	1984	1985	1986	1987	1988	Total
Final ITC Affirmative	1	1	7	13	5	7	7	10	1	52
(% of Yr)	1%	7%	7%	57%	38%	19%	37%	48%	20%	
Final ITC Negative	50	1	5	1	1	6	4	5	1	75
(% of Yr.)	76%	7%	5%	4%	8%	17%	21%	24%	20%	
Preliminary ITC Negative	3	0	47	1	3	6	4	0	0	64
(% of Yr)	5%	0%	47%	4%	23%	17%	21%	0%	0%	
Final Commerce Negative	0	0	1	4	3	2	2	2	3	17
(% of Yr)	0%	0%	1%	17%	23%	5%	11%	10%	60%	
Other	12	12	39	4	1	15	2	4	0	89
(% of Yr)	18%	86%	39%	17%	8%	42%	11%	19%	0%	
Year End Total	66	14	99	23	13	36	19	21	5	297 Total

Note: Investigations involving split product determinations are separated with respect to the type of decision for the different products involved. Each type of determination is counted invidually in the above categorization.

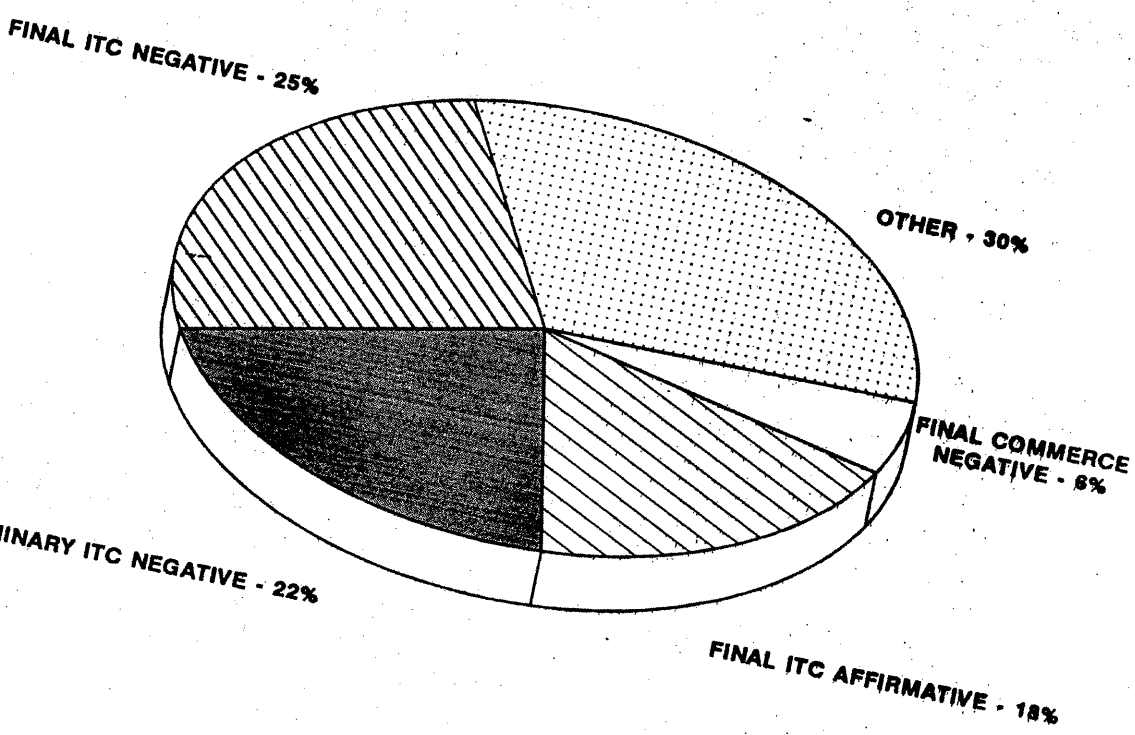
Source: Bureau of Economics, FTC.

FIGURE 2.1
ANTIDUMPING CASE SUMMARY
1980 - 1988



SOURCE: BUREAU OF ECONOMICS, FTC.

FIGURE 2.2
COUNTERVAILING DUTY CASE SUMMARY
1980 - 1988



SOURCE: BUREAU OF ECONOMICS, FTC.

There was a sharp increase in antidumping and countervailing duty actions in the 1980s (in particular the early 1980s) compared with the 1970s.[19] The increase in the early 1980s occurred during a period of rising unemployment, an appreciation of the dollar, and a deterioration in the balance of payments.[20] Periods of general economic distress combined with deficits in the balance of payments often lead to an increase in appeals to limit imports.[21] Although the unfair import caseload increased sharply in the early 1980s, this may only reflect an increase in the demand for protection by U.S. industries. A deteriorating macroeconomic environment does not necessarily imply a considerable increase in the number of domestic industries that were severely harmed by unfair imports. Other, purely domestic factors (e.g., declining domestic demand) may have been more important than unfair imports.

Unfortunately, for our purposes, the outcome of unfair import investigations by Commerce and the ITC do not reveal much about the severity of the impact of unfair imports. The one exception is where Commerce finds that the dumping or subsidy margin is *de minimis*. For this outcome it can safely be assumed that the impact on domestic producers is insignificant. The unfair price advantage is simply too small to have an appreciable effect on the domestic market. For the other four outcomes, the severity of the injury to domestic industry caused by unfair imports is obscure. This is due primarily to two considerations.

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[19] The surge in AD and CVD cases in the early 1980s has been documented by several scholars. For example, one study reported that the average number of AD and CVD actions brought increased from 24 per year for the period 1972 through 1979 to 78 per year for the period 1980 through 1984. [Note that the latter period includes 78 petitions initially filed before 1979 under the 1974 Trade Act that were deferred until 1979.] See Deardorff and Stern (1987). Another study reported that the average number of AD and CVD actions processed increased from 50 per year in the period 1975 through 1979 to 86 per year in the period 1980 through 1988. See Finger (1990). The results of the two studies differ because (in addition to different time periods covered) Deardorff and Stern refer to number of investigations initiated whereas Finger refers to number of outcomes.

A considerable part of the surge in AD and CVD actions is explained by the massive AD and CVD filing by integrated steel producers in 1982. Initially, 132 AD and CVD complaints were filed by these producers in early 1982 against producers in seven EC countries as well as producers in four other countries. For a discussion see Deardorff and Stern (1987), and Tarr (1988). For a summary of the steel AD and CVD investigations between January 1981 and March 15, 1989, see "Responses to Subcommittee questions by Ambassador Carla Hills," Unfair Foreign Trade Practices: Hearings before Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, House of Representatives, 101st Cong., 1st Sess. 362, March 1 and 2, 1989, Serial No. 101-28. This submission shows that between January 1981 and March 15, 1989 there were a total of 296 AD and CVD investigations involving steel products. The status of these investigations as of March 15, 1989 was as follows: pending initiation -- 0; pending investigations -- 6; suspended, terminated, withdrawn -- 181; AD orders in effect -- 28; CVD orders in effect -- 28; AD orders revoked -- 25; CVD orders revoked -- 28. Note that orders can be revoked if the exporter can show that his exports are no longer unfair. For discussion see, for example, Horlick (1989), p. 128.

[20] According to several international trade economists, the worsening of the balance of payments and appreciation of the dollar in the early 1980s has been explained by the strong expansionary fiscal policy and tight monetary policy pursued by the United States during this period. See, e.g., Caves, Frankel, and Jones (1990), p. 584.

[21] For a survey of the 1980s that finds domestic pressures for protectionism were a byproduct of the appreciation of the real exchange rate, see Corden (1987), p. 45.

First, it is difficult to draw inferences about injury from the magnitude of the subsidy and dumping margins calculated by Commerce. Several commentators have observed that Commerce determinations of margins, particularly dumping margins, are biased upwards.[22] For example, in computing (average) dumping margins Commerce excludes all transactions where the price charged to U.S. importers is greater than fair market value.[23] Under reasonable assumptions this can result in significant dumping margins even when prices charged on sales to the U.S. are, on average, greater than or equal to the fair market value. Other biases have also been identified that tend to increase the dumping margin.[24]

Second, with respect to investigations that were terminated before the final stage at the ITC, typically little is known about the effect of unfair imports. The investigations were stopped and the information that had been gathered was not released (e.g., in ITC staff reports). However, some evidence limited to particular terminated investigations suggests that the degree of injury suffered by domestic industries need not be severe.[25]

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[22] The biases in and deficiencies of the dumping and subsidy margins calculated by Commerce were the focus of papers presented at a November 1990 Conference at the Brookings Institution, which are collected in Boltuck and Litan (1991). See also Committee for Economic Development (1990), p. 61; Horlick (1989), p. 146; Jackson (1991), p. 233; Palmeter (1991), p. 20.

[23] According to Horlick (1989), p. 146, the rationale for this approach is that the statute is designed to remedy dumped imports and Commerce should therefore restrict its attention to transactions where dumping occurs. In addition, if a final order is issued, the final dumping margin merely establishes the cash deposit rate; the actual duties are determined later during an administrative review. During the administrative review, Commerce may, and sometimes does, compare (simultaneous) home market and U.S. sales on an individual basis, in which case only those U.S. sales that are dumped pay a dumping duty. See Boltuck, Francois, and Kaplan (1991), p. 154, note 6. If this is done, then the correct amount of duties is collected.

[24] See generally Boltuck and Litan (1991).

[25] This evidence is necessarily fragmentary because the data needed to estimate injury often is not available for most cases that do not continue to the final phase. However, information about the magnitude of injury caused by unfair imports is available for two major cases: subsidized carbon steel products from nine countries and subsidized softwood lumber from Canada. For the four steel products studied by Tarr (plate, structural shapes, hot rolled sheet & strip, and cold rolled sheet & strip) in FTC (1982), Appendix p. 14, he estimates that domestic industry revenue was 7.8 percent lower because of the subsidized imports. For lumber, Tarr's analysis of Canadian stumpage rights system in FTC (1983), Appendix, shows that while the system may confer a subsidy on tree harvesters, it does not give a subsidy to Canadian lumber mills or increase lumber exports. Thus, the stumpage rights system was not responsible for any injury suffered by domestic producers.

Note that the above analysis for softwood lumber was for the CVD case initiated in 1982, which was dismissed by Commerce on grounds that the subsidy was not countervailable. A subsequent CVD petition, in 1986, led to an agreement between the United States and Canada whereby Canada imposed a 15 percent export tax. In September 1991, Canada announced plans to end the export tax. The United States responded by imposing a 15 percent import duty on lumber. Commerce subsequently initiated another CVD investigation on softwood lumber from Canada. See James Bovard, "Timber Rascality in the Fair Trade Forest," Washington Times, October 9, 1991, p. F3.

Finally, Tarr's result for steel is an overestimate of injury. It was calculated before the final countervailing duty rates were announced and assumed that the average would be 15 percent. In fact, the average of the final rates (across countries and products) was less than 15 percent. See Stern (1982), pp. 33* to 50*, which provides the data required to calculate average subsidy margins for each of the four products. The largest average margin was 12.5 percent, for structural shapes.

V. Margins and Market Shares for Unfair Imports

Data from ITC reports for final phase investigations can be used to assess whether unfair imports have a severe impact on domestic industries. Final phase ITC reports are a distinctive data source. In addition to furnishing data on a reasonably consistent basis from investigation to investigation, they are often the only source for data on the very narrowly defined product categories involved in some antidumping or countervailing duty investigations. As shown in Figures 2,1 and 2.2, final phase investigations cover 49 percent of all antidumping decisions (34+15) and 43 percent of all countervailing duty decisions (25+18) made over the period 1980 to 1988.

In what follows, we adopt the ITC's determinations regarding the definition of the appropriate product[26] and identification of the appropriate country (or countries) supplying unfair imports.[27] As explained in Appendix A, these specifications effectively define the contours of what we refer to as "final ITC cases," or simply "cases." Altogether there are 221 cases for the period 1980 to 1988. However, 5 of the 221 cases were very unusual in that there is little question about severity of injury from unfair imports.[28] Thus, there are 216 cases for which we need to assess the effect of unfair imports.

We conjecture that the magnitude of injury suffered by a domestic industry is positively related to the size of the dumping or subsidy margin and to the share of unfair imports in the domestic market.[29] Both of these important variables are available in most ITC reports. As already discussed, unfair imports with small

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[26] In each unfair import investigation the ITC is required by statute to identify the relevant domestic product adversely affected by unfair imports. The legal term for the relevant product is "like product." For a discussion, see, e.g., Jackson and Davey (1986), pp. 700-704. For a critical commentary on ITC practice in determining like product, see, e.g., Palmeter (1987). Also, see Steen (1987) who criticizes ITC practice and proposes using a 'competitive industry' standard based on the Department of Justice merger (now joint Department of Justice-Federal Trade Commission) guidelines to define like product.

[27] The ITC may combine unfair imports from two or more countries under investigation and consider the cumulative total of the unfair imports from the respective countries. For a discussion of cumulation in ITC cases, see Mock (1986). Also, on the origins and critique of cumulation, see Palmeter (1987), p. 33.

[28] In two cases, involving seamless stainless steel pipe and cheese, there was no injury to domestic industry because the subsidy margin was *de minimis* (steel pipe) or there was no domestic industry to be injured (cheese). In three cases, involving offshore platform jackets, there was considerable injury because the domestic industry had obtained no contracts to build offshore platforms during the relevant period. For details, see Stainless Steel Pipes and Tubes from Sweden, USITC Pub. 1966, Inv. No. 701-TA-281, April 1987, p. 3; Certain Nonquota Cheese from Belgium, Denmark, the Federal Republic of Germany, France, Ireland, Italy, Luxembourg, the Netherlands, and the United Kingdom, USITC Pub. 1079, Inv. Nos. 701-TA-52/60, June 1980, p. 4; Offshore Platform Jackets and Piles from the Republic of Korea and Japan, USITC Pub. 1848, Inv. Nos. 701-TA-248 and 731-TA-259/260, May 1986, p. 10.

[29] Indeed, these variables can be incorporated into a formal economic model that can be used to estimate the effects of unfair imports on domestic industry. Such a model is developed in the next chapter. Our model builds on an earlier model, the "CADIC" model, which was developed by Richard Boltuck. Note that the CADIC model has been used in AD and CVD investigations at the ITC since 1987. For a explanation of CADIC, see Boltuck (1991). For a summary and critical commentary of CADIC, see Miller and Burrows (1991).

margins, as measured by Commerce, are unlikely to have caused a significant impact on domestic industry. Similarly, when the market share of unfair imports is small, they tend to play a small role in the relevant U.S. market and also are unlikely to have caused a significant impact on domestic prices or domestic production. Therefore, whenever final antidumping and countervailing duty cases involve small margins and small market shares for unfair imports, it would be unlikely that unfair imports would have significant effects on domestic industry. Although the exact dividing line between "large" and "small" margins and market shares is somewhat arbitrary, and also likely varies from case to case (for example depending on the price sensitivity of demand and supply of the product under investigation), for purposes of the discussion below we adopt 5 percent as the dividing line between "large" and "small" margins and import shares. The reader can, of course, choose other thresholds.[30]

It is not always possible to obtain data on the market share of unfair imports because such information is sometimes not released in order to protect the confidentiality of parties. Confidentiality is usually based on a relatively small number of domestic producers and it is possible that such cases do not involve severe injury to domestic producers.[31] If firms in concentrated industries have significant market power, they are less likely to suffer severe injury from unfair imports when they have a cushion of monopoly profits.[32] Import market shares could be obtained for 174 of the 216 cases in our sample. Finally, although market share data are not always available, dumping or subsidy margins are available, with only rare exceptions. Altogether, margins are available for 213 of the 216 cases at issue.[33] Of these 213 cases there are 39 that lack import share data. (Three cases lack both margin and import share data.)

To assess whether the 39 cases that lack unfair import market share data but have margin data are distinctive, we provide in Table 2.3 the distribution of subsidy margins for the 73 cases involving countervailing duty investigations and in Table

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[30] For present purposes, the 5 percent figure is a convenient threshold. It is not, however, arbitrary, as we will show in chapter 4 when we present our injury estimates.

[31] At the ITC, confidentiality is defined as follows. If a particular aggregate (e.g., total domestic shipments by U.S. producers, total imports, total apparent domestic consumption) is based on data for: (1) one or two firms, (2) three or more firms and one company has more than 75 percent of the aggregate, or (3) three or more firms and two companies have at least 90 percent of the aggregate, then the aggregate is confidential and not released to the public.

[32] For a discussion of whether unfair trade laws should be used to protect monopoly profits of domestic firms, see Wood (1989).

[33] The three cases where margins are not available are cases involving cumulation. In cumulation cases the margin for the case is a weighted average where the weights are quantities (or values) of the respective countries. Although margins are reported for each country, a weighted average margin cannot be calculated because data for unfair imports from one or more countries are not available.

2.4 the distribution of dumping margins for the 152 cases involving antidumping investigations. In these tables, higher category numbers (defined at the bottom of the tables) indicate higher subsidy or dumping margins. Note that there are 12 cases that involve both countervailing duty and antidumping investigations (joint cases), which therefore appear in both tables.[34]

As shown in Table 2.3, only four of the 73 countervailing duty cases do not have sufficient data to obtain the penetration of unfair imports. Margins for these cases do not diverge markedly from the margins for the other cases. The margin for two of the four cases is between 1 and 2 percent (margin category 1), another is between 3 and 4 percent (margin category 3), and the fourth is between 10 and 25 percent (margin category 6). In particular, these margins do not appear to be unusually high relative to the other cases. Of the 69 countervailing duty cases for which there are import market share data, 20 cases have subsidy margins between 10 and 25 percent, and nine cases have margins over 25 percent. These impressions are reinforced by a formal statistical test. A Chi-square test for independence of the rows and columns of Table 2.3 supports the conclusion that subsidy margins for cases with and cases without import share data do not differ significantly.[35] Finally, (not shown in Table 2.3) the median subsidy margin for cases without import market share data is less than one-third the median for cases with import market share data -- 2.5 percent vs. 7.9 percent.

As shown in Table 2.4, the dumping margins for antidumping cases without import market share data are not unusually high relative to the other cases. Of the 35 cases without import market share data, 57 percent have margins greater than 10 percent. Of the 117 cases with sufficient data, 60 percent have margins greater than 10 percent. Moreover, a Chi-square test of the independence of rows and columns of Table 2.4 also supports the conclusion that the difference between the dumping margins for the two types of cases is not statistically significant.[36] Finally, the median dumping margin for cases without import market share data is smaller than the median for the cases with import market shares -- 13.02 percent vs. 15.44 percent.

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[34] Joint cases involve cumulation across AD and CVD statutes, so called "cross cumulation." For example, a particular domestic industry simultaneously files two petitions, an AD petition citing one country and a CVD petition citing a second country. The ITC could choose to combine these investigations and cumulate the allegedly dumped imports from the first country with the allegedly subsidized imports from the second country to determine the impact of the cumulated imports on the domestic industry. For a discussion, see Mock (1986).

[35] We use the standard Chi-square goodness of fit test as described in Koopmans (1987), chap. 13. The Chi-square statistic is 3.688, the critical Chi-square is 7.815 (at the 5 percent level of significance). Therefore we cannot reject the null hypothesis that the rows and columns are independent. Note that in applying this test it was necessary to combine several columns because the original table has too few observations in several cells. See Koopmans (1987), p. 420.

[36] A contingency test for independence of rows and columns of Table 2.4 yields a calculated Chi-square that is not statistically significant at the 5 percent level. The Chi-square statistic is 11.817, the critical Chi-square is 14.067. Therefore we cannot reject the null hypothesis that the rows and columns are statistically independent.

Thus, the countervailing duty and antidumping cases without import market share data do not have particularly high margins. Indeed, on average they have lower margins than cases that have import market shares.

For the 174 unfair import cases where we have data both on margins and market shares of unfair imports, we provide, in Tables 2.5, 2.6, and 2.7, the cross tabulations for the distributions of margins and shares. Table 2.5 is for the 57 cases that only involve countervailing duty investigations. Table 2.6 is for the 105 cases that only involve antidumping investigations. Table 2.7 is for the 12 joint cases that involve both countervailing duty and antidumping investigations. In these tables, higher category numbers indicate progressively higher dumping and subsidy margins, or higher market shares for unfair imports. Categories 5, 6, and 7 (each) have margins or shares above 5 percent.

As shown in Table 2.5, there are relatively few countervailing duty cases where unfair imports appear to cause significant effects on domestic industry. The cases where the subsidy margin and the share of unfair imports both exceed 5 percent are shown in the lower right hand portion of Table 2.5 (i.e., margin and share categories are at least 5). The subsidy margin and the share of unfair imports both exceed 5 percent in only 16 percent of the countervailing duty cases (9 out of 57).

As shown in Table 2.6, unfair imports in antidumping cases appear to be a greater problem for domestic industries. The dumping margin and the share of unfair imports both exceed 5 percent in 41 percent of the antidumping cases (43 out of 105).

Finally, as shown in Table 2.7, joint cases are similar to antidumping cases. The margin (sum of subsidy and dumping margins)[37] and share of unfair imports both exceed 5 percent in 42 percent of the joint cases (5 out of 12).

VI. Absolute and Relative Size of Domestic Industries Injured by Unfair Imports

Not surprisingly, the antidumping and countervailing duty cases that tend to capture the headlines are the ones featuring large or technologically advanced industries. This may convey the impression that in the typical unfair import case many jobs are at risk or that frontier technologies are threatened. It may also be

[37] In joint cases the unfair price advantage of foreign firms in the domestic market potentially involves two distinct practices. We sum the dumping and subsidy margins in joint cases to approximate the total advantage of foreign firms. Note that the sum of the two margins will overstate the advantage in certain cases. For example, if subsidies are exclusively export subsidies the subsidy margin would also be a dumping margin because export subsidies create a difference between the (higher) price in the home market and the (lower) price on exports. See for example, Krauss (1978), chap. 3.

TABLE 2.5

CROSS TABULATION OF UNFAIR MARKET SHARE WITH SUBSIDY MARGIN
FOR 57 COUNTERVAILING DUTY CASES FROM 1980 TO 1988
(Number of Cases)

Unfair Import Share (s) Categories (Percent range for s)	Subsidy Margin (m) Categories (percent range for m)								
	m<1%	1≤m<2	2≤m<3	3≤m<4	4≤m<5	5≤m<10	10≤m<25	25≤m	TOTAL
s≤1%	0	1	0	0	0	0	3	2	6
1≤s<2	0	0	0	1	0	5	2	1	9
2≤s<3	0	0	1	0	0	2	5	3	11
3≤s<4	1	1	0	1	0	0	7	1	11
4≤s<5	0	0	0	0	0	0	1	0	1
5≤s<10	0	1	0	0	0	1	2	0	4
10≤s<25	1	1	1	0	2	4	0	2	11
25≤s	0	1	1	0	2	0	0	0	4
TOTAL	2	5	3	2	4	12	20	9	57

SOURCE: Bureau of Economics, FTC.

TABLE 2.6

CROSS TABULATION OF UNFAIR IMPORT MARKET SHARE WITH DUMPING MARGIN
FOR 105 ANTIDUMPING CASES FROM 1980 TO 1988
(Number of Cases)

Unfair Import Share (s) Categories (Percent range for s)	Dumping Margin (m) Categories (percent range for m)								TOTAL
	m<1%	1≤m<2	2≤m<3	3≤m<4	4≤m<5	5≤m<10	10≤m<25	25≤m	
s<1%	0	0	1	0	0	0	0	7	8
1≤s<2	0	2	0	0	0	1	3	5	11
2≤s<3	1	0	0	0	0	2	3	3	9
3≤s<4	0	0	1	1	0	2	3	3	10
4≤s<5	0	0	0	0	0	1	0	6	7
5≤s<10	0	1	0	0	1	2	1	3	8
10≤s<25	4	0	1	0	1	7	9	11	33
25<s	0	7	1	0	1	1	0	9	19
TOTAL	5	10	4	1	3	16	19	47	105

SOURCE: Bureau of Economics, FTC.

TABLE 2.7

CROSS TABULATION OF UNFAIR MARKET SHARE WITH SUM OF DUMPING PLUS SUBSIDY MARGIN FOR 12 JOINT ANTIDUMPING AND COUNTERVAILING DUTY CASES FROM 1980 TO 1988
(Number of Cases)

Unfair Import Share (s) Categories	Dumping Plus Subsidy Margin (m) Categories (percent range for m)				
	3≤m<4	4≤m<5	5≤m<10	10≤m<25	TOTAL
2≤s<3	0	0	0	1	1
5≤s<10	0	0	0	2	2
10≤s<25	0	0	0	1	1
25≤s	3	3	2	0	8
TOTAL	3	3	2	4	12

SOURCE:Bureau of Economics, FTC.

related to the perception that unfair imports are a major problem. Although the softwood lumber, 64K DRAMs, or cellular telephone cases may attract the lion's share of the public's attention, in fact the typical case involves a small industry that makes an ordinary product (e.g., barbed wire, candles, paint brushes, red raspberries).[38]

Tables 2.8 and 2.9 provide information about 75 of the domestic industries (as defined by the ITC) that were involved in unfair trade cases.[39] The tables list the product made by the domestic industry and the number of times there was a distinct case for each industry between 1980 and 1988. Table 2.8 also lists the number of production workers employed in the industry seeking additional protection, and the total number of production workers employed in the four digit SIC industry containing the domestic industry. Table 2.9 also lists the average hourly wage rate -- measured by total compensation per hour, regular pay plus all fringe benefits -- paid by the industry, and the average hourly wage paid by the four digit industry.

To gauge relative size we divide employment in the industry by total employment in the four digit SIC industry containing the domestic industry (Table 2.8). To see whether the production workers involved in unfair import cases command relatively high or low wage rates we examine the average hourly wage rate paid in the industry relative to the average wage rate paid in the appropriate four digit SIC industry (Table 2.9) and relative to the average wage rate in manufacturing.[40]

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[38] Section 201 of the Trade Act of 1974, the "escape clause," allows domestic industries to obtain temporary relief from fairly traded imports. Upon receipt of a petition by representatives of a domestic industry, the ITC must conduct an investigation to determine (i) whether the domestic industry has suffered or is threatened with injury, (ii) whether imports have increased, and (iii) whether increased imports are the substantial cause of such injury. If the ITC answers all three questions affirmatively, it must recommend to the President a policy (e.g., tariff, quota) to remedy the injury suffered by the domestic industry. For a discussion of section 201, see, for example, Jackson and Davey (1986), chapter 9. Also see Kelly (1988).

Nearly a decade ago, Finger, Hall, and Nelson (1982) reported that the average size of domestic industries in an AD or CVD case was typically small, only one-third as large as industries in escape clause (section 201) cases. One of their conclusions was that AD and CVD laws were "functionally, the poor (or small) man's escape clause." (p. 465)

Note that there are several major differences between escape clause cases and AD or CVD cases. By statute, relief in escape clause cases is temporary while AD and CVD duties have no time limit. Further, the scope of escape clause cases is usually considerably broader than that of AD and CVD cases. Escape clause cases are concerned with the effects on domestic producers caused by increased total imports from all countries. In contrast, AD and CVD cases are concerned solely with the effects of unfair practices by specific foreign producers or countries.

[39] Owing to missing data (on employment or wage rates) in ITC reports, only 129 out of the 221 final cases from 1980 to 1988 are covered in Tables 2.8 and 2.9.

Note that we adopt the industries used by the ITC. Generally a domestic industry consists of the domestic producers of the "like product," which is determined by the ITC. For critical commentary of both the statute and ITC practice on the issue of like product and industry see Palmeter (1987), pp. 14-18. Also see Steen (1987).

[40] Relative wage rates have been used as an indicator of technological sophistication. This is based on the argument that differences in total worker compensation per hour vary positively with skill requirements (human capital) and cooperating physical capital. Technological sophistication is expected to be positively correlated with the value of human and/or physical capital. See Lary (1968) for a discussion of these issues.

TABLE 2.8

EMPLOYMENT IN ITC CASES COMPARED TO SIC INDUSTRIES

Row Number	Case	Product	No. of ITC Cases for each Product	SIC Industry	Employment (Thousands) No. of Workers In ITC Cases* (1984)	Employment (Thousands) No. of Workers In SIC Industry (1984)	Ratio of ITC To SIC
1	10820	CANNED HAMS	1	2011 MEAT PACKING	1.724	102.0	.0169
2	17331	FRESH PORK	1	2011 "	11.667	102.0	.1144
3	10791	NONE (CHEESE)	1	2022 CHEESE, NATURAL AND PROCESSED	.000	24.4	.0000
4	10792	FETA CHEESE	1	2022 " "	.050	24.4	.0020
5	10760	CANNED TOMATOES	1	2033 CANNED FRUITS & VEGETABLES	7.806	58.5	.1334
6	17070	RED RASPBERRIES	1	2033 " "	.463	58.5	.0079
7	10470	REFINED SUGAR	1	2062 & 2063 BEET/CANE SUGAR REFINING	5.015	12.6	.3980
8	10861	COTTON SHEETING	1	2211 WEAVING MILLS, COTTON	3.870	63.0	.0614
9	14210	PRINT CLOTH	1	2211 " "	4.410	63.0	.0700
10	10863	COTTON T-SHIRTS	1	2321 MEN'S & BOYS' SHIRTS/NIGHTWEAR	10.343	78.5	.1318
11	14900	SHOP TOWELS	2	2392 HOUSE FURNISHINGS, N.E.C.	.391	38.7	.0101
12	17220	TUBULAR STEEL CHAIRS	1	2599 FURNITURE & FIXTURES, N.E.C.	.195	17.0	.0115
13	17840	PHOTO ALBUMS	1	2782 BLANKBOOKS & BINDERS	.535	24.9	.0215
14	11540	BARIUM CARBONATE	1	2819 INORGANIC CHEMICALS, N.E.C.	.185	43.0	.0043
15	21120	TEFLON	1	2821 PLASTICS MATERIALS & RESINS	.198	33.2	.0060
16	20900	NITRILE RUBBER	1	2822 SYNTHETIC RUBBER	.241	7.0	.0344
17	15950	CHOLINE CHLORIDE	1	2833 MEDICINALS & BOTANICALS	.047	9.5	.0049
18	12331	LIQUID SORBITOL	1	2869 ORGANIC CHEMICALS, N.E.C.	.159	60.7	.0026
19	12332	CRYSTALLINE SORBITOL	1	2869 " "	.159	60.7	.0026
20	18181	ETHANOL	2	2869 " "	1.158	60.7	.0191
21	19920	UREA	1	2873 NITROGENOUS FERTILIZERS	.855	5.2	.1644
22	20000	PHOSPHORIC ACID	1	2874 PHOSPHATIC FERTILIZERS	.196	8.9	.0220
23	15250	ACRYLIC SHEET	1	3079 MISC PLASTICS PRODUCTS	1.294	416.4	.0031
24	19389	MIRRORS	1	3231 GLASS PRODUCTS	.460	33.8	.0136
25	14401	CEMENT	2	3241 HYDRAULIC CEMENT	2.664	17.4	.1531

TABLE 2.8

EMPLOYMENT IN ITC CASES COMPARED TO SIC INDUSTRIES--Continued

Row Number	Case	Product	No. of ITC Cases for each Product	SIC Industry	Employment (Thousands) 1984 No. of Workers In ITC Cases*	No. of Workers In SIC Industry	Ratio of ITC To SIC
26	21100	GRANITE	1	3281 CUT STONE & STONE PRODUCTS	1.008	8.9	.1133
27	13331	STAINLESS HOT BAR	2	3312 BASIC STEEL	.802	197.3	.0041
28	13332	STAINLESS COLD BAR	2	3312 "	2.823	197.3	.0143
29	13333	STAINLESS WIRE ROD	2	3312 "	.562	197.3	.0028
30	13380	WIRE RODS	7	3312 "	7.497	197.3	.0380
31	13450	WELDED PIPE	1	3312 "	10.350	197.3	.0525
32	13472	STAINLESS SEAMLESS PIPE	3#	3312 "	.821	197.3	.0042
33	13911	STAINLESS STEEL SHEET	4	3312 "	6.531	197.3	.0331
34	13912	STAINLESS STEEL PLATE	1	3312 "	1.542	197.3	.0078
35	14031	TOOL STEEL BARS	2	3312 "	1.952	197.3	.0099
36	14990	STEEL PLATE	3	3312 "	12.407	197.3	.0629
37	15191	SMALL-DIA CIRCULAR PIPE	2	3312 "	4.080	197.3	.0207
38	15680	HOT ROLLED SHEET	4#	3312 "	18.735	197.3	.0950
39	15790	COLD ROLLED SHEET	5	3312 "	32.004	197.3	.1622
40	16941	OIL COUNTRY GOODS	6	3312 "	7.659	197.3	.0388
41	17850	STRUCTURAL SHAPES	1	3312 "	7.018	197.3	.0356
42	17990	LIGHT WALLED RECT. PIPE	4	3312 "	.612	197.3	.0031
43	18080	HEAVY WALLED RECT. PIPE	2	3312 "	.466	197.3	.0024
44	18101	LINE PIPE	2	3312 "	1.704	197.3	.0086
45	19071	STANDARD PIPE	5	3312 "	2.998	197.3	.0152
46	20332	STAINLESS WELDED PIPE	2	3312 "	1.168	197.3	.0059
47	16812	NONMAL CST IRN PIPE FIT	1	3321 GRAY IRON FOUNDRIES	.776	81.1	.0096
48	18111	LIGHT IRON CONST CASTIN	1	3321 " "	.633	81.1	.0078
49	18112	HEAVY IRON CONST CASTIN	1	3321 " "	1.266	81.1	.0156
50	19309	BRASS SHEET & STRIP	2	3351 COPPER ROLLING AND DRAWING	1.501	18.0	.0834

TABLE 2.8

EMPLOYMENT IN ITC CASES COMPARED TO SIC INDUSTRIES--Continued

Row Number	Case	Product	No. of ITC Cases for each Product	SIC Industry	Employment (Thousands) 1984 No. of Workers In ITC Cases*	Employment (Thousands) 1984 No. of Workers In SIC Industry	Ratio of ITC To SIC
51	21031	ALUMINUM REDRAW RODS	2	3354 ALUMINUM EXTRUSIONS	.168	22.1	.0076
52	19341	AWNING OPERATORS	2	3429 HARDWARE, N.E.C.	.139	67.8	.0021
53	19342	JALOUSIE OPERATORS	2	3429 " "	.064	67.8	.0009
54	15560	STEEL VALVES	1	3494 VALVES & PIPE FITTINGS	2.130	71.3	.0299
55	16811	MALL CAST IRON PIPE FIT	2	3494 " "	1.947	71.3	.0273
56	19189	BUTT-WELD PIPE FITTINGS	1	3494 " "	.224	71.3	.0031
57	20049	MALL THREAD CST IRN PIP	1	3494 " "	1.840	71.3	.0258
58	20670	STAINLESS BUTT-WELD PIP	1	3494 " "	.184	71.3	.0026
59	17700	BARBED WIRE	1	3496 MISC FABRICATED WIRE PRODUCTS	.168	30.4	.0055
60	12500	FIREPLACE MESH PANELS	1	3499 FABRICATED METAL PRODUCTS, N.E.C.	.016	55.8	.0003
61	18420	STEEL WIRE NAILS	3#	3499 " "	1.264	55.8	.0227
62	19361	STAINLESS COOKWARE	2	3499 " "	1.600	55.8	.0287
63	17612	TILLAGE TOOLS	1	3523 FARM MACHINERY	.477	51.5	.0093
64	14651	SEMIFINISHED LINKS	1	3531 CONSTRUCTION MACHINERY	.120	63.7	.0019
65	14652	SEMIFINISHED ROLLERS	1	3531 " "	.120	63.7	.0019
66	20800	BIMETALLIC CYLINDERS	1	3559 INDUSTRIAL MACHINERY, N.E.C.	.372	41.7	.0089
67	19839	TAPERED ROLLER BEARINGS	3#	3562 BALL & ROLLER BEARINGS	6.792	34.0	.1998
68	11160	ELECTRIC MOTORS	1	3621 MOTORS & GENERATORS	1.716	63.3	.0271
69	15142	COLOR TV RECEIVERS	2	3651 RADIO & TV RECEIVING SETS	17.572	35.9	.4895
70	17861	CELL MOBILE TELEPHONES	1	3662 RADIO & TV COMMUNICATION EQUIP	1.468	242.3	.0061
71	20460	COLOR PICTURE TUBES	1	3671 ELECTRON TUBES	8.104	22.5	.3602
72	18620	DRAMS	1	3674 SEMICONDUCTORS	9.946	96.1	.1035
73	19710	DISC WHEELS	1	3714 MOTOR VEHICLE PARTS	.296	306.3	.0010
74	18050	PAINT BRUSHES	1	3991 BROOMS & BRUSHES	1.186	9.9	.1198
75	18880	CANDLES	1	3999 MANUFACTURING INDUSTRIES, N.E.C.	1.453	39.2	.0371

NOTE: * Data for the number of workers in the ITC cases were obtained from the ITC reports. When there was more than one case for a product category, the case with the highest number of production workers was used. A "#" indicates that one (or more) cases lacked data on production workers and/or average compensation.

SOURCE: Bureau of Economics, FTC.

TABLE 2.9

WAGE RATES IN ITC CASES COMPARED TO SIC INDUSTRIES

Row Number	Case	Product	No. of ITC Cases for each Product	SIC Industry	Wage Rates ($/Hr)		
					Average Compensation for ITC Case*	Average Compensation for SIC Industry	Ratio of ITC to SIC
1	10820	CANNED HAMS	1	2011 MEAT PACKING	10.10	11.66	.8662
2	17331	FRESH PORK	1	2011 "	10.10	11.66	.8662
3	10791	NONE (CHEESE)	1	2022 CHEESE, NATURAL AND PROCESSED	7.46	11.66	.6398
4	10792	FETA CHEESE	1	2022 " "	7.46	11.66	.6398
5	10760	CANNED TOMATOES	1	2033 CANNED FRUITS & VEGETABLES	10.32	11.66	.8851
6	17070	RED RASPBERRIES	1	2033 " "	10.32	11.66	.8851
7	10470	REFINED SUGAR	1	2062 & 2063 BEET/CANE SUGAR REFINING	14.38	11.66	1.2333
8	10861	COTTON SHEETING	1	2211 WEAVING MILLS, COTTON	7.79	8.21	.9488
9	14210	PRINT CLOTH	1	2211 " "	7.79	8.21	.9488
10	10863	COTTON T-SHIRTS	1	2321 MEN'S & BOYS' SHIRTS/NIGHTWEAR	6.30	7.00	.9000
11	14900	SHOP TOWELS	2	2392 HOUSE FURNISHINGS, N.E.C.	6.87	7.00	.9814
12	17220	TUBULAR STEEL CHAIRS	1	2599 FURNITURE & FIXTURES, N.E.C.	4.74	8.86	.5350
13	17840	PHOTO ALBUMS	1	2782 BLANKBOOKS & BINDERS	8.90	12.12	.7343
14	11540	BARIUM CARBONATE	1	2819 INORGANIC CHEMICALS, N.E.C.	11.76	15.55	.7563
15	21120	TEFLON	1	2821 PLASTICS MATERIALS & RESINS	15.23	15.55	.9794
16	20900	NITRILE RUBBER	1	2822 SYNTHETIC RUBBER	20.24	15.55	1.3016
17	15950	CHOLINE CHLORIDE	1	2833 MEDICINALS & BOTANICALS	11.69	15.55	.7518
18	12331	LIQUID SORBITOL	1	2869 ORGANIC CHEMICALS, N.E.C.	12.89	15.55	.8289
19	12332	CRYSTALLINE SORBITOL	1	2869 " "	12.89	15.55	.8289
20	18181	ETHANOL	2	2869 " "	14.52	15.55	.9338
21	19920	UREA	1	2873 NITROGENOUS FERTILIZERS	14.12	15.55	.9080
22	20000	PHOSPHORIC ACID	1	2874 PHOSPHATIC FERTILIZERS	14.02	15.55	.9016
23	15250	ACRYLIC SHEET	1	3079 MISC PLASTICS PRODUCTS	12.43	13.71	.9066
24	19389	MIRRORS	1	3231 GLASS PRODUCTS	8.96	12.98	.6903
25	14401	CEMENT	2	3241 HYDRAULIC CEMENT	25.52	12.98	1.9661

TABLE 2.9

WAGE RATES IN ITC CASES COMPARED TO SIC INDUSTRIES--Continued

Row Number	Case	Product	No. of ITC Cases for each Product	SIC Industry	Wage Rates ($/Hr)		
					Average Compensation for ITC Case*	Average Compensation for SIC Industry	Ratio of ITC to SIC
26	21100	GRANITE	1	3281 CUT STONE & STONE PRODUCTS	10.04	12.98	.7735
27	13331	STAINLESS HOT BAR	2	3312 BASIC STEEL	22.20	20.26	1.0958
28	13332	STAINLESS COLD BAR	2	3312 "	22.20	20.26	1.0958
29	13333	STAINLESS WIRE ROD	2	3312 "	22.20	20.26	1.0958
30	13380	WIRE RODS	7	3312 "	22.20	20.26	1.0958
31	13450	WELDED PIPE	1	3312 "	22.20	20.26	1.0958
32	13472	STAINLESS SEAMLESS PIPE	3#	3312 "	22.20	20.26	1.0958
33	13911	STAINLESS STEEL SHEET	4	3312 "	22.20	20.26	1.0958
34	13912	STAINLESS STEEL PLATE	1	3312 "	22.20	20.26	1.0958
35	14031	TOOL STEEL BARS	2	3312 "	22.20	20.26	1.0958
36	14990	STEEL PLATE	3	3312 "	22.20	20.26	1.0958
37	15191	SMALL-DIA CIRCULAR PIPE	2	3312 "	22.20	20.26	1.0958
38	15680	HOT ROLLED SHEET	4#	3312 "	22.20	20.26	1.0958
39	15790	COLD ROLLED SHEET	5	3312 "	22.20	20.26	1.0958
40	16941	OIL COUNTRY GOODS	6	3312 "	22.20	20.26	1.0958
41	17850	STRUCTURAL SHAPES	1	3312 "	22.20	20.26	1.0958
42	17990	LIGHT WALLED RECT. PIPE	4	3312 "	22.20	20.26	1.0958
43	18080	HEAVY WALLED RECT. PIPE	2	3312 "	22.20	20.26	1.0958
44	18101	LINE PIPE	2	3312 "	22.20	20.26	1.0958
45	19071	STANDARD PIPE	5	3312 "	22.20	20.26	1.0958
46	20332	STAINLESS WELDED PIPE	2	3312 "	22.20	20.26	1.0958
47	16812	NONMAL CST IRN PIPE FIT	1	3321 GRAY IRON FOUNDRIES	11.38	17.10	.6655
48	18111	LIGHT IRON CONST CASTIN	1	3321 " "	11.38	17.10	.6655
49	18112	HEAVY IRON CONST CASTIN	1	3321 " "	11.38	17.10	.6655
50	19309	BRASS SHEET & STRIP	2	3351 COPPER ROLLING AND DRAWING	15.13	15.49	.9768

Perhaps the most noteworthy feature of the industries involved in antidumping and countervailing duty cases is their diversity. There are agricultural products (canned hams and refined sugar) and industrial products (ethanol and tapered roller bearings), but most are intermediate inputs or equipment (64K DRAMs and tillage tools) although some are consumer goods (candles and color TV receivers). The most prominent product group is carbon steel, in part because some products appear more than once.[41] Over time, domestic steel producers filed a number of petitions citing different foreign supplier(s) in each petition. Of those that reached final phase at the ITC, there were seven cases involving wire rods, six involving oil country tubular goods, and five cases each involving cold rolled sheet and standard pipe. Moreover, within the carbon steel group, pipe products were especially well represented. There were 24 cases involving various pipe products (e.g., oil country tubular goods, standard pipe, and light walled rectangular pipe).

The majority of domestic industries in the antidumping and countervailing duty cases are small, both in absolute size and relative to the four digit SIC industry of which they are a part. With respect to absolute size, the-smallest industries were very small indeed. They are choline chloride, fireplace mesh panels, feta cheese, and jalousie operators, each of which employed fewer than 100 production workers.[42] Only seven industries employed more than 10,000 workers, and four of the seven were in the steel industry. The other three were fresh pork, men's and boy's cotton T-shirts, and color TV receivers. With respect to relative size, two-fifths (30 of 75) of the domestic industries listed in Table 2.8 accounted for less than one percent of total employment in the four digit SIC industry, and more than two-thirds (52 of 75) of them accounted for less than five percent. Only 13 domestic industries accounted for more than 10 percent of SIC industry employment and three industries had more than 20 percent of SIC employment. These three are: color TV receivers (49 percent), refined sugar (40 percent), and color picture tubes (36 percent).

With respect to wage rates, the wages paid to employees in the vast majority of ITC cases do not appear appreciably different from the wages paid to employees in the four digit SIC industry to which they belong. Table 2.9 shows that the hourly wage rates paid by the domestic industries are typically within 20 percent of the average hourly wage rates of the respective SIC industry. [All wage rates are

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[41] Note that these steel cases, which reached the final phase at the ITC, are different from the preliminary steel investigations begun in 1982 (discussed in section IV) which were withdrawn when VRAs were negotiated with foreign suppliers. The cases discussed in this section also involve products or countries that were initially outside the VRAs negotiated at the end of 1984 subsequent to the escape clause action brought by the steel industry in that year under section 201 of the 1974 Trade Act.

[42] This does not include the case involving the cheese product imported from the EC (case number 10791) for which the ITC decided there was no close domestic substitute (i.e., no like product), and therefore zero domestic employment.

converted to 1984 dollars.] The five industries having the lowest relative hourly wage rates (i.e., ratio of industry wage to respective SIC industry wage) are: tubular steel chairs (.54), feta cheese (.64), nonmalleable cast iron pipe fittings (.67), light and heavy iron construction castings (.67), and mirrors (.69).[43] Only two industries have relatively high hourly wage rates: nitrile rubber (1.30) and cement (1.97). In most cases production workers received an hourly wage that exceeded $12.50, the average hourly wage for all manufacturing industries. This result is dominated by the high earnings paid to steel industry workers (over $20 per hour). As noted, there were many cases involving the steel industry.[44] Nonetheless, even excluding the cases involving steel, the average hourly wage of most industries is marginally greater than $12.50.

VII. Conclusion

The evidence reviewed in this chapter suggests that unfair imports were not a major problem for most U.S. industries that had sought protection. This conclusion, which does not support popular perceptions, is based on a survey of all antidumping and countervailing duty decisions made by the U.S. between 1980 and 1988 and a more careful examination of 174 of 221 final cases decided by the ITC.

Based on the 174 final ITC cases, we find that in 84 percent of the countervailing duty cases, 59 percent of the antidumping cases, and 58 percent of the joint antidumping/countervailing duty cases, the dumping (or subsidy) margin and the market share of unfair imports are both under 5 percent -- a cut-off below which we assume unfair imports are unlikely to have a significant impact on competing domestic industries. Therefore, in the majority of final cases unfair imports are unlikely to cause severe injury to domestic industry.

Finally, we find that there is a wide array of industries involved in final antidumping and countervailing duty cases. Most of the domestic industries (as defined by the ITC) are very small compared with the four digit SIC industries to which they belong. In addition, in most antidumping and countervailing duty cases domestic workers do not receive unusually high or low wage rates relative to the wage rate paid in the appropriate four digit SIC industry. Therefore, the effects of

[43] For awning operators and jalousie operators the low ratio of industry wage to SIC wage (.45) may be due to the fact that several domestic producers are in Puerto Rico, which has a low average wage rate, whereas the SIC wage is for the U.S. as a whole. Complete information about the location of the domestic producers supplying data on wage rates is not available.

[44] Note that in a recent paper de Melo and Tarr (1993) use a computable general equilibrium model to estimate the welfare effects of import restrictions on steel, where their model incorporates a tradeoff between the wage rate and employment on the part of a labor union monopoly. They find that if the union places a relatively high weight on wage rate (relative to employment) the welfare cost of an import restraint can be greater than when there is no wage premium because the import restraint exacerbates the labor market distortion.

unfair imports, even when severe, are not confined to a narrow collection of domestic industries or to particular groups of high-paid or low-paid workers.

CHAPTER 3

A MODEL TO ESTIMATE THE MAGNITUDE OF INJURY CAUSED BY UNFAIR IMPORTS

I. Introduction

Our overview of recent antidumping and countervailing duty cases in the previous chapter suggests that unfair imports are unlikely to have caused severe injury to domestic industry. However, we do not yet know the magnitude of the injury unfair imports do in fact cause. To estimate this injury more precisely, it is necessary to isolate the effect of unfair imports from other factors that may also have a negative impact on domestic industry. Specifically, the preexisting condition of the domestic industry, which incorporates unfair imports, needs to be compared with an accurate estimate of the counterfactual that removes unfair imports, i.e., the condition of the domestic industry but for the presence of unfair imports. This chapter describes the economic model used to estimate that counterfactual.

This chapter is organized as follows. Section II notes that unfair imports also affect consumers and the government. The principal features of our model are explained in Section III.[45] The way we measure injury is considered in Section IV and this is followed by a discussion of some extensions to the model in Section V. Appendix B provides the mathematical structure of the model.

II. Overall Effects of Unfair Imports

Before discussing the model it should be noted that although unfair imports generally cause adverse effects on competing domestic producers, this is only one part, and not necessarily the largest part, of the impact of these imports. Unfair imports may also benefit consumers, including downstream producers (through lower prices), increase government revenues (through duties collected), and affect the economy as a whole. While these overall effects of unfair imports may be important, they are outside the scope of this report and are not discussed further.[46]

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[45] Our model uses traditional demand/supply analysis and builds on the work of several economists. The classic contributions analyzing unfair imports, particularly dumped imports, include Haberler (1936) and Viner (1923). More recent contributions include Boltuck (1991) and Ethier (1982). Finally, there is also an emerging literature applying game theoretic concepts to analyze dumping and subsidy issues. For an overview of this literature, see Krugman (1989).

[46] The effect of unfair imports on domestic exports is also outside the scope of this report. Our analysis of the effect of unfair imports focusses on shipments by the domestic industry to the domestic market. This is the traditional focus of AD and CVD investigations. In part this is due to the fact that the measure of unfair price advantage by foreign firms is calculated with respect to sales by foreign firms in the United States. Further, it appears that domestic industry exports are relatively

(continued...)

III. Overview of Model

Since our purpose is to estimate injury from unfair imports, our model needs to track, step by step, the chain of events caused by the onset of foreign dumping or subsidization. An imported product is sold in the United States at a lower price than would be observed if it did not benefit from the unfair practice (dumping or subsidy). As a result, U.S. consumers substitute in favor of relatively cheaper imports and away from the competing domestic product. This decreased demand for the domestic product forces domestic producers to cut price, reduce output, or both. Thus, unfair imports injure the domestic industry.

Diagram of Model. Figure 3.1 illustrates how unfair imports affect domestic producers. The analysis for either dumping or subsidy cases generally involves two distinct products, one domestic and the other imported. They are close but not perfect substitutes (see below). We assume initially that all imports benefit from the unfair practice. Panel A shows demand (D) and supply (S) for the domestic product. Panel B shows the U.S. demand (d) for the imported product. The superscripts "0" and "1" denote unfair and fair (i.e., not unfair). Depending on pricing behavior, the same goods from the same foreign producers may be either fair or unfair. For example, if foreign firms charge price p^1, then imports are fair. On the other hand, if foreign firms charge price p^0, then imports are unfair. There is nothing inherently unfair about particular imported products or foreign producers.

The effect of unfair imports is illustrated by tracing through the consequences of a fall in the price of imports from p^1 (the fair price) to p^0 (the unfair price). To avoid unnecessary complications at this stage, we assume that the price of unfair imports is exogenously set by foreign firms.[47] In response to the lower price of imports, consumers increase purchases of imports from q^1 to q^0 and substitute away from the domestic product. This reduces demand for the domestic product from D

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[46](...continued)
small in the typical unfair import case.

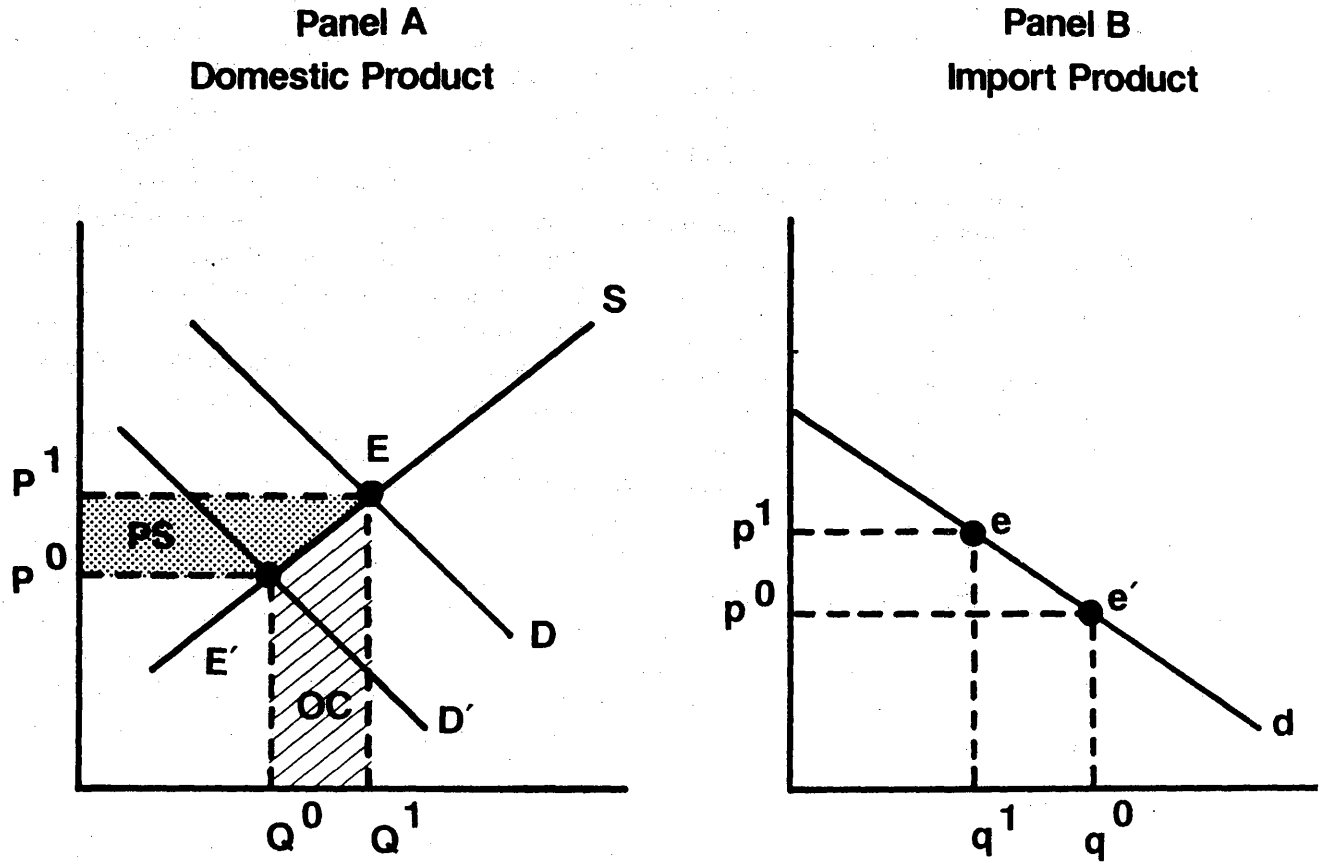
Note also, there is the argument, advanced for example by Stegemann (1985), that the antidumping law should be revised to include a "consumer interest" provision. Such a provision would require administering agencies to consider the interests of consumers before imposing antidumping or countervailing duties. With such a provision, Stegemann suggests that consumers or their representatives would be able to present assessments in unfair import investigations. This would make it possible for the public routinely to obtain estimates about e.g., the consequences of placing restrictions on imports.

An example of what could be done is reported by Kalt (1988) in his analysis of the 1986 softwood lumber case. Softwood lumber from Canada was a preliminary subsidy case that was settled when Canada imposed a 15 percent export duty. Kalt estimated that U.S. producers gained $416.8 million per year (producer surplus gain, 1986 dollars) while U.S. consumers lost $556.9 million per year (consumer surplus loss, 1986 dollars). Therefore, for the U.S. economy as a whole, the settlement imposed a cost of $140.1 million per year in reduced national income.

[47] Note that this analysis does not consider explicitly the interactions between import demand and price of domestic product. Thus, the import demand curve (d) drawn in Figure 3.1 fully incorporates adjustment to alternative prices of the domestic product. In addition, the results of our analysis in the text would not be changed if we considered an upward sloping import supply curve. Note, that an upward sloping import supply curve is related to the pass-through issue, which is discussed later in this chapter. A more complete treatment of import pricing is provided in Appendix B.

FIGURE 3.1

EFFECT OF UNFAIR IMPORTS



Note: Superscripts "0" and "1" denote unfair and fair respectively.

to D'. Consequently, both price and quantity of the domestic product fall, from P^1 to P^0 and Q^1 to Q^0. Thus, domestic producers reduce output and release resources to their next best uses (opportunity cost), the value of which is shown by the area labeled OC in panel A. Further, unfair imports cause a loss in producer surplus.[48] This is shown by the shaded area labeled PS, in panel A. The sum of areas OC and PS is the reduction in total domestic industry revenue caused by unfair imports.

Imperfect Substitutes. An important feature of our model is the assumption that unfair imports and the competing domestic product are close but not perfect substitutes. The reason for this is that even though products are defined rather narrowly in unfair import cases, from the standpoint of U.S. consumers, domestic and imported products are rarely perfect substitutes. This is consistent with the findings of numerous analyses of comparable domestic and imported products. The general result is that there are systematic differences between prices of domestic and imported products even though the two products appear to be physically identical.[49] These differences arise because there are many product dimensions (beyond physical characteristics, e.g., reliability of supply, promptness in filling orders, ability to modify specifications) that affect transaction prices. In particular, there are different constraints facing domestic producers and foreign producers in serving the domestic market (e.g., distance and customs formalities) that may affect optimal order size as well as size of inventories for some products, so that domestic and imported products come to be viewed as imperfect substitutes by purchasers.

Dumping and Subsidy. We can apply our model as illustrated in Figure 3.1 to both dumping and subsidy cases. As explained in Chapter 2, there are two sources for the price advantage of unfair imports. Either a foreign government subsidizes its industry or a foreign firm charges an unfairly low price on sales to the U.S. market. While there is a distinction between the analysis of subsidized imports and dumped imports (see Appendix B), for purposes of this general discussion we can ignore this distinction.

Pass-Through Issue. A central determinant of injury is the magnitude of the difference between the fair and unfair prices (the difference between p^1 and p^0 in Figure 3.1). This difference depends on: (1) the magnitude of the dumping/subsidy margin, denoted by M, and (2) the extent to which M is "passed through" to price. For present purposes, we assume that M is correctly measured, i.e., that M is the

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[48] Producer surplus is the excess of the value of output over the opportunity cost of the resources required to produce the output. This surplus can accrue to owners of capital, labor, or land, to the extent that each earns returns for use of their services in excess of what would be earned in their next best employments.

[49] These results are reported, for example in Isard (1977). See also Jondrow, Chase, and Gamble (1982) for a study of price differences involving domestic and imported steel products, and see Johnson, Grennes, and Thursby (1979) for a discussion of similar price differences for agricultural products.

Note that if domestic and imported products are perfect substitutes there can still be injury to domestic industry from unfair imports. However, a different model will need to be used. This matter is discussed in section V below.

difference between the fair and unfair prices.[50] The pass-through issue is analogous to the incidence of an excise tax on a product.[51] For example, if the full burden of a 10 percent excise tax falls on consumers, then the introduction of the tax will increase the price consumers pay by 10 percent.[52] Conversely, if the tax is then removed, price will fall by 9.09 percent from the tax inclusive price level (=0.10/1.10). Similarly, if importers bear the full burden of the dumping margin, i.e., if there is a full-pass through of the dumping margin M, the fair price will be M percent higher than the unfair price. As with the excise tax example above, there is also a symmetry with respect to the dumping margin. Thus, the percent fall in the import price from the fair to the unfair price will be M/(1+M) percent. In terms of Figure 3.1, with a full pass through of M, the relationship between p^1 and p^0 is: $p^1=(1+M)p^0$. This is the extreme case and provides an upper bound for the price increase of the unfair imported product absent the unfair practice. By symmetry, the full pass-through case also provides an upper bound for the price decrease of the imported product attributable to the unfair practice. The pass-through issue is discussed further in section V below.

Demand-Side Factors. The magnitude of the adverse effect depends on the price sensitivity of domestic supply curve S,[53] and on the extent of the decrease in demand for the domestic product. If unfair imports cause only a small decrease in demand for the domestic product (that is, if D' is very close to D), then the effect of unfair imports is slight. In our model the magnitude of the decrease in demand for the domestic product depends on four demand-side factors. (See Appendix B for a technical discussion of these factors.[54]) The first is the dumping or subsidy margin. The larger the margin the greater is the price advantage of unfair imports. A 50 percent margin compared to a 1 percent margin will provide a stronger incentive for consumers to shift from the domestic to the imported product. The second factor is the relative size of unfair imports compared to shipments by domestic producers, or the "market" share of unfair imports. For example, if a given unfair price advantage causes unfair imports to increase by 10 units and domestic shipments to fall by 10 units (assuming, for convenience, that there is a one for one tradeoff between unfair imports and domestic product, and also that total consumption is constant at 100 units), then the adverse impact on domestic

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[50] However, as discussed in chapter 2, it appears that the actual dumping and subsidy margins calculated by the Department of Commerce are biased upward. If there is an upward bias in the margin, then our model will generally overstate the percent difference between the fair and unfair prices and, as a consequence, overestimate injury.

[51] For example, see Layard and Walters (1978), p. 86.

[52] This result would hold if the supply curve of the product is horizontal in the relevant region.

[53] This is the price elasticity of the domestic supply.

[54] As explained more fully in Appendix B, in our model we assume that consumers demand a composite good that is a constant elasticity of substitution (CES) function of the domestic and imported products.

industry is relatively more severe the larger the initial quantity of unfair imports. Thus, if unfair imports initially are 20 units (market share 20 percent), then the percent contraction in domestic shipments is 12.5 percent (-10/80). If unfair imports initially are 50 units (market share 50 percent), then the contraction in domestic shipments is 20 percent (-10/50).[55] The third factor is the price sensitivity of consumers with respect to purchasing the composite good comprised of imported and domestic products.[56] If consumers are not very price sensitive then composite consumption increases very little when the average price of the composite product declines. Thus, a given unfair price advantage for the imported product will lower average price for the composite good but cause a relatively small increase in consumption of the composite good. Under these conditions, the primary effect of a given unfair price advantage for the imported product is to alter the mix of a virtually constant total composite consumption in favor of unfair imports, and the extent to which this occurs depends on the magnitude of the fourth factor. The fourth factor is the degree of demand substitution between the imported and domestic products.[57] If imported and domestic products are very close substitutes, a given price advantage will cause a relatively large switch by consumers from domestic to imported products. In summary, the shift in domestic demand from D to D' caused by unfair imports is greater: (1) the greater the size of the dumping or subsidy margin, (2) the greater the market share of unfair imports, (3) the smaller the price sensitivity of consumers to changes in the average price of domestic and unfairly imported products, and (4) the greater the willingness of consumers to substitute the imported product for the domestic product.

Fair Imports from Other Countries. In the large majority of unfair import investigations, there are also imports from other countries that are not alleged to be unfair. Henceforth we refer to these imports as fair imports; the term unfair imports will apply to those imports alleged to benefit from unfair practices.

To the extent that unfair imports compete with fair imports as well as the domestic product, the adverse effect of foreign subsidization or dumping on domestic producers is reduced. Part of the total impact of these practices is borne by suppliers of fair imports who also lose sales to unfair imports.[58]

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[55] Of course, the larger the initial quantity of domestic shipments, a given percent decline in the domestic industry will involve a larger absolute contraction in domestic shipments.

[56] Technically, this is the elasticity of demand for the aggregate (or composite) product that consists of the domestic product and the imported product.

[57] Technically, this is the elasticity of substitution in demand between the imported product and the domestic product.

[58] Note that all imports may come from just one country but only a few of the foreign firms in that country benefit from unfair practices. The other foreign firms do not. In this case, imports from the foreign firms that do not benefit from unfair practices would be fair imports. Note also that for the few unfair import cases that involve regional industries, shipments by domestic producers outside the region to consumers in the region are equivalent to fair imports.

The extent to which fair imports diminish the adverse effect of unfair imports on domestic producers is positively related to: (1) the supply response by foreign suppliers of fair imports and (2) the relative importance (i.e., market share) of fair imports compared with unfair imports in the U.S. market. If the supply response of foreign firms supplying fair imports is high compared to the supply response of domestic industry,[59] then unfair imports would take relatively more business away from fair imports than from domestic producers. Given the market share of all imports, if fair imports account for a large portion of total imports, then the impact of unfair imports on domestic producers will be relatively smaller.[60]

Simulation of Four Demand-Side Factors and Fair Imports. We can supplement the above discussion of the qualitative effects of the four demand-side factors and fair imports by providing plausible quantitative estimates of their effects. These quantitative estimates are obtained by applying hypothetical (but not unrealistic) data for certain key variables, such as the dumping margin, to the technical model described in Appendix B. The results of the simulations indicate how much each of the demand-side factors and fair imports contributes to the decrease in the demand for the domestic product, i.e., from D to D' in Figure 3.1.

The results of the simulations may be summarized as follows. First, as expected, the simulation results indicate that higher dumping/subsidy margins cause relatively sharper contractions in the demand for the domestic substitute product. But the results also reveal that this effect is stronger when fair imports are inflexible in supply and when the composite demand elasticity is low. Second, the simulations also show that higher market shares of unfair imports cause relatively higher declines in the demand for the domestic product, particularly when the dumping/subsidy margin is also high. Third, decreases in the composite demand elasticity are found to exacerbate the contraction in domestic product demand, especially when the margin is high. Fourth, the most significant finding concerns the substitution elasticity. Increases in this elasticity are found to cause substantially greater contractions in the demand for the domestic product. This effect is relatively strong in all cases, but especially so when the initial share of unfair imports and the margin are both high. Further elaboration of these points is given in Appendix C, which has a full discussion of the simulations.

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[59] That is, import supply of fair imports is relatively elastic.

[60] Note that we do not consider a third factor, differences in the degree of substitution between domestic product, unfair imports, and fair imports. We assume the degree of substitution between any pair of products is the same. However, if consumers regard all import products (unfair and fair) as close substitutes that are differentiated from the domestic product, then additional unfair imports would supplant fair imports more than the domestic product. To the extent this is true, our model will overstate the effect of unfair imports on the domestic industry.

IV. Measuring Adverse Effect of Unfair Imports

In addition to the factors considered above, the magnitude of the adverse effect of unfair imports on a domestic industry also depends on the supply response of domestic producers to changes in market prices (i.e., the elasticity of supply of the domestic industry). For a complete analysis of injury, it is necessary to consider all the principal demand and supply forces that affect a domestic industry.

We measure the adverse effect of unfair imports by the percent decline in domestic industry total revenue. It is convenient to focus on the change in total revenue because it incorporates the effects of unfair imports on domestic price and on domestic shipments. Moreover, as explained below, it is also closely correlated with changes in other measures of industry performance, including domestic industry profits and employment.[61]

Returning to Figure 3.1, the reduction in total revenue is shown as the sum of areas OC and PS in panel A. Our measure of injury reflects the combination of: (1) the decline in producer surplus and (2) the decline in domestic industry output. The decline in producer surplus depends on the extent of the decline in price (price effect) caused by unfair imports. The decline in domestic industry production (quantity effect) will be correlated with domestic adjustment costs, i.e., the displacement of domestic resources (e.g., labor) employed by the industry. Thus, the greater the quantity effect the greater the relative adjustment cost burden imposed on the industry's workers consequent to unfair imports. The relative magnitudes of the price and quantity effects depend on the elasticity of domestic supply.

For example, if domestic supply were highly inelastic there would be a relatively small quantity effect but a relatively large price effect from a given contraction in demand for the domestic product. Thus, the decline in revenue would closely approximate the decline in producer surplus while adjustment costs would be relatively small. However, if domestic supply were highly elastic there would be a large quantity effect but a small price effect. Thus, the decline in revenue would primarily reflect adjustment costs while the loss in producer surplus would be relatively small. For a moderate supply elasticity (as shown in Figure 3.1) there would be intermediate declines in producer surplus and intermediate adjustment costs.[62]

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[61] Furthermore, note that U.S. law requires that the ITC consider the change in domestic industry total revenue. 19 U.S.C., sec. 1677(7)(C)(iii)(I).

[62] The discussion in the text assumes that the domestic industry is perfectly competitive. Note that if there is imperfect competition (with constant marginal costs and no fixed entry costs), then price exceeds marginal cost. Assuming that variable factors are paid their opportunity costs, then the decline in industry revenue caused by unfair imports is positively related to the reduction in profits of domestic firms.

V. Extensions and Refinements

Applying the framework discussed in section IV generally gives upper bound estimates of the adverse effect of unfair imports on domestic producers. This is because that framework assumes: (1) unfair imports and the domestic product are differentiated products and (2) the price advantage of unfair imports is based on the full pass-through of the dumping/subsidy margin. When these assumptions do not hold, the magnitude of the adverse effect is smaller.

World Markets for Standardized Products. There are situations where the degree of substitution between imported and domestic products is very high so that there is essentially one product (i.e., a standardized product) and it is traded in a world market. In such instances global demand and supply determine the world market price. If imports into the U.S. do not affect the world price, then unfair practices by a country too small to change the world price do not affect domestic producers.[63] This is because total imports would not change. However, import supply to the United States from the country engaging in the unfair practice increases. The consequence is that the country composition of imports changes: increased imports from the country supplying unfair imports displace an equivalent quantity from other countries. Our basic model is not designed for cases involving world markets with standardized products. Such cases will be examined separately.[64]

Pass-through Issue. As discussed above, the impact of unfair imports depends on the difference between the fair and unfair prices of the imported product, which in turn depends on the extent to which the dumping margin is "passed through" to the price of unfair imports.[65] The greatest difference between

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[63] That is, the world price is the import supply curve for the United States.

[64] Indeed, simulations of our model show that it would produce upward biased injury estimates if it were used for cases involving world markets and standardized products. Specifically, we inserted elasticity values into our differentiated products model to attempt to capture (a) a very high degree of substitutability between domestic and imported products in consumption and (b) a very high import supply elasticity for fair imports. The simulation results incorrectly suggest that unfair imports would have an appreciable adverse effect on domestic industry. The correct result for such cases is that the effect of unfair imports is virtually nil. The specific example used in the simulations has the following specifications: domestic quantity is 50 and unfair and fair imports are 25 each, own demand elasticity for the composite product is -1, the elasticity of substitution is 30 (higher substitution elasticities cause our model to crash, i.e., the model cannot solve because of exponential overflows), domestic supply elasticity is 5, and fair import supply elasticity is 200. If the dumping/subsidy margin is 5 percent unfair imports are estimated to cause domestic industry revenue losses of 7 percent, if the margin is 10 percent estimated losses are 9.6 percent, and if the margin is 25 percent estimated losses are 10.6 percent. Thus, these results show that if our differentiated products model were applied to cases involving standardized products, injury to domestic industry would be substantially overestimated.

[65] We confine our attention of the pass-through issue to dumped imports and provide estimates for five cases (in the next chapter). We were only able to obtain the requisite data needed to develop the estimates for these cases.

(continued...)

the fair and unfair import prices occurs when there is a full pass through, i.e., when $p^1 = (1+M)p^0$. With partial pass through, there is a smaller difference between the fair and unfair prices so that the adverse impact of unfair imports is also smaller.

In dumping cases, a partial pass through can occur if a foreign firm has monopoly power and practices price discrimination by charging a lower price on sales to the U.S. market compared to the price charged on sales to its home market. In this case, M measures the difference between the initial price charged in home market and the initial price charged in the U.S. market (divided by price charged in U.S. market). A partial pass through can occur if the foreign firm is then constrained to charge the same price in both markets (i.e., to cease dumping). As explained more fully in Appendix B, the foreign firm will then optimally adjust prices in both markets based on relative sales to the two markets.[66] For example, if sales to the U.S. market account for a large share of total sales (U.S. market plus foreign market), the bulk of the price adjustment will take place in the home market of the foreign firm: price in home market will fall substantially compared to the price increase on sales to the U.S. market. As a consequence, the fair price charged to the U.S. market will not be M percent higher than the unfair price: the fair price will be less than this. This is referred to as a partial pass through of the dumping margin.[67] Finally, by symmetry the decrease in import price attributable to dumping will be smaller than M/(1+M) percent so that the injury caused by dumping is smaller under partial pass through than under full pass through.

VI. Conclusion

The model presented in this chapter provides an analytic framework to obtain estimates for the magnitude of injury suffered by domestic industry as a result of

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[65](...continued)

Note that potentially there is a pass-through issue for subsidy cases as well. Specifically, if the import supply of unfair imports has a finite elasticity, then the subsidy margin will not be fully passed through to the price of unfair imports. For a discussion see Knoll (1989), pp. 56-76.

[66] Haberler (1936), p. 303, was apparently the first to suggest that the effects of price dumping be analyzed by using a benchmark where the foreign firm was constrained to charge a uniform price in both markets. See also Boltuck (1991) for development of this concept.

[67] This paragraph deals with situations involving dumping by a foreign firm. However, a foreign firm may have monopoly power and receive subsidies, but not dump. In this situation, Morkre (1993) shows that there would also be a partial pass through of the unfair price advantage. This result was found for four types of oligopoly (i.e., Bertrand, consistent conjectures, Cournot, and collusion) assuming that marginal costs are constant and that demand functions are linear. Under these conditions, there is a wedge between price and marginal cost and the price of the imported product does not fall by the full amount of the subsidy.

Using a model that assumes Bertrand competition but allows for nonlinear demand and non-constant marginal costs, Feenstra (1989) also finds that, for what he calls the "normal" case, there would be a partial pass through. Feenstra's equation (4) shows that with increasing marginal costs and constant demand elasticity there would be a partial pass through. However, with constant marginal costs and constant demand elasticity, there would be a full pass through.

dumped or subsidized imports. Note that our model is not designed to account for the total injury suffered by domestic industries from all possible factors; rather it is designed to find the quantum of injury that is directly attributable to the unfair practices of dumping and subsidization. To attempt to explain total injury would require a different, and more complex, analytic framework. Our aim in this report is more modest.

Chapter 2 presented some of the essential data needed by our model, specifically quantities and values of domestic and imported products, and dumping or subsidy margins. This chapter has identified the remaining data needed by our model, specifically certain demand and supply parameters (i.e., elasticities). We proceed next to the estimates themselves.

CHAPTER 4

ESTIMATES OF THE EFFECTS OF UNFAIR IMPORTS ON DOMESTIC INDUSTRIES

I. Introduction

This chapter provides upper bound estimates of injury to domestic industries caused by unfair imports. The estimates are obtained by applying the model presented in the previous chapter to the data sample discussed in Chapter 2. Our survey in Chapter 2 suggested that countervailing duty cases were less likely than antidumping cases to involve severe injury to domestic industries. To explore this issue more fully, in this chapter we distinguish between the injury estimates for countervailing duty and antidumping cases. Further, we also separate out joint cases, cases that involve both dumping and subsidies. Finally, as explained in Chapter 3, injury is measured by percent decline in domestic industry revenue caused by unfair imports.

We first explain why it is necessary to adopt the approach of calculating upper bound estimates (section II) and then discuss how this approach is implemented (sections III and IV). The injury estimates follow (sections V through XI).

II. Upper Bound Approach

Ideally, we would have a complete set of the requisite empirical data required by our model and could calculate accurate estimates of the injury suffered by domestic industries. Unfortunately, this is not possible for two main reasons. First, we must rely on Department of Commerce calculations for the dumping and subsidy margins. As discussed in the previous chapter, these margins appear to be biased upward. Second, there is a paucity of empirical information about the two demand elasticities required by our model: (1) the elasticity of demand for the aggregate (or composite) product that consists of the domestic product, unfair imports, and fair imports and (2) the elasticity of substitution between the domestic and imported products. As discussed chapter 2, many ITC cases involve very small and very specialized products (e.g., fireplace mesh panels, fire hose couplings). Not surprisingly, empirically-based estimates of the two demand parameters for these types of products (or even for somewhat broader product groups that include these specific products) are simply not available. Nor was it possible to develop appropriate values for them during the course of this study.[68]

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[68] Since the fall of 1987, ITC staff generally provides estimates of demand and supply elasticities for final investigations. For several recent cases, we use the ITC estimates.

It is possible, nonetheless, to obtain upper bound injury estimates for all 174 cases in our data sample. This is done by using a value for the elasticity of demand for the aggregate product that is close to zero and a value for the elasticity of substitution that is sufficiently high that we can be fairly certain that the computed effect of unfair imports overstates the actual effect. It is possible to "fine tune" the injury estimates by using more appropriate values for one or both of the demand parameters, if they are available.[69] However, if the maximal injury estimate is small this fine tuning is unnecessary. Accordingly, we limited our efforts to find case specific values for the two demand parameters to cases where the initial upper bound estimates suggest that injury could be large.

In this context, "large" means a domestic industry revenue loss of 10 percent or more. The 10 percent figure is arbitrary. However, note that an industry suffering a decline in revenue of 10 percent is not likely threatened with anything approaching extinction. For example, in a competitive industry with ten equal-sized firms, a 10 percent revenue decline corresponds to the displacement of one domestic producer.[70] There is no question regarding the survival of the domestic industry; indeed none of the other nine firms would sustain permanent injury from unfair imports. However, since upper bound injury estimates are provided for all cases, readers who wish to assess the results using other general thresholds for "large" can do so. It is also possible, of course, to modify the threshold for individual industries.[71]

III. Four Stages

We present four collections of injury estimates, starting with estimates that provide maximum upper bound estimates (stage I), and then proceed, step by step, to obtain successively more realistic estimates. This is done by introducing more appropriate parameter values, one at a time, for each of three key parameters (stages II through IV). Stages I and II are initial stages that both use common parameter values for certain demand parameters (explained below). Stages III and IV use parameter values for the two demand parameters that are unique to each case.

The three key parameters are: (1) the elasticity of supply of fair imports (e.g., imports from countries not under investigation), (2) the elasticity of demand for the aggregate (or composite) product, and (3) the elasticity of substitution between the domestic and imported products.

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[69] Appendix D gives the elasticity estimates and discusses the sources for these estimates.

[70] This assumes that long run industry supply is infinitely elastic and that minimum efficient scale is one-tenth the level of industry output prior to the unfair practice.

[71] Finally, note that U.S. law does not specify a quantitative threshold for injury. See 19 U.S.C., sec. 1677(7)(C)(iii)(I).

Finally, a fourth parameter is also needed to estimate injury. This parameter is the domestic supply elasticity. Available evidence suggests that manufacturing industries have a relatively high elasticity of supply while agricultural and natural resource products have a relatively low elasticity of supply.[72] For each case we use the appropriate domestic supply elasticity for all four stages.

Stage I. With the exception of the domestic supply elasticity, a common set of elasticity values is used for all cases. Regarding the elasticity of supply of fair imports, we make the unrealistic assumption that it is zero.[73] Suppliers of fair imports are therefore treated as being completely insensitive to price and therefore to unfair imports. They are assumed to maintain the same quantity of shipments to the U.S. even though unfair imports depress prices in the U.S. market. The effect of this is to make the injury to the domestic industry larger because the price decrease from unfair imports is not mitigated by decreases in the quantity of fair imports.

Regarding the elasticity of demand for the aggregate or composite product, we make the unrealistic assumption that it is (practically) zero.[74] Thus, demand for the aggregate product is regarded as being virtually completely inelastic. Even though prices will be lower when there are unfair imports, we assume that consumers do not increase their overall purchases of domestic and imported products. Thus, in a sense there is a zero-sum game: the entire amount of the increase in imports comes at the expense of domestic producers. Lost sales by domestic producers are therefore exaggerated.

Under these two assumptions the "size" of the domestic market is fixed (i.e., aggregate consumption of the composite product is assumed to be almost constant) and the burden of reducing quantity when unfair imports occur falls completely on domestic producers. Additional imports due to the unfair practice take business away only from domestic producers. Another way of interpreting this situation is that foreign suppliers of fair imports feel constrained to preserve their preexisting volume of business in the U.S. market. The only way this can be done, given that prices of unfair imports have been cut, is to reduce prices of fair imports.[75]

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[72] For an elaboration see Appendix D.

[73] This assumption is, of course, made only if fair imports are present.

[74] Specifically, we assume that the aggregate demand elasticity is equal to -0.01. Our model does not solve if this elasticity is set equal to zero.

[75] Note that if the price of fair imports falls sufficiently -- to be below the normal level -- all imports may be unfair. However, the foreign suppliers of fair imports are merely responding to the practices adopted by foreign suppliers of unfair imports.

Regarding the elasticity of substitution between the domestic and imported products, we make the unrealistic assumption that they are very close substitutes.[76] Furthermore, we assume that the degree of substitution between the domestic product, unfair imports, and fair imports is the same, even though it is likely that unfair and fair imports are generally closer substitutes for each other than each imported product is for the domestic product.[77] Consequently, the estimates of our model imply that, for any given price advantage arising from the unfair practice, U.S. purchasers will switch from domestic product to unfair imports to a greater extent than is likely to be true. Again, this increases the domestic industry injury estimate because a given price decrease from unfair imports will cause demand for the domestic product to fall by a greater extent than if we used smaller and more appropriate value for the elasticity of substitution.

In summary, this combination of assumptions ensures that estimated injury to domestic industry from unfair imports will be a maximum.

Stage II. In the second stage, we move from the maximum injury estimate toward more realistic estimates by allowing suppliers of fair imports to adjust shipments in response to unfair imports. This is the only difference between stage II and stage I. Although the total market size is still fixed, unfair imports now take business away not only from domestic producers but also from foreign suppliers of fair imports.[78] Thus, the injury estimates for stage II will be smaller than the injury estimates for stage I. That is, some of the effect of the price decrease caused by unfair imports is mitigated by a reduction in the quantity of fair imports supplied.

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[76] Specifically, we assume that the elasticity of substitution between the domestic and imported products is equal to 9. Econometric evidence obtained by Shiells, Stern, and Deardorff (1986), by Reinert and Roland-Holst (1992), and by ITC staff in conjunction with final antidumping or countervailing duty investigations suggests that reasonable values for substitution elasticities rarely exceed 5. See also Appendix D.

[77] This is based on the argument that U.S. purchasers first choose between a domestic product and (any) foreign substitute products. If they choose the latter, they then choose between alternative imported products. In part this appeals to the notion that for U.S. industrial purchasers (recall from Chapter 2 that most ITC cases involve intermediate products) there are special costs for importing from any foreign source compared to purchasing from domestic sources. For instance, the time to fill an order is usually longer for imports and assurance of supply of imports is less. Purchasers adjust by holding larger average inventories. For a discussion of these issues for imports of steel products, see Jondrow, Chase, and Gamble (1982).

Note finally that this is not necessarily inconsistent with the following empirical result obtained by Grossman (1982): imported products from both developed and developing countries are relatively close substitutes for domestic products, but are imperfect substitutes for each other. Domestically produced goods apparently cover a relatively broad quality range. The low quality domestic varieties compete closely with imports from developing countries while high quality domestic varieties compete closely with imports from developed countries. This suggests that there are two domestic products, a low quality version and a high quality version.

[78] Note that the amount by which unfair imports increases consequent to the unfair practice is greater when fair imports are flexible because this flexibility reduces the decline in prices of fair imports and the domestic product making unfair imports relatively more attractive.

The greater is the elasticity of supply of fair imports, the greater will be the relative contraction in fair imports in response to unfair imports. In this stage (and in subsequent stages), this elasticity is assumed to equal the domestic supply elasticity. Fair import supply is expected to be at least as elastic as domestic supply. This is based in part on the argument that in the longer term (and for a particular product) the supply response by domestic producers is comparable to the supply response of foreign producers of fair imports. Unlike domestic supply, import supply is also based on demand responses, i.e., by consumers in the home country of foreign producers as well as demand responses of consumers in the other countries (in addition to the United States) that also import the product in question. Thus, if the price of fair imports in the United States goes up, the consequent increase in fair imports will be greater than that indicated by the production response abroad because foreign producers can divert additional product to the United States.[79]

Note that stage II estimates are provided only for cases where there are fair imports. In cases where fair imports are absent, we do not allow for the possibility that fair imports may enter the domestic market if the unfair practice were removed because we know of no reasonable way of doing so. This also tends to overstate the injury estimate, particularly when unfair imports have a large unfair price advantage. This is because the unfair practice may have eliminated fair imports completely, which reduces the injury otherwise incurred by the domestic industry. Absent the unfair practice, the price of unfair imports would increase significantly, providing a strong incentive for potential suppliers of fair imports to export to the U.S. market.

Stage III. For cases where injury is estimated to be large through stage II (i.e., greater than 10 percent), we attempt to find case specific values for the demand parameters. In stage III, we refine the injury estimates by removing the unrealistic assumption that the total market size is fixed. Some unfair import sales result from the fact that their lower prices attract new customers to the market. Thus, not all additional unfair import sales come at the expense of domestic producers and foreign suppliers of fair imports. Accordingly, estimated injury to domestic producers will be smaller for stage III than for stage II.

Stage IV. As a final refinement in the injury estimates, we remove the unrealistic assumption that the unfair import product and the domestic product are

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[79] The numerical value of the import supply elasticity of fair imports is, of course, an empirical question. However, specific information about this elasticity is very sparse. See, for example, the survey by Goldstein and Khan (1985), p. 1087, note 65. Traditionally, import supply of a particular product for a large group of countries is taken to be very highly elastic, i.e., infinite, partly on grounds that these countries can readily divert shipments to the U.S. market from other markets, including their own home markets, when price in the U.S. market increases. We assume that output responsiveness in foreign countries is of a comparable order of magnitude to that in the United States. Thus, since exports equal total output minus domestic consumption, the import supply elasticity to the U.S. market will be at least as large as the U.S. domestic supply elasticity.

very close substitutes. The lower is the degree of substitution, the smaller will be the decrease in quantity of domestic output due to the unfair practice. Accordingly, domestic producers lose less business to unfair imports and the estimated injury to domestic producers will be less for stage IV than for stage III.

IV. Pass through of Unfair Price advantage and Adjustment for World Market

In all four stages, we make the extreme assumption that there is a full pass through of the dumping or subsidy margin. As explained in Chapter 3, for certain antidumping cases this assumption overestimates the adverse effect of unfair imports on domestic producers. We have sufficient data for five antidumping cases to calculate a partial pass through injury estimate.

Similarly, in all four stages we assume that domestic and imported products are differentiated products and our model is designed to analyze this situation. However, there is one case (involving urea) where it is important to adjust for a world market and a standardized product.

V. Results for Stage I

Tables 4.1, 4.2, and 4.3 give the injury estimates for the 174 cases in our sample. Recall that injury is defined as the percentage decline in domestic industry revenue due to the unfair trade practice. The three tables divide the 174 cases according to the type of practice that led to unfair imports. Table 4.1 is for the 57 cases that involve only subsidized imports. Table 4.2 is for the 105 cases that involve only dumped imports. Table 4.3 is for the 12 cases that involve both subsidized and dumped imports. The three tables also provide certain information about each case, i.e., product, date of the case, dumping or subsidy margin, and the domestic market shares of unfair and fair imports.[80]

Finally, in reviewing the results it is helpful to keep in mind the conjecture we made in chapter 2, section V: that unfair imports will not have a significant effect on the domestic industry unless both the margin (subsidy or dumping) and share of unfair imports exceed 5 percent. As we will see shortly, with but rare exceptions, even the maximum upper bound estimates for injury in stage I validate this conjecture.

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[80] The tables also indicate whether import shares are based on dollar values of imports (indicated by a "1" under column "Import Data Type") or quantities of imports (indicated by a "2"). Whenever possible we use value data to estimate injury. As explained in the appendix to this chapter, if it is necessary to use quantity data, then the resulting injury estimates will generally be biased upward.

Subsidy Cases. Even under conditions designed to obtain the largest possible injury estimates, the results for stage I in Table 4.1 show that for the vast majority of countervailing duty cases, 54 of 57 cases, the domestic industry suffers a revenue loss of less than 10 percent from unfair imports. Moreover, in nearly three-fourths of the countervailing duty cases, 41 of 57 cases, the injury is less than 5 percent. In 10 countervailing duty cases the injury is less than 1 percent.

The results also show that a domestic industry suffers appreciable injury only when both the unfair price advantage and the unfair import penetration ratio are moderately large. This can be illustrated by examining two cases. Groundfish fillets (case no. 10662) has the largest unfair import penetration ratio in Table 4.1: 34.4 percent. However, injury is very small, only -1.28 percent. This is explained primarily by the fact that the subsidy margin is very small, 1.08 percent. For this case, which involves a natural resource product, domestic supply is highly inelastic[81] so that the principal way domestic industry responds to unfair imports is by reducing price. Since unfair imports are relatively large they can have a sizeable impact on market prices through the unfair price advantage. To illustrate, suppose the depressed price received by domestic producers is $100. The maximum extent by which domestic price could have been depressed by unfair imports is $1.08 divided by $101.08. That is, price would have been at most $101.08 absent the subsidy. Thus, since domestic shipments do not change appreciably, the maximum revenue loss caused by unfair imports is almost the same as the subsidy margin, 1.07 percent.

On the other hand, standard pipe (case no. 18103) has a very high subsidy margin: 65.24 percent. But here too injury is very small, only -1.09 percent. This is due primarily to the small market share of subsidized imports, only 0.43 percent. Furthermore, fair imports account for a very large part of the market, 51.49 percent. For this case, which involves a manufactured product, domestic supply is highly elastic[82] so that the predominant response by domestic industry to unfair imports is a contraction in shipments. Since the size of the domestic market is fixed (by assumption in stage I), suppose, solely for convenience, that the total size is 10,000 units. Thus, 43 units are taken by unfair imports, 5,149 units by fair imports, and 4,808 units by domestic producers. The maximum adjustment by domestic producers is a loss of 43 units. Accordingly, since fair imports remain unchanged, domestic producers would have shipped at most 4,851 (=4,808+43) units absent injury by unfair imports and the maximum revenue loss caused by unfair imports is closely approximated by 43 divided by 4,851, or 0.89 percent.

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[81] The elasticity of domestic supply is 0.32. See the appendix to this chapter.

[82] The elasticity of domestic supply is 10. See the appendix to this chapter.

TABLE 4.1

INJURY TO DOMESTIC INDUSTRY CAUSED BY UNFAIR IMPORTS:
COUNTERVAILING DUTY CASES

Row Number	Case	Date Report Issued	Product	Subsidy Margin	Domestic Market Share		Import Data Type	Injury Estimates			
					Unfair Imports	Fair Imports		Stage 1	Stage 2	Stage 3	Stage 4
				(----------Percent----------)				(----------Percent----------)			
1	10450	MAR80	NONRUBBER FOOTWEAR	1.01	0.40	3.87	2	-0.04	-0.04	.	.
2	10480	MAR80	COLD PIG IRN	6.07	17.20	27.31	2	-9.50	-7.24	.	.
3	10610	MAY80	DEXTR & SOL CHEM TR STAR	35.84	2.63	0.33	1	-3.01	-3.01	.	.
4	10630	MAY80	ELEC DIGIT & COUNT SCALE	4.00	10.08	0.00	1	-3.10	.	.	.
5	10661	MAY80	WHOLE GROUND FISH	1.08	3.50	4.76	2	-0.70	-0.70	.	.
6	10662	MAY80	FILLETS GROUND FISH	1.08	34.40	43.08	2	-1.28	-1.28	.	.
7	10760	JUN80	CAN TOMAT & TOMATO CONC	77.20	1.10	2.76	2	-5.12	-5.03	.	.
8	10770	JUN80	COOKIES	27.70	0.43	0.00	1	-0.50	.	.	.
9	10792	JUN80	FETA CHEESE	12.50	5.10	50.05	2	-10.47	-8.09	.	.
10	10820	JUL80	CANNED HAMS	33.74	14.97	28.89	2	-27.54	-25.21	-14.09	-10.95
11	10861	JUL80	COTTON SHEETING	10.80	9.70	26.23	2	-8.51	-6.37	.	.
12	10862	JUL80	COTTON TOWELS	12.50	3.60	10.89	2	-3.01	-2.72	.	.
13	10863	JUL80	MEN & BOYS COTTONT-SHIR	13.50	2.40	1.62	2	-1.96	-1.86	.	.
14	11440	MAY81	LEATHER WEARING APPAREL	14.38	2.80	65.50	2	-6.37	-2.25	.	.
15	12810	AUG82	WIRE STR STL PREST CONCR	1.77	5.61	53.98	2	-1.77	-0.89	.	.
16	13250	DEC82	WIRE STR STL PRESTC ONCR	6.97	1.63	57.96	2	-1.96	-0.79	.	.
17	13331	DEC82	HOT-ROLL STAINL STL BAR	15.43	0.90	9.66	1	-0.79	-0.70	.	.
18	13332	DEC82	COLD-FORM STAINL STL BAR	15.43	3.20	11.54	1	-3.10	-2.72	.	.
19	13333	DEC82	STAINLESS STEEL WIRE ROD	15.43	4.60	38.74	1	-6.10	-3.75	.	.
20	13450	FEB83	WEL CARB STL PIPES & TUB	1.88	14.00	20.41	2	-2.63	-2.15	.	.
21	13580	MAR83	WIRE STR STL PREST CONCR	13.90	3.64	55.95	2	-6.37	-2.91	.	.
22	13911	JUN83	STAINLESS STL SHEET & STRP	19.31	0.70	14.47	2	-0.79	-0.70	.	.
23	13912	JUN83	STAINLESS STEEL PLATE	19.31	3.40	8.77	2	-3.38	-3.10	.	.
24	13981	JUN83	HOT-ROLL STAINL STL BAR	15.44	2.30	19.10	2	-2.44	-1.96	.	.
25	13982	JUN83	COLD-FORM STAINL STL BAR	15.44	3.20	28.44	2	-3.66	-2.63	.	.
26	13983	JUN83	STAINLESS STEEL WIRE ROD	15.44	2.80	50.19	2	-4.58	-2.34	.	.
27	14031	JUL83	TOOL STEEL BAR & ROD	18.77	3.20	37.09	2	-4.67	-2.91	.	.
28	14060	JUL83	FROZ CONCEN ORANGE JUICE	2.77	29.70	1.84	2	-3.10	-3.10	.	.
29	14900	FEB84	SHOP TOWELS	12.67	2.11	25.28	1	-2.15	-1.57	.	.

TABLE 4.1

INJURY TO DOMESTIC INDUSTRY CAUSED BY UNFAIR IMPORTS:
COUNTERVAILING DUTY CASES--Continued

Row Number	Case	Date Report Issued	Product	Subsidy Margin	Domestic Market Share: Unfair Imports	Domestic Market Share: Fair Imports	Import Data Type	Injury Estimates: Stage 1	Stage 2	Stage 3	Stage 4
				(Percent)				(Percent)			
30	15381	JUN84	CARBON STEEL PLATE	36.95	3.90	19.60	2	-5.48	-4.40	.	.
31	15382	JUN84	HOT-ROLL CARB STEE SHEET	36.95	2.30	16.34	2	-3.01	-2.53	.	.
32	15383	JUN84	COLD-ROLL CARB STL SHEET	36.95	2.20	12.97	2	-2.91	-2.53	.	.
33	15440	JUN84	CARBON STEEL WIRE ROD	16.95	1.80	20.96	2	-1.96	-1.57	.	.
34	16331	JAN85	OIL COUNTRY TUBULAR GOOD	0.53	3.20	41.39	2	-0.30	-0.20	.	.
35	16332	JAN85	OIL COUNTRY TUBULAR GOOD	8.22	5.90	38.75	2	-5.21	-3.29	.	.
36	16340	JAN85	COLD-ROLL CARB STL SHEET	3.60	1.20	14.04	2	-0.40	-0.40	.	.
37	16811	APR85	MALLECAST-IRON PIPE FIT	18.00	1.70	34.72	2	-3.01	-1.96	.	.
38	17331	JUL85	FRESH PORK	6.30	2.20	0.73	2	-2.53	-2.53	.	.
39	17332	JUL85	LIVE SWINE	8.40	1.60	0.00	2	-2.34	.	.	.
40	17591	SEP85	CARBON STEEL PLATE	8.77	1.50	26.41	2	-1.19	-0.89	.	.
41	17592	SEP85	HOT-ROLL CARB STEE SHEET	5.48	1.20	19.55	2	-0.60	-0.50	.	.
42	17593	SEP85	COLD-ROLL CARB STL SHEET	3.85	3.67	17.52	2	-1.38	-1.19	.	.
43	17611	OCT85	DISCS (TILLAGE TOOLS)	8.06	17.20	.	1	-8.92	.	.	.
44	17612	OCT85	OTHER TILLAGE TOOLS	8.06	2.70	.	1	-1.48	.	.	.
45	18101	FEB86	LINE PIPE1	7.80	0.70	44.39	2	-1.19	-0.70	.	.
46	18103	FEB86	STANDARD PIPE	65.24	0.43	51.49	1	-1.09	-0.50	.	.
47	18181	MAR86	ETHANOL	2.60	14.52	4.64	1	-3.10	-3.01	.	.
48	18441	MAY86	WHOLE GROUND FISH	5.82	22.00	0.40	2	-6.19	-6.19	.	.
49	18442	MAY86	GROUND FISH FILLETS	5.82	19.30	2.58	2	-6.10	-6.01	.	.
50	18484	MAY86	OFFSHORE PLATFORM PILES	4.42	10.50	14.50	2	-4.12	-3.57	.	.
51	18800	JUL86	IRON ORE PELLETS	7.94	1.40	17.51	2	-0.99	-0.79	.	.
52	19341	JAN87	AWNING OPERATORS	4.76	26.72	.	2	-8.68	.	.	.
53	19342	JAN87	JALOUSIE OPERATORS	4.76	25.00	.	2	-8.26	.	.	.
54	19361	JAN87	TOP-STOVE STAIN ST COOK	0.81	23.60	17.77	1	-1.77	-1.48	.	.
55	19662	APR87	WELD STAIN STL PIPE & TU	2.18	2.90	12.73	1	-0.60	-0.60	.	.
56	20011	AUG87	ASPIRIN	19.54	3.5	8.466	1	-3.57	-3.29	.	.
57	21032	AUG88	ELEC CONDUC ALUM RE ROD	38.40	11.0	5.406	1	-13.19	-12.89	-12.66	-8.42

Notes: Import Data Type = 1 for value.
Import Data Type = 2 for volume.
A "." indicates not available.

Source: Bureau of Economics, FTC.

TABLE 4.2

INJURY TO DOMESTIC INDUSTRY CAUSED BY UNFAIR IMPORTS:
ANTIDUMPING CASES

Row Number	Case	Date Report Issued	Product	Dumping Margin	Domestic Market Share: Unfair Imports	Domestic Market Share: Fair Imports	Import Data Type	Injury Estimates: Stage 1	Stage 2	Stage 3	Stage 4
				(Percent)				(Percent)			
1	10461	MAR80	SPUN ACRYLIC PLIED YARN	23.19	12.00	19.21	2	-13.79	-11.19	-9.58	-3.66
2	10462	MAR80	SPUN ACRYLIC PLIED YARN	48.05	4.00	26.92	2	-6.19	-4.49	.	.
3	10470	MAR80	REFINED SUGAR	20.33	3.31	0.00	2	-8.76	.	-8.00	.
4	10651	MAY80	MELAMINE IN CRYSTAL FORM	31.05	4.75	18.43	1	-6.28	-5.12	.	.
5	10652	MAY80	MELAMINE IN CRYSTAL FORM	12.16	2.55	20.62	1	-2.34	-1.86	.	.
6	10880	AUG80	STEEL WIRE NAILS	11.50	7.10	57.43	2	-11.03	-4.94	.	.
7	11160	DEC80	POLYPHASE AC ELEC MOTORS	6.70	4.30	.	1	-2.06	.	.	.
8	11180	DEC80	ANHYDROU SODIU METASILIC	60.00	3.20	0.00	2	-3.75	.	.	.
9	11540	JUN81	PRECIP BARIUM CARBONATE	9.90	11.45	5.46	1	-7.49	-7.06	.	.
10	12280	MAR82	12 VOLT BATTERIES	7.40	23.20	.	2	-10.95	.	-8.26	-3.38
11	12500	MAY82	FIREPLACE MESH PANELS	4.70	43.20	0.00	2	-12.51	.	-10.47	-0.70
12	12740	AUG82	STEEL WIRE NAILS	4.00	19.00	30.61	2	-7.49	-5.48	.	.
13	13380	FEB83	CARBON STEEL WIRE ROD	40.00	0.50	13.50	2	-0.60	-0.50	.	.
14	13430	FEB83	WIRE STR STL PRE CON	33.89	4.28	58.34	2	-11.19	-4.76	.	.
15	13913	JUN83	STAINLESS STL SHEET & STRP	7.29	3.50	11.70	2	-2.06	-1.86	.	.
16	13914	JUN83	STAINLESS STL SHEET & STRP	3.51	3.80	11.41	2	-1.28	-1.09	.	.
17	14032	JUL83	TOOL STEEL BAR & ROD	7.10	11.10	29.19	2	-7.49	-5.48	.	.
18	14170	AUG83	BICYCLES	0.36	16.14	9.07	2	-0.50	-0.50	.	.
19	14210	SEP83	POLYESTER/COTTON PRINTCL	22.40	10.09	7.70	1	-10.47	-9.75	.	.
20	14310	SEP83	SHOP TOWELS	38.30	24.09	3.30	1	-27.17	-26.31	-24.81	-13.87
21	14401	OCT83	PORTL HYDRAULIC CEMENT	136.19	1.80	4.58	2	-2.34	-2.25	.	.
22	14402	OCT83	PORTL HYDRAULIC CEMENT	37.24	1.35	5.03	2	-1.57	-1.57	.	.
23	14441	OCT83	CARBON STEEL WIRE ROD	63.51	2.90	18.97	2	-4.40	-3.57	.	.
24	14442	OCT83	CARBON STEEL WIRE ROD	9.79	1.50	20.41	2	-1.19	-0.99	.	.
25	14541	DEC83	STAPLES(CARTON CLOSING)	12.25	19.50	11.40	2	-15.18	-13.57	.	.
26	14542	DEC83	STAPLE MACHINES	122.79	21.70	5.82	2	-28.72	-27.11	.	.
27	14570	DEC83	LTWT POLYES FIL FABR	0.61	17.91	48.34	1	-1.57	-0.99	.	.
28	14630	DEC83	POTATOS-ROUND WHITE FALL	36.10	4.00	1.23	2	-14.09	-14.01	-7.15	-4.76
29	14990	MAR84	CARBON STEEL PLATE	84.06	3.00	24.76	2	-4.85	-3.66	.	.
30	15130	AUG84	ISOCYANURATES	32.20	21.70	.	2	-22.78	.	.	.
31	15142	APR84	COLOR TV RECEIVERS	5.56	2.10	11.70	1	-0.99	-0.89	.	.
32	15143	APR84	COLOR TV RECEIVERS	14.64	2.80	11.00	1	-2.53	-2.25	.	.
33	15191	APR84	SM-DIAMCIRC PIPES&TUBES	9.70	6.90	39.53	2	-6.89	-4.21	.	.
34	15192	APR84	SM-DIAM CIRC PIPES&TUBES	0.90	22.90	23.53	2	-2.06	-1.67	.	.
35	15193	APR84	HEAVY-WALL REC PIP&TUBES	1.47	1.00	42.01	2	-0.20	-0.10	.	.

TABLE 4.2

INJURY TO DOMESTIC INDUSTRY CAUSED BY UNFAIR IMPORTS:
ANTIDUMPING CASES--Continued

Row Number	Case	Date Report Issued	Product	Dumping Margin	Domestic Market Share: Unfair Imports	Domestic Market Share: Fair Imports	Import Data Type	Injury Estimates: Stage 1	Stage 2	Stage 3	Stage 4
				(Percent)	(Percent)	(Percent)		(Percent)	(Percent)	(Percent)	(Percent)
36	15194	APR84	LT-WALL RECT PIPES&TUBES	1.47	5.30	36.06	2	-1.09	-0.70	.	.
37	15250	MAY84	ALL ACRYLIC SHEET	4.56	7.80	8.40	2	-3.01	-2.72	.	.
38	15560	JUL84	STEEL VALVES	2.50	3.20	19.93	1	-0.89	-0.70	.	.
39	15680	AUG84	HOT-ROLL CARB STEE SHEET	6.45	2.30	16.34	2	-1.28	-1.09	.	.
40	15740	SEP84	CARBON STEEL WIRE ROD	36.80	0.43	26.14	1	-0.70	-0.50	.	.
41	15750	SEP84	FRESH CUT ROSES	2.86	16.00	4.44	2	-3.01	-3.01	.	.
42	15790	SEP84	COLD-ROLL CARB STL SHEET	0.91	2.24	12.99	2	-0.20	-0.20	.	.
43	15930	OCT84	STAINLESS STL SHEET&STRP	39.56	1.90	8.82	2	-2.34	-2.15	.	.
44	15981	NOV84	CARBON STEEL WIRE ROD	119.11	1.26	25.32	1	-2.06	-1.57	.	.
45	15982	NOV84	CARBON STEEL WIRE ROD	36.43	1.98	24.60	1	-2.91	-2.25	.	.
46	16001	NOV84	TITANIUM SPONGE	28.47	6.20	1.42	2	-6.63	-6.54	.	.
47	16002	NOV84	TITANIUM SPONGE	109.06	0.20	7.44	2	-0.30	-0.20	.	.
48	16370	JAN85	COLD-ROLL CARB STL SHEET	122.30	0.80	14.43	2	-1.19	-1.09	.	.
49	16491	FEB85	PRESSURE RESTRICT VALVES	1.28	64.90	.	2	-4.96	.	.	.
50	16493	FEB85	SIAMESE CONNECTIONS	1.28	69.70	.	2	-5.21	.	.	.
51	16494	FEB85	WEDG DISC HOSE GATE VAVL	1.28	38.20	.	2	-3.47	.	.	.
52	16495	FEB85	ANGLE-TYPE HOSE VALVES	1.28	57.60	.	2	-4.58	.	.	.
53	16496	FEB85	FIRE HOSE COUPLINGS	1.28	58.40	.	2	-4.67	.	.	.
54	16497	FEB85	FOG/STRAIGHT STRM NOZZLE	1.28	62.50	.	2	-4.85	.	.	.
55	16560	MAR85	POTASSIUM CHLORIDE	1.77	1.30	82.51	2	-1.19	-0.20	.	.
56	16941	AUG85	OIL COUNTRY TUBULAR GOOD	61.70	0.50	58.84	2	-1.57	-0.60	.	.
57	16942	AUG85	OIL COUNTRY TUBULAR GOOD	76.80	2.00	57.35	2	-5.75	-2.44	.	.
58	17070	JUN85	RED RASBERRIES	2.41	36.00	.	2	-2.82	.	.	.
59	17220	JUL85	TUBUL STL FRAM STAC CHAI	7.58	83.30	.	2	-28.67	.	-23.95	.
60	17594	SEP85	HOT-ROLL CARB STEE SHEET	2.20	0.60	20.11	2	-0.10	-0.10	.	.
61	17700	OCT85	BARBED WIRE	69.02	4.00	26.19	2	-6.54	-4.85	.	.
62	17840	DEC85	PHOTO ALBUMS	53.03	33.38	9.95	1	-41.55	-37.69	-26.58	.
63	17850	NOV85	CARBON STEEL STRUC SHAPE	13.70	1.00	37.06	2	-1.19	-0.79	.	.
64	17980	JAN86	ROCK SALT	6.35	18.99	4.94	2	-8.51	-8.17	.	.
65	17990	JAN86	LT-WALL RECT PIPES&TUBES	7.11	3.30	30.27	2	-2.44	-1.67	.	.
66	18050	JAN86	PAINT BRUSHES	127.07	22.80	17.62	2	-32.93	-27.33	-24.53	.
67	18080	FEB86	HEAVY-WALL REC PIP&TUBES	0.65	15.06	19.01	1	-0.99	-0.79	.	.
68	18102	FEB86	STANDARD PIPE	28.36	0.49	51.43	1	-1.09	-0.50	.	.
69	18111	FEB86	LIGH IRON CONSTR CASTING	10.20	12.00	20.98	2	-9.42	-7.58	.	.
70	18112	FEB86	HEAV IRON CONSTR CASTING	32.12	24.10	3.09	2	-25.87	-25.09	.	-15.90

TABLE 4.2

INJURY TO DOMESTIC INDUSTRY CAUSED BY UNFAIR IMPORTS:
ANTIDUMPING CASES--Continued

Row Number	Case	Date Report Issued	Product	Dumping Margin	Domestic Market Share: Unfair Imports	Domestic Market Share: Fair Imports	Import Data Type	Injury Estimates: Stage 1	Stage 2	Stage 3	Stage 4
				(Percent)				(Percent)			
71	18182	MAR86	ETHANOL	98.81	14.52	4.64	1	-18.37	-17.56	-6.01	.
72	18391	APR86	STANDARD PIPE	12.79	3.14	45.41	1	-4.31	-2.34	.	.
73	18392	APR86	LINE PIPE	22.95	1.73	36.16	1	-2.72	-1.67	.	.
74	18420	MAY86	STEEL WIRE NAILS	6.33	5.10	32.76	2	-3.47	-2.34	.	.
75	18450	MAY86	MALLE CAST-IRON PIPE FIT	28.46	15.10	17.03	2	-18.63	-15.61	-12.89	-5.84
76	18485	MAY86	OFFSHORE PLATFORM PILES	17.34	10.50	14.50	2	-10.47	-9.01	.	.
77	18486	MAY86	OFF SHORE PLATFORM PILES	8.92	14.50	10.50	2	-9.09	-8.26	.	.
78	18620	JUN86	DRAMS	20.75	21.11	.	2	-18.96	.	-13.57	.
79	18750	JUL86	PISTACHIO NUTS	241.14	42.30	1.37	2	-76.32	-76.25	-74.23	.
80	18850	AUG86	STANDARD PIPE	30.00	0.02	49.50	1	-0.05	-0.02	.	.
81	18880	AUG86	CANDLES	54.21	8.00	17.52	1	-11.43	-9.50	-7.41	.
82	19071	NOV86	STANDARD PIPE	12.66	3.07	44.64	1	-4.12	-2.34	.	.
83	19072	NOV86	LT-WALL RECT PIPES&TUBES	12.60	1.00	29.51	2	-1.09	-0.79	.	.
84	19189	DEC86	CARB STL BUT-WEL PIP FIT	56.99	50.00	15.00	1	-63.22	-54.95	-47.83	-28.42
85	19270	DEC86	EPROMS	93.90	26.70	.	2	-31.88	.	-22.78	.
86	19343	JAN87	AWNING OPERATORS	40.20	26.72	.	2	-29.23	.	-23.84	.
87	19344	JAN87	JALOUSIE OPERATORS	40.20	25.00	.	2	-27.43	.	-22.30	.
88	19362	JAN87	TOP-STOVE STAIN ST COOK	8.40	23.60	17.77	1	-14.38	-12.20	-9.09	-1.77
89	19389	JAN87	MIRRORS (UNFIN FLAT GLASS	58.50	11.50	3.00	2	-14.01	-13.57	-10.79	-7.75
90	19700	APR87	FROZ CONCEN ORANGE JUICE	1.96	36.00	3.35	1	-2.34	-2.34	.	.
91	19839	AUG87	TAPERED ROLLER BEARINGS	38.37	11.20	8.34	1	-13.64	-12.51	-12.36	-2.91
92	19920	JUL87	UREA	64.32	13.60	33.80	1	-24.13	-16.18	-14.82	.
93	19940	JUL87	LT-WALL RECT PIPES&TUBES	17.29	2.80	17.98	1	-3.01	-2.44	.	.
94	20012	AUG87	ASPIRIN	32.98	3.50	8.46	1	-4.21	-3.85	.	.
95	20049	AUG87	PIPE FIT MALLET HRD C IR	35.06	14.40	7.16	1	-16.87	-15.75	-12.97	-6.45
96	20331	NOV87	SEAML STNL STL PIPE & TU	20.47	12.30	41.25	1	-19.61	-11.97	-10.87	-5.21
97	20332	NOV87	WELD STAIN STL PIPE & TU	34.50	2.70	11.98	1	-3.47	-3.01	.	.
98	20460	DEC87	COLOR PICTURE TUBES	11.60	11.40	5.48	1	-8.26	-7.83	.	.
99	20670	MAR88	STAINL STL BUT-WEL PIP F	49.31	46.90	.	1	-54.23	.	-44.01	-25.15
100	20800	MAY88	BIMETALLIC CYLINDERS	17.42	12.10	.	1	-10.39	.	-10.31	-5.21
101	20820	MAY88	FORKLIFT TRUCKS	39.50	46.30	.	1	-48.00	.	-41.52	-12.66
102	20900	JUN88	NITRILE RUBBER	146.50	4.00	17.90	1	-6.01	-4.94	.	.
103	20990	JUL88	BRASS SHEET & STRIP	33.23	6.20	11.15	2	-7.66	-6.80	.	.
104	21031	AUG88	ELEC CONDUC ALUM RE ROD	5.80	11.00	5.40	1	-4.94	-4.85	.	.
105	21120	AUG88	TEFLON	91.74	25.60	.	1	-30.60	.	-27.85	-18.23

Notes: Import Data Type = 1 for value.
Import Data Type = 2 for volume.
A "." indicates not available.

Source: Bureau of Economics, FTC.

TABLE 4.3

INJURY TO DOMESTIC INDUSTRY CAUSED BY UNFAIR IMPORTS:
JOINT CASES (CASES INVOLVING BOTH SUBSIDY AND DUMPING)

Row Number	Case	Date Report Issued	Product	Margin		Domestic Market Share		Import Data Type	Injury Estimates			
				Subsidy	Dumping	Unfair Imports	Fair Imports		Stage 1	Stage 2	Stage 3	Stage 4
				(Percent)					(Percent)			
1	18650	JUN86	OIL COUNTRY TUBULAR GOOD	2.30	18.51	6.0	45.28	2	-10.31	-5.75	.	.
2	19309	DEC86	BRASS SHEET & STRIP	1.33	15.44	18.7	7.65	2	-17.08	-15.90	-11.50	-3.20
3	19520	FEB87	OIL COUNTRY TUBULAR GOOD	2.30	18.51	6.0	45.11	2	-10.23	-5.75	.	.
4	19561	MAR87	STANDARD CARNATIONS	0.13	4.22	54.6	0.50	1	-5.12	-5.03	.	.
5	19562	MAR87	MINIATURE CARNATIONS	3.57	2.60	44.6	0.80	1	-7.06	-7.06	.	.
6	19563	MAR87	STANDARD CHRYSANTHEMUMS	1.05	2.65	26.2	0.77	1	-4.12	-4.12	.	.
7	19564	MAR87	POMPOM CHRYSANTHEMUMS	0.11	3.59	52.5	0.39	1	-4.31	-4.31	.	.
8	19565	MAR87	ALSTROEMERIA	0.99	2.53	48.8	2.45	2	-4.12	-4.12	.	.
9	19566	MAR87	GERBERAS	3.57	0.71	60.4	2.33	2	-5.03	-5.03	.	.
10	19567	MAR87	GYPSOPHILA	7.23	1.88	46.4	3.15	2	-10.15	-10.15	-3.75	.
11	20000	AUG87	INDUST PHOSPHORIC ACID	3.80	12.38	2.4	0.41	1	-2.06	-2.06	.	.
12	21100	AUG88	GRANITE	0.09	4.59	38.6	22.31	1	-13.79	-11.43	-9.75	-5.75

Notes: Import Data Type = 1 for value.
Import Data Type = 2 for volume.
A "." indicates not available.

Source: Bureau of Economics, FTC.

Two of the three subsidy cases where injury exceeds 10 percent involve agricultural products. The injury estimate for canned hams (case no. 10820) is -27.54 percent while for feta cheese (case no. 10792) it is -10.47 percent. In both these cases, since domestic supply is relatively insensitive to price, domestic industry revenue loss is closely approximated by the maximum extent of price depression caused by the unfair price advantage. The subsidy rates are 33.74 percent for canned hams and 12.50 percent for feta cheese. Assuming that the unfair price of imports is $100, and also assuming full pass through of the subsidy margin, then the fair price of imports would be $133.74 for canned hams and $112.50 for feta cheese. Therefore, the maximum price suppression is 25.22 percent (=33.74/133.74) for canned hams and 11.11 (=12.50/112.50) percent for feta cheese.

Antidumping Cases. Table 4.2 shows that antidumping cases, like subsidy cases, typically involve "small" injury to domestic industry. For two-thirds of the antidumping cases, 70 of 105 cases, injury is less than 10 percent. Moreover, for nearly half of the antidumping cases, 53 of 105 cases, injury is less than 5 percent. However, antidumping cases appear to involve larger injury than subsidy cases.

Possibly the most significant difference between antidumping and subsidy cases is the size of the margin calculated by Commerce. Table 4.1 shows that only 9 of 57 (16 percent) subsidy cases have a subsidy margin of 25 percent or more.[83] Table 4.2 shows that 47 of 105 (45 percent) antidumping cases have a dumping margin of 25 percent or more.[84] Moreover, while the largest subsidy rate is 77 percent, there are eight antidumping cases where the dumping margin exceeds 100 percent, and one case where it exceeds 200 percent.[85] This difference between subsidy and antidumping cases was discussed in Chapter 2, and has also been emphasized by others.[86] For present purposes we observe that this difference is a

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[83] Also see Table 2.5 in Chapter 2.

[84] Also see Table 2.6 in Chapter 2.

[85] Recall from chapter 2 that the dumping margin is calculated based on the difference between fair price and price charged to the United States. Thus, for example, if the fair price is three times the U.S. price, then the dumping margin would be 200 percent.

[86] For example, Horlick (1989) states that "...antidumping duties as a rule have been higher than countervailing duties, for the curious reason that U.S. countervailing duty law is more closely tied to market place criteria than the antidumping duty law. Therefore, countervailing duties approximately measure the value of subsidies given, while the antidumping law is based on less economically sound foundations which can yield high margins of dumping unconnected to economic reality." (p. 102).

However, this is misleading. Even if a countervailing duty measures the value of subsidies given, the duty does not generally indicate the magnitude of the effect of the subsidy on price charged to U.S. importers. The most familiar example compares an export subsidy and a domestic subsidy when foreign industry is perfectly competitive. For the same ad valorem subsidy rate, an export subsidy has a greater effect on the price charged foreign buyers than does a domestic subsidy. This is because an export subsidy discriminates between domestic and foreign markets and creates a wedge between export price and domestic price equal to the subsidy. However, a domestic subsidy does not have as great an effect on export price

(continued...)

major reason why dumping appears to be more injurious to domestic industry than subsidies.

Even when the dumping margin is very high there need not be a significant adverse effect on domestic producers. Indeed, in four of the eight antidumping cases where the dumping margin exceeds 100 percent, Table 4.2 shows that injury is less than 5 percent. The four cases are: cement (case no. 14401), wire rod (case no. 15981), titanium sponge (case no. 16002), and cold-rolled sheet (case no. 16370). These four cases involve manufacturing industries, where domestic supply is generally highly elastic, and all four have a small market penetration of unfair imports, less than 2 percent. Therefore, the maximum loss of business by domestic producers to unfair imports could not give a revenue loss of even 5 percent.

Indeed, very large dumping margins (e.g., 100 percent plus) are deceptive. They give the misleading impression that the price of dumped import will double, or more than double, when the dumping order is issued. It is more likely that such an order will price unfair imports out of the market completely. If this happens there is "water in the tariff," i.e., the duty is higher than necessary to choke off imports from the market.[87]

On the other hand, we can also identify several cases where dumping might cause severe harm. In particular, there are 16 antidumping cases where industry revenue loss could be 20 percent or more. The list of these cases and their stage I injury estimates are shown below in Table 4.4. The table also gives dumping margins.

The list covers a variety of products cutting across a broad spectrum of industries. No single industry or group of related industries dominates the list; if there is severe harm from dumped imports it appears to be diffused across many import competing industries. What these 16 antidumping cases have in common is a large unfair import penetration (13 percent or more) and at least a moderate dumping margin (7 percent or more). Indeed, eight of the 16 cases have very high dumping margins, 50 percent or more.

Joint Antidumping-Subsidy Cases. Table 4.3 shows that for the majority of joint cases, 7 of 12 cases, injury was less than 10 percent and for one-third of the cases injury was less than 5 percent. There are five cases where injury potentially

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[86](...continued)
because it does not so discriminate as it affects both prices equally. For a discussion of this issue, see for example, Krauss (1978), p. 73 and Francois, Palmeter, and Anspacher (1991), pp. 100-108.

[87] For cases that have water in the tariff it was necessary to modify our model. This issue is discussed in Appendix B. Only three cases were involved, all of which have high dumping margins. This refers to case nos. 19270, 20670, and 21120.

TABLE 4.4

ANTIDUMPING CASES THAT POTENTIALLY HAVE SEVERE HARM

Product and Case Number	Injury Estimate Stage I (percent)	Dumping Margin (percent)
Shop towels (case no. 14310)	-27.17	38.30
*Staple machines (case no. 14542)	-28.72	122.79
*Isocyanurates (case no. 15130)	-22.78	32.20
*Stacking chairs (case no. 17220)	-28.67	7.58
*Photo albums (case no. 17840)	-41.55	53.03
*Paint brushes (case no. 18050)	-32.93	127.07
Heavy iron castings (case no. 18112)	-25.87	32.12
*Pistachio nuts (case no. 18750)	-76.32	241.14
Butt-weld pipe fittings (case no. 19189)	-63.22	56.99
*EPROMS (case no. 19270)	-31.88	93.90
*Awning operators (case no. 19343)	-29.23	40.20
*Jalousie operators (case no. 19344)	-27.43	40.20
*Urea (case no. 19920)	-24.13	64.32
Stainless pipe fittings (case no. 20670)	-54.23	49.31
Forklift trucks (case no. 20820)	-48.00	39.50
Teflon (case no. 21120)	-30.60	91.74

Note: * indicates no Stage IV injury estimate is available.

Source: Table 4.2.

might be large: two oil country goods cases (case nos. 18650 and 19520), brass sheet (case no. 19309), gypsophila (case no. 19567), and granite (case no. 21100).

Note that each joint case has both a subsidy margin and a dumping margin. Both margins are weighted averages over imports from cumulated countries under investigation in the case. To calculate injury for these cases we use the sum of the two margins. This assumes that both margins are fully passed through to the price charged to U.S. purchasers. As discussed above, this assumption generally exaggerates the difference between fair and unfair prices, and accordingly, implies that our estimate of injury from unfair imports is overstated.

The 12 joint cases are dominated by an unusually broad investigation involving flowers. The ITC divided this broad investigation into seven distinct cases, one for each of the seven different types of flowers under investigation. Yet, because the unfair price advantages from dumping and subsidy were relatively low, only one of the seven flowers cases had injury that reached 10 percent (gypsophila).

VI. Results for Stage II

In stage II we allow the quantity of fair imports to respond to unfair imports. This modification allows fair imports to absorb part of the impact of unfair imports and thus reduces the impact of the unfair imports on the U.S. industry. Injury estimates are made for most cases. The exceptions, indicated by a blank entry under the column for stage II in Tables 4.1, 4.2, and 4.3, are cases that did not have fair imports so an estimate was not calculated.

Our principal finding is that domestic industry injury estimates are highly sensitive to the responsiveness of fair imports when fair imports are large. In particular, the assumption that foreign suppliers of fair imports do not adjust their exports can lead to a severe overstatement, possibly by a factor of two, in the estimate of domestic industry injury.

Subsidy Cases. Notable differences between the stage I and stage II estimates arise in six cases. As shown in Table 4.1, in one case injury declines from over 10 percent to under 10 percent and in five cases injury declines from over 5 percent (but under 10 percent) to under 5 percent. Therefore, for all 57 subsidy cases and after adjusting (where appropriate) for fair imports in stage II, estimated injury is less than 10 percent in 55 of 57 cases, and injury is less than 5 percent in 46 of 57 cases.

In feta cheese (case no. 10792), estimated injury declines from -10.47 percent to -8.09 percent. Feta cheese is a processed agricultural product and the supply of fair imports is assumed to be relatively inelastic. However, the market share of fair imports is 50.05 percent. When the market share of fair imports is this large, even

a small percentage change in the quantity of fair imports gives an absolute change in quantity that is large compared to the quantities of domestic shipments and unfair imports. This diminishes the burden of unfair imports on domestic producers and reduces estimated injury.

In leather wearing apparel (case no. 11440), stainless wire rod (case no. 13333), prestressed concrete (case no. 13580), carbon steel plate (case no. 15381), and oil country goods (case no. 16332), estimated injury declines from over 5 percent to under 5 percent. In all five cases fair imports are relatively large, between 20 percent and 66 percent of the domestic market. All of these products are manufactured products and the supply of fair imports is assumed to be highly elastic. Thus, for a given percent reduction in market price caused by subsidized imports there will be a large contraction in fair imports, all of which will be taken over by suppliers of unfair imports. This reduces the impact of unfair imports on the domestic industry.

In general, the differences between the stage I and stage II estimates depend on the magnitude of the stage I estimate and the market share of fair imports. For example, when the stage I injury estimate is very small and fair imports are also small, e.g., nonrubber footwear (case no. 10450) and whole groundfish (case no. 10661), there will be little or no difference between the injury estimates for the two stages.

Antidumping Cases. As shown in Table 4.2, notable differences between the stage I and stage II estimates arise in ten cases. In five cases estimated injury declines from over 10 percent to under 10 percent, and in two of these five, injury declines to under 5 percent. These two cases, steel nails (case no. 10880) and prestressed concrete (case no. 13430), have very large market shares for fair imports, 57 percent and 58 percent respectively. In the other five cases,[88] injury declines from over 5 percent (but less than 10 percent) to under 5 percent. Therefore, for all 105 antidumping cases and after adjusting for fair imports (where appropriate) in stage II, injury is less than 10 percent in 75 of 105 cases. Injury is less than 5 percent in 60 of 105 cases.

Interestingly, all but one of the 16 antidumping cases identified in stage I as having possible injury in excess of 20 percent continue to have injury estimates in excess of 20 percent in stage II. The exception is Urea (case no. 19920) where the stage II injury estimate is 16.18 percent. However, eight of the 16 cases have zero

[88] This refers to case nos. 10462, 15191, 16942, 17700, and 20900.

fair imports.[89] As for the rest, the share of fair imports is usually less than 10 percent (five of eight cases).[90]

Joint Antidumping-Subsidy Cases. Except for two cases (cases nos. 18650 and 19520), adjusting for fair imports makes little difference in the joint cases. As shown in Table 4.3, the two exceptions involve oil country tubular goods and they are the only joint cases where fair imports are very large -- in excess of 45 percent of total domestic consumption. For each of these cases estimated injury declines from slightly over 10 percent in stage I to under 6 percent in stage II.

VII. Results for Stage III

The injury estimates calculated for stage III allow the market size to vary by using a more appropriate value for the elasticity of aggregate demand.[91] Replacing the assumption that this elasticity is -0.01 (used in stages I and II) with a higher and more realistic value recognizes that the unfair practice will attract new consumers to the market. Thus unfair imports will not take away as many customers from domestic producers and their injury will be smaller. As explained earlier (in section III), stage III estimates are generally provided only for cases that have "large" injury estimates in stage II.

Subsidy Cases. Stage III estimates were calculated for only two countervailing duty cases and the effects are considerably different. In canned hams (case no. 10820), estimated injury falls sharply from stage II to stage III, from -25.21 percent to -14.09 percent. By contrast, in aluminum rod (case no. 21032), injury falls only marginally from -12.89 to -12.66. In the first case the aggregate demand elasticity is -0.73 while in the second case demand is much less elastic, only -0.1.[92] The difference in demand elasticities is, however, only part of the reason behind the difference between the stage II and stage III estimates for these two cases. In canned hams, domestic supply is highly inelastic,[93] while in aluminum

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[89] This refers to case nos. 15130, 17220, 19270, 19343, 19344, 20670, 20820, and 21120.

[90] This refers to case nos. 14310, 14542, 17840, 18112, and 18750.

[91] The values used for the aggregate demand elasticity are given in Table 4A.1 the appendix to this chapter. Note that where a range of values is shown, we use the smaller value. Using the larger value would give smaller injury estimates.

[92] See Appendix D to this chapter for a discussion of the sources for the aggregate demand elasticities used in this report.

[93] Note that this elasticity is based on the domestic supply elasticity of livestock, which has been estimated to be 0.40. See Appendix D.

rod domestic supply is highly elastic.[94] Generally, price and total revenue are more sensitive in markets where both demand and supply are highly inelastic. This suggests that use of the appropriate value for aggregate demand elasticity is particularly important for cases involving agricultural or natural resource products.

Antidumping Cases. Stage III estimates were calculated for 28 antidumping cases with the result that, with two exceptions, the decline in estimated injury is modest. In acrylic yarn (case no. 10461) estimated injury falls from -11.19 percent to -9.58 percent from stage II to stage III. In stainless steel cookware (case no. 19362), the corresponding decline in injury is from -12.20 to -9.09. These two cases, plus two exceptions discussed below, comprise the four cases where estimated injury falls below 10 percent in stage III.

The two exceptions are ethanol (case no. 18182) and potatoes (case no. 14630). Ethanol has a very high demand elasticity: -4.74. The price depression caused by dumped imports thus causes a considerable expansion in aggregate consumption, which in effect absorbs a major part of the increase in dumped imports, and therefore moderates the adverse impact on domestic producers. Estimated injury to domestic ethanol producers falls from -17.56 percent to -6.01 percent.

The points made earlier in the discussion of the countervailing duty case for canned hams also apply to potatoes. Using the appropriate aggregate demand elasticity for potatoes, -0.37, causes estimated injury to fall from -14.01 percent to -7.15 percent.

Joint Antidumping-Subsidy Cases. Stage III estimates are calculated for three joint cases. In brass sheet (case no. 19309), estimated injury declines from -15.90 percent in stage II to -11.50 percent in stage III because aggregate demand is elastic, -1.7, although less so than for ethanol. In gypsophila (case no. 19567), estimated injury declines from -10.15 percent to -3.75 percent. In this case aggregate demand is very elastic, -3.85. Finally, in granite (case no. 21100) estimated injury declines modestly, from -11.43 percent to -9.75 percent. The aggregate demand elasticity is -1.0.[95]

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[94] Note that although production of aluminum rod uses bauxite (a natural resource product) there are also several other aluminum products (e.g., foil) that also require bauxite. Indeed, in 1987 domestic production of aluminum rod was only 4.8 percent of total output of the domestic aluminum industry. (Aluminum Statistical Review, 1990, p. 5) As a consequence the supply elasticity of the raw material to rod producers is expected to be relatively high.

[95] Note that we use a domestic supply elasticity of 10 in this case. This is based on: (1) the assessment of ITC staff that with respect to finished granite, domestic supply is relatively responsive to price and (2) the fact that most of the equipment used to produce the product under investigation could be used to produce other granite products that were not under investigation. (No estimate of the supply elasticity was made by ITC staff.) ITC Memorandum EC-L-263, August 3, 1988, p. 4.

VIII. Results for Stage IV

As discussed in Chapter 3, the extent of the contraction in demand for the domestic product caused by unfair imports is highly sensitive to the degree of substitution (or elasticity of substitution in demand) between imported and domestic products. In stages I through III, we assumed that imported and domestic products were very close substitutes. Specifically, we assumed that a one percent decrease in the price ratio of unfair imports to domestic product would cause a nine percent increase in the ratio of quantities demanded (of unfair imports to domestic product).[96] That is, the degree of substitution was assumed to be 9. The injury estimates calculated for stage IV replace this value with more appropriate values for the degree of substitution between imported and domestic products.[97] We are particularly interested in examining those cases where injury is estimated to be "large" in stage III.[98]

Subsidy Cases. The same two cases examined in stage III are also examined here. Table 4.1 shows that for canned hams and aluminum rods, the stage IV injury estimates are approximately one-third smaller than the stage III estimates. In canned hams, injury declines from -14.09 percent to -10.95 percent. In aluminum rods, injury declines from -12.66 percent to -8.42 percent. In canned hams the degree of substitution is 5 and in aluminum rods it is 3.

With this third and final adjustment to our injury calculations for subsidy cases we are left with only one case where injury is "large." Considering the estimates across all stages, only in canned hams does injury exceed 10 percent.

Antidumping Cases. There are 13 antidumping cases that have large estimated injury up through stage III and that can be examined in stage IV.[99]

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[96] See Appendix B and Tarr (1989), p. 5-2.

[97] The values used for the elasticity of substitution are given in Table 4A.1 in the appendix to this chapter. Note that where a range of values is shown, we use the larger value. Using the smaller value would give smaller injury estimates.

[98] However, we also provide stage IV injury estimates for four cases where the stage III injury estimate is less than 10 percent. For these four cases we were able to obtain information about the elasticity of substitution. The four cases are spun acrylic yarn (case no. 10461), 12 volt batteries (case no. 12280), potatoes (case no. 14630), and stainless steel cookware (case no. 19362).

[99] The 13 cases are: (1) *fireplace mesh panels (case no. 12500), (2) shop towels (case no. 14310), (3) heavy iron construction castings (case no. 18112), (4) *malleable cast iron pipe fittings (case no. 18450), (5) butt-weld pipe fittings (case no. 19189), (6) *mirrors (case no. 19389), (7) *tapered roller bearings (case no. 19839), (8) *malleable threaded cast iron pipe fittings (case no. 20049), (9) *seamless stainless steel pipe (case no. 20331), (10) stainless steel butt-weld pipe fittings (case no. 20670), (11) *bimetallic cylinders (case no. 20800), (12) forklift trucks (case no. 20820), and (13) teflon (case no. 21120).

Note that these 13 cases are not a subset of the 16 cases listed in Table 4.4. The former have estimated injury greater than 10 percent through stage III while the latter have estimated injury in excess of 20 percent in stage I.

(continued...)

Table 4.2 shows that for seven of the thirteen, the stage IV injury estimate is no longer large. (The seven are marked with an asterisk in the preceding note.) Of the seven cases, estimated injury declines the most in fireplace mesh panels, from -10.47 percent to -0.70 percent, and in tapered roller bearings, from -12.36 percent to -2.91 percent. For both cases the appropriate degree of substitution is small. For fireplace mesh panels it is 1.54; for tapered roller bearings it is 0.83.

In section V we identified 16 antidumping cases where domestic industries might have suffered severe harm from dumped imports. The cases were listed in Table 4.4. We now know that, in general, the overstatement in the stage I injury estimates is not trivial. What has happened to the 16 antidumping cases in Table 4.4? Unfortunately, we are not able to calculate stage IV injury estimates for ten of the 16 cases because information is lacking about the degree of substitution between unfair imports and the domestic product. (The ten are marked by an asterisk in Table 4.4.) For the other six cases, the stage IV estimates suggest that injury for two of them may exceed 20 percent. This refers to two pipe fittings cases, butt-weld (-28.42 percent) and stainless (-25.15 percent). For the remaining four cases, injury may be large, but not larger than -20 percent.

IX. Adjustment for Pass Through

As explained in chapter 3, when dumping involves international price discrimination and the dumping margin (M) is calculated based on the prices charged by foreign firms on sales to their home market and to the U.S. market, then the elimination of dumping will not cause the price to the U.S. market (fair price) to equal the initial unfair price times (1+M). If foreign firms are constrained to eliminate price discrimination, they will optimally adjust prices charged in both their home and in U.S. markets. In general, foreign firms will increase the price they charge on exports to the U.S. market and also lower the price they charge in their home market. Thus, the increase in price charged in the U.S. market will be less than the dumping margin, i.e., there will be a partial pass through of the dumping margin. Accordingly, to measure correctly the effect of dumping in such instances it is necessary to determine the full response by foreign firms, that is, we need to estimate how they would revise both prices.

To determine the full response it is necessary to have data for home market sales. We were able to obtain such data for five cases that had "large" estimated injury up to stage II. These data are given in Appendix D, in Table 4A.2. One of

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[99](...continued)
Due to lack of information about the degree of substitution, 12 other cases that could result in "large" injury in stage IV could not be examined.

these five cases is noteworthy, stainless pipe fittings (case no. 20670).[100] This case has estimated injury of -25.15 percent in stage IV and the pass-through issue is expected to be significant because shipments to the home market were 9.44 million pounds while exports to the United States were 3.99 million pounds. Given that shipments to the home market were more than double exports to the United States, we expect that if foreign firms were constrained to charge the same price in both markets, they will find it advantageous to make a relatively greater revision to the price charged to U.S. customers than to the price charged their home market customers. Applying the home market and export data to our model, we find that absent dumping the export price charged to U.S. customers would increase by 32 percent while the price charged to home market customers would decrease by 11 percent. As expected, the increase in the price to the United States is smaller than under full pass-through, which equals the dumping margin, 49 percent. Thus, since the price effect of dumping is smaller under partial pass-through, estimated injury is also smaller: the stage IV estimate is -25.16 percent but under partial pass-through (all other parameters the same) the injury estimate falls to -12.89 percent.

X. Approximating a World Market

Some of the cases in our sample involve highly standardized products that are widely traded internationally. Examples include aspirin, frozen orange juice concentrate, sugar, and urea.[101] As explained in Chapter 3, in such instances it is possible that dumped or subsidized imports do not injure the domestic industry at all. This occurs when U.S. buyers have a variety of alternative foreign suppliers of the same product and the buyers also pay a price that is determined on the world market. Under these conditions, additional imports from one or more countries engaging in unfair practices merely displace other, fairly traded, imports from the U.S. market.

These conditions are particularly relevant to the case of urea (case no. 19920). As reported by the ITC, urea industry experts expected that domestic prices would not be significantly higher if antidumping duties were imposed because fair imports from other countries would make up for reduced imports from unfair suppliers.[102]

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[100] The other four cases either have "small" injury after stage IV (case nos. 10461, 20049) or else exports to the U.S. are relatively small compared to shipments to the home market (case nos. 14541, 14542).

[101] Note that most of these products are traded in bulk and are subsequently processed and/or packaged for use by consumers or firms.

[102] See U.S. International Trade Commission (1987), Urea from the German Democratic Republic, Romania, and the Union of Soviet Socialist Republics, USITC Pub. No. 1992, p. A-50, note 2.

The actual injury from dumped imports in this case is very likely close to zero, and we therefore do not regard injury in urea as being large.

XI. Sensitivity of Injury Estimates to Margins

Since dumping and subsidy margins are expected to be biased upward, we conduct a sensitivity analysis to reveal how the injury estimates are affected if the true margin is smaller than the reported margin. We restrict this analysis to the 18 cases for which estimated injury exceeds 10 percent after all of the adjustments discussed to this point.

The results are shown in Table 4.5. In addition to giving the case number and product, the table indicates the stage that gives the lowest upper bound injury estimate and, for convenience, the dumping/subsidy margin and the share of unfair imports. Four injury estimates are provided. The first is based on the reported margin and is the lowest upper bound. The next three estimates are for 90 percent, 75 percent, and 50 percent of the reported margin respectively.

The results suggest that the cases can be divided into three groups. In the first group are seven cases (marked by "*" in the table) where injury estimates are relatively sensitive to the dumping/subsidy margin. For example, for shop towels (case no. 14310), estimated injury is -13.87 percent based on the full reported margin but is only -8.43 percent when 50 percent of the reported margin is used. The distinguishing feature about these seven cases is that all have upper bound estimates from stage IV.[103] They therefore all use appropriate parameter values for the two key demand elasticities in our model (i.e., the aggregate demand elasticity and the substitution elasticity), which suggests that these seven cases, compared to the other cases in the table, more accurately reveal the true sensitivity of estimated injury to the dumping/subsidy margin.

The second group has three cases (marked by "**" in the table) where estimated injury is virtually insensitive to the dumping/subsidy margin. For example, for staple machines (case no. 14542), estimated injury based on the full reported margin is -27.11 percent and it is -26.47 when 50 percent of the margin is used. The lowest upper bound injury estimate for all three cases is either from stage II or from stage III, which indicates that information about one or both demand parameters was not available. Based on the discussion of the first group of cases,

[103] However, the injury estimate for case no. 20670 is based on partial pass through of the dumping margin, as discussed in section VIII above.

it is likely that had this information been available estimated injury would have been more sensitive to the dumping/subsidy margin.[104]

Finally, the results for the other nine cases are more diverse. However, estimated injury is found to be moderately sensitive to the margin, even for lower upper bound injury estimates from stages II or III. This is particularly true when the reported dumping margin is relatively small. The notable example is tubular steel chairs (case no. 17220), where the reported dumping margin is only 7.6 percent. In this case estimated injury (based on stage III data) is -23.95 percent using the full reported margin but only -13.19 percent when 50 percent of the full margin is used.

XII. Conclusion

This chapter provides estimates for the magnitude of injury suffered by domestic industry from unfair imports in 174 antidumping and countervailing duty cases decided between 1980 and 1988. The principal conclusion is that for the vast majority of cases, about 90 percent, the injury to domestic industry caused by unfair imports is less than 10 percent of industry revenue. After examining the injury estimates across all four stages, at most 18 of these cases involved "large" injury to domestic producers (i.e., domestic industry revenues declined by more than 10 percent). Furthermore, all but one of the 18 cases where estimated injury is "large" are antidumping cases. Our injury estimates rely on the dumping margins calculated by the Department of Commerce and, as discussed in chapter 2, dumping margins tend to be biased upward. Thus, our injury estimates for dumping cases are biased upward. Finally, the maximum injury in the single subsidy case that resulted in "large" injury is 10.95 percent.

[104] However, it should also be noted that for all three cases the share of unfair imports is relatively high (over 20 percent) and the reported dumping margin is also very high (over 90 percent).

suffered. Indeed, the main purpose of this report is to quantify the injury caused by unfair imports. Moreover, this report examines only those instances of dumped or subsidized imports that have resulted in ITC cases. Furthermore, since this report examines only dumped and subsidized imports it is not appropriate to use our results to draw inferences about the magnitude of the effects of other types of unfair practices on domestic industry. Under U.S. law, there are many foreign policies or practices that may be unfair and cause injury to domestic industries. In addition to dumped and subsidized imports, these include foreign government barriers against U.S. exports and infringement by foreign firms of U.S. intellectual property rights.

Similarly, there are two reasons why our results must not be interpreted to imply that unfair imports never, or almost never, cause significant injury. First, even after making allowance for data deficiencies, we find that several cases in our group of 179 cases involve severe injury from unfair imports. Second, a total of 221 unfair import cases were decided between 1980 and 1988 and this report is only able to assess the magnitude of injury for 179 of them.

Why are our results so at variance with popular perceptions? First of all, these perceptions often are not based upon systematic evidence. Second, our methodology is designed to isolate the effects of unfairly traded imports from the effects of other influences on the domestic industry. Firms that compete with unfairly traded imports may be experiencing difficulties independent of import competition. We would expect that firms in industries experiencing difficulty are more likely to petition for relief. Casual observers might incorrectly infer causality from the coincidence of declining sales, profits, or employment with unfairly traded imports.

Our principal result is that injury from unfair imports is typically less than 10 percent of domestic industry revenue, and this raises some questions. In particular, why do so many domestic producers incur the expense of initiating antidumping or countervailing actions if injury is of this magnitude? The cost to the petitioners varies with the size and complexity of the case; a recent GAO report puts the cost at between $150,000 and $550,000 for an antidumping case, and slightly less for a countervailing duty case.[106] Particularly for cases involving small domestic industries, the filing of antidumping or countervailing duty petitions does not appear to be cost justified.[107]

Although search for the definitive answer to this question goes beyond the scope of the present study, we conclude by offering some suggestions. First, even

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[106] General Accounting Office (1988), Pursuit of the Trade Law Remedies by Small Business, U.S. General Accounting Office, Washington, D.C., pp. 7-9.

[107] There are cases where the value of domestic industry shipments is very small. For example, in case nos. 17840 (photo albums) and 18392 (line pipe), annual domestic industry sales were $77,000 and $220,000, respectively. Unfortunately, data for domestic sales are not available for many cases involving small industries.

though the decline in domestic industry revenue caused by unfair imports is below 10 percent some firms are likely to be forced out of the business. For example, if there were twenty identical domestic producers and industry revenue fell by 10 percent, then ultimately two firms will be forced to retire. For the firms crowded out by unfair imports, securing relief from these imports is a life and death matter. However, the identity of the domestic firm or firms that will be hardest hit by unfair imports may not be known at the outset. Thus, there may be a free rider problem to overcome owing to the "public good" aspect of relief from unfair imports when antidumping or countervailing duties are imposed.

Second, for cases involving very small domestic industries the costs in bringing antidumping/countervailing duty cases are borne, in part, by the Government. In the early 1980s, and particularly since 1984, there was a deliberate effort by the Department of Commerce and the ITC to help small firms. Before 1984, Commerce staff gave special attention to small firms in the preparation of unfair import petitions, and in the Trade Act of 1984 Congress created a new division at the ITC, the Trade Remedy Assistance Office, to provide information and assistance to small firms.[108] Thus, the cost of unfair import cases to small firms may be considerably less than the lower bound of $150,000 reported by GAO.

Third, one implication of our finding that unfair imports do not usually cause severe harm is that generally the odds are stacked against petitioners securing significant relief from unfair imports. However, when there are only a limited number of firms in the domestic industry, there is a chance that they will secure the big prize (i.e., the big antidumping or countervailing duty) and this may be sufficient to drive the action. There are a few cases where Commerce finds very high margins. In the extreme case, pistachio nuts, the calculated dumping margin was 241 percent.[109] In our sample period (1980 to 1988) there were also seven other cases where the calculated dumping margin exceeded 100 percent.[110] Thus there is some prospect that a domestic petitioner will obtain significant protection from imports.

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[108] See, for example, the discussion in Baldwin and Moore (1991), p. 264.

[109] The very high dumping was due to the fact that the Commerce Department used the official exchange rate for the Iranian rial (90 rials/USD) and not the commercial rate (600 rials/USD). According the Department of Commerce, under the statute governing DOC calculations, DOC is required to use the exchange rate furnished by the Federal Reserve Bank of New York, which supplied the official rate. See U.S. International Trade Commission (1986), In-Shell Pistachio Nuts from Iran, USITC Pub. No. 1875, p. 12 note 31 (note by Vice Chairman Brunsdale and Commissioner Stern), and p. A-66 (DOC Final Determination)..

[110] The seven other dumping cases where the weighted average dumping margin exceeded 100 percent are: portland cement, 136 percent margin (case no. 14401); staple machines, 123 percent margin (case no. 14542); wire rods, 119 percent margin (case no. 15981); titanium sponge, 109 percent margin (case no. 16002); cold-rolled steel sheet, 122 percent margin (case no. 16370); paint brushes, 127 percent margin (case no. 18050); nitrile rubber, 146 percent margin (case no. 20900).

Fourth, it is possible that unfair imports threaten domestic industries with severe harm and that the filing of a petition arrested a surge in unfair imports that would have caused severe injury. However, based on final ITC votes, "threat" cases are relatively rare. The ITC found threat of injury in only 11 of 221 cases between 1980 and 1988.

Fifth, the possible gain to the firms filing an antidumping or countervailing duty petition may bear little relationship to our estimate of injury because the filing of a petition immerses foreign rivals in proceedings with U.S. authorities that may carry on for months, if not years. During this process, foreign rivals may curb the challenge they pose to domestic producers. That is, domestic firms may use antidumping or countervailing duty cases to harass foreign rivals and lessen competition in the market.[111]

Sixth, and an extension of the fifth point, the filing of antidumping or countervailing duty petitions may serve as a vehicle to facilitate or strengthen noncompetitive behavior in the domestic market.[112] Although we do not have information about this issue for the U.S., recent evidence suggests that antidumping actions were used to facilitate collusion in the EC.[113]

Finally, there is another way in which domestic producers may benefit from a lessening of competition in the U.S. market. Domestic firms may initiate antidumping or countervailing duty cases in order to secure a medium to long-term government sanctioned arrangement to restrict competition from imports. However, the probability of this outcome is small, particularly for small industries. The known examples of such arrangements all involve relatively large industries, e.g., potash, semiconductors, softwood lumber, and carbon steel.

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[111] The possible harassment effect of antidumping and countervailing duty cases has been suggested earlier, for example by Bhagwati (1988), p. 48, and by Francois, Palmeter and Anspacher (1991), p. 129.

[112] See the interesting discussion on this point by Stegemann (1991), p. 389, who comments on the "pervasive conflicts between anti-dumping policies and domestic competition policy."

[113] See Messerlin (1990).

APPENDIX A

CONSTRUCTION OF DATA SET USED IN CALCULATING INJURY

This appendix discusses basic sources of the information on final ITC antidumping and countervailing duty cases. It also considers issues that arose in constructing the data set used to calculate injury (used in Chapter 4).

I. Basic Sources

The principal data sources for this study are 184 reports issued by the U.S. International Trade Commission (ITC) between 1980 and 1988 for final antidumping (AD) and final countervailing duty (CVD) investigations. Reports are issued when the ITC makes a final determination, whether affirmative or negative. The reports we use cover all final AD and CVD investigations conducted by the ITC during the nine year period --- altogether 179 AD and 99 CVD investigations were concluded during these years.

II. Definition of Case

Based on the information contained in these reports, we constructed a data set based on what we call a "final ITC case," or "case." In order to estimate the effect on domestic producers from dumped or subsidized imports it is necessary to specify the domestic product and the unfair imports -- in effect specify the contours of a case. Cases are defined based on decisions by the ITC regarding the appropriate domestic product and the foreign country(ies) alleged to supply unfair imports that injure domestic producers. While each of our cases has a single domestic product, there may be one or more countries that supply unfair imports. Altogether, there are 221 cases.

In most instances the definition of a case is relatively straightforward: an ITC report deals with only one domestic product, only one foreign country supplying unfair imports, and also only one type of unfair imports -- either dumped or subsidized. However, four types of complications arise.

The first complication is where the unfair imports covered by an ITC report are both dumped and subsidized. If foreign firms are selling at less than fair value and at the same time they are receiving subsidies from their government, there are two unfair practices to consider. Moreover, the ITC potentially may reach different

final determinations for dumping and subsidy. Accordingly, two cases are constructed for this situation, one for the AD investigation and the second for the CVD investigation.

The second complication is where an ITC report covers two (or more) domestic products (i.e., like products) that are allegedly harmed by unfair imports. Since basic features relevant to the two products (e.g., the domestic market share of unfair imports) may differ considerably, it is important to distinguish between them in order to calculate as accurately as possible the injury caused by unfair imports. Thus, two cases are constructed when an ITC report involves two products.

The third complication is where domestic producers claim they are harmed by unfair imports from two (or more) foreign countries. We follow the ITC and combine (i.e., cumulate) unfair imports from the relevant foreign countries.[114] Therefore, a particular ITC report may list several countries, but if unfair imports from all of them are cumulated there is only one case.

The final complication is where a single case involves two (or more) ITC reports. This arises when unfair imports of several countries are cumulated, but because of special circumstances the case is divided into two (or more) parts.[115] The decision for each part (for which there is a corresponding ITC report) is announced at a different date. However, the basic facts for each part are the same and ITC essentially makes only one decision. Thus, there is only one case.

Table 2A.1 provides information about the 221 cases. For each case the table lists the product involved, the date the ITC report for the case was issued, the percent margin of dumping or subsidy, the percent share of unfair imports, and the case number we assign to the case.[116]

III. Data used to Calculate Injury

The entries under column "Data Type" indicate whether the case was included in our sample and if so the type of data we used to estimate injury (in chapter 4). It was possible to use 174 of the 221 cases in our sample. Of the remaining 47

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[114] There are two types of cumulation. The first is where unfair imports from all relevant countries involve the same unfair practice, either dumping or subsidy. The second, "cross cumulation," is where there is cumulation across unfair practices.

[115] For example, one of the countries in a case may request that the Department of Commerce grant it more time to prepare the information needed to calculate the dumping or subsidy margin.

[116] The first four digits of the case number are the ITC report number. The fifth digit indicates the degree of complexity of the case. When an ITC report involves a single like product the fifth digit is "0." When an ITC report involves more than one like product the different like products are distinguished by the fifth digit, starting with "1." When a case involves two or more reports the fifth digit is a "9". For these cases only the first four digits indicate the report that is the principal source of data.

TABLE 2A.1

CHARACTERISTICS OF UNFAIR IMPORT CASES
1980 TO 1988

Row	Case No.	Date Report Issued	Product	Data Type	Margin (percent) Subsidy	Margin (percent) Dumping	Domestic Market Share of Unfair Imports (percent) Value	Domestic Market Share of Unfair Imports (percent) Quantity
1	10450	MAR80	NONRUBBER FOOTWEAR	Q	1.01	0.00	.	0.40
2	10461	MAR80	SPUN ACRYLIC PLIED YARN	Q	0.00	23.19	.	12.00
3	10462	MAR80	SPUN ACRYLIC PLIED YARN	Q	0.00	48.05	.	4.00
4	10470	MAR80	REFINED SUGAR	Q	0.00	20.33	.	3.31
5	10480	MAR80	COLD PIG IRN	Q	6.07	0.00	.	17.20
6	10610	MAY80	DEXTR & SOL CHEM TR STAR	VQ	35.84	.	2.64	1.83
7	10620	MAY80	PORT ELEC TYPEWRITERS	INSUFF	0.00	37.12	.	.
8	10630	MAY80	ELEC DIGIT & COUNT SCALE	VQ	4.00	0.00	10.09	21.91
9	10651	MAY80	MELAMINE IN CRYSTAL FORM	VQ	0.00	31.05	4.75	5.81
10	10652	MAY80	MELAMINE IN CRYSTAL FORM	VQ	0.00	12.16	2.56	2.89
11	10661	MAY80	WHOLE GROUNDFISH	Q	1.08	0.00	.	3.50
12	10662	MAY80	FILLETS GROUNDFISH	Q	1.08	0.00	.	34.40
13	10760	JUN80	CAN TOMAT & TOMATO CONC	Q	77.20	0.00	.	1.10
14	10770	JUN80	COOKIES	V	27.70	0.00	0.43	.
15	10791	JUN80	NONE (CHEESE)	NOINJ	32.60	0.00	84.88	81.72
16	10792	JUN80	FETA CHEESE	Q	12.50	0.00	.	5.10
17	10820	JUL80	CANNED HAMS	Q	33.74	0.00	.	14.97
18	10861	JUL80	COTTON SHEETING	Q	10.80	0.00	.	9.70
19	10862	JUL80	COTTON TOWELS	Q	12.50	0.00	.	3.60
20	10863	JUL80	MEN & BOYS COTTON T-SHIR	Q	13.50	0.00	.	2.40
21	10880	AUG80	STEEL WIRE NAILS	Q	0.00	11.50	.	7.10
22	11160	DEC80	POLYPHASE AC ELEC MOTORS	PMSV	.	6.70	4.30	8.70
23	11180	DEC80	ANHYDROU SODIU METASILIC	Q	0.00	60.00	.	3.20
24	11440	MAY81	LEATHER WEARING APPAREL	Q	14.38	0.00	.	2.80
25	11510	JUN81	SYNTHETIC MENTHOL	INSUFF	.	2.50	.	.
26	11540	JUN81	PRECIP BARIUM CARBONATE	VQ	0.00	9.90	11.45	15.10
27	11550	JUN81	STRONTIUM NITRATE	INSUFF	0.00	2.60	.	.
28	11800	AUG81	UNREFINED MONTAN WAX	INSUFF	.	13.02	.	.
29	12280	MAR82	12 VOLT BATTERIES	PMSQ	0.00	7.40	.	23.20
30	12331	MAR82	LIQUID SORBITOL	INSUFF	.	5.50	.	.
31	12332	MAR82	CRYSTALLINE SORBITOL	INSUFF	.	2.90	.	.
32	12500	MAY82	FIREPLACE MESH PANELS	CMSQ	0.00	4.70	.	43.20
33	12660	JUL82	AMPLIFIERS	INSUFF	.	41.40	.	.

TABLE 2A.1

CHARACTERISTICS OF UNFAIR IMPORT CASES
1980 TO 1988--Continued

Row	Case No.	Date Report Issued	Product	Data Type	Margin (percent) Subsidy	Margin (percent) Dumping	Domestic Market Share of Unfair Imports (percent) Value	Domestic Market Share of Unfair Imports (percent) Quantity
34	12700	JUL82	STNL CLAD STEEL PLATE	INSUFF	0.00	14.00	.	.
35	12740	AUG82	STEEL WIRE NAILS	Q	0.00	4.00	.	19.00
36	12810	AUG82	WIRE STR STL PREST CONCR	PQ	1.77	0.00	.	5.62
37	13250	DEC82	WIRE STR STL PREST CONCR	PQ	6.97	0.00	.	1.64
38	13331	DEC82	HOT-ROLL STAINL STL BAR	VQ	15.43	0.00	0.90	1.60
39	13332	DEC82	COLD-FORM STAINL STL BAR	VQ	15.43	0.00	3.20	5.00
40	13333	DEC82	STAINLESS STEEL WIRE ROD	VQ	15.43	0.00	4.60	5.40
41	13380	FEB83	CARBON STEEL WIRE ROD	Q	0.00	40.00	.	0.50
42	13430	FEB83	WIRE STR STL PRE CON	PQ	0.00	33.89	.	4.28
43	13450	FEB83	WEL CARB STL PIPES & TUB	Q	1.88	0.00	.	14.00
44	13471	FEB83	SEAML HEA-RESIS STL PIPE	INSUFF	0.00	2.83	.	.
45	13472	FEB83	SEAML STNL STL PIPE & TU	INSUFF	.	22.95	.	.
46	13570	MAR83	SYNTHETIC SODIUM NITRATE	INSUFF	0.00	33.40	.	.
47	13580	MAR83	WIRE STR STL PREST CONCR	PQ	13.90	0.00	.	3.65
48	13900	JUN83	SOLUB INDUS NITROCELLULO	INSUFF	3.60	.	.	.
49	13911	JUN83	STAINLESS STL SHEET&STRP	Q	19.31	0.00	.	0.70
50	13912	JUN83	STAINLESS STEEL PLATE	Q	19.31	0.00	.	3.40
51	13913	JUN83	STAINLESS STL SHEET&STRP	Q	0.00	7.29	.	3.50
52	13914	JUN83	STAINLESS STL SHEET&STRP	Q	0.00	3.51	.	3.80
53	13981	JUN83	HOT-ROLL STAINL STL BAR	Q	15.44	0.00	.	2.30
54	13982	JUN83	COLD-FORM STAINL STL BAR	Q	15.44	0.00	.	3.20
55	13983	JUN83	STAINLESS STEEL WIRE ROD	Q	15.44	0.00	.	2.80
56	14031	JUL83	TOOL STEEL BAR & ROD	Q	18.77	0.00	.	3.20
57	14032	JUL83	TOOL STEEL BAR & ROD	Q	0.00	7.10	.	11.10
58	14060	JUL83	FROZ CONCEN ORANGE JUICE	PQ	2.77	0.00	.	29.70
59	14090	JUL83	SOLUB INDUS NITROCELLULO	INSUFF	.	1.38	.	.
60	14101	AUG83	DISPLAY PAGERS	INSUFF	.	0.13	.	.
61	14102	AUG83	TONE-ONLY PAGERS	INSUFF	.	41.80	.	.
62	14170	AUG83	BICYCLES	PQ	0.00	0.36	.	16.14
63	14210	SEP83	POLYESTER/COTTON PRINTCL	VQ	0.00	22.40	10.09	12.40

TABLE 2A.1

CHARACTERISTICS OF UNFAIR IMPORT CASES
1980 TO 1988--Continued

Row	Case No.	Date Report Issued	Product	Data Type	Margin (percent) Subsidy	Margin (percent) Dumping	Domestic Market Share of Unfair Imports (percent) Value	Domestic Market Share of Unfair Imports (percent) Quantity
64	14310	SEP83	SHOP TOWELS	VQ	0.00	38.80	24.10	38.30
65	14401	OCT83	PORTL HYDRAULIC CEMENT	Q	0.00	136.19	.	1.80
66	14402	OCT83	PORTL HYDRAULIC CEMENT	Q	0.00	37.24	.	1.36
67	14441	OCT83	CARBON STEEL WIRE ROD	Q	0.00	63.51	.	2.90
68	14442	OCT83	CARBON STEEL WIRE ROD	Q	0.00	9.79	.	1.50
69	14541	DEC83	STAPLES(CARTON CLOSING)	Q	0.00	12.25	.	19.50
70	14542	DEC83	STAPLE MACHINES	Q	0.00	122.79	.	21.70
71	14570	DEC83	LTWT POLYES FIL FABR	VQ	0.00	0.61	17.91	15.50
72	14630	DEC83	POTATOS-ROUND WHITE FALL	Q	0.00	36.10	.	4.00
73	14651	DEC83	SEMIFIN LINK (UNDERCARR)	INSUFF	1.37	.	.	.
74	14652	DEC83	SEMIFIN ROLL (UNDERCARR)	INSUFF	1.37	.	.	.
75	14740	JAN84	POTASSIUM PERMANGANATE	INSUFF	0.00	5.49	.	.
76	14800	JAN84	POTASSIUM PERMANGANATE	INSUFF	0.00	39.63	.	.
77	14900	FEB84	SHOP TOWELS	VQ	12.67	0.00	2.12	3.00
78	14971	FEB84	TAPERED ROLLER BEARINGS	INSUFF	.	12.50	.	.
79	14972	FEB84	TAPERED ROLLER BEARINGS	INSUFF	.	24.70	.	.
80	14990	MAR84	CARBON STEEL PLATE	Q	0.00	84.06	.	3.00
81	15050	MAR84	CHLOROPICRIN	INSUFF	.	58.00	.	.
82	15130	AUG84	ISOCYANURATES	PMSQ	.	32.20	.	21.70
83	15141	APR84	COLOR TV MONITORS	INSUFF	.	23.77	.	.
84	15142	APR84	COLOR TV RECEIVERS	CMSV	.	5.56	2.10	3.80
85	15143	APR84	COLOR TV RECEIVERS	CMSV	.	14.64	2.80	5.30
86	15191	APR84	SM-DIAM CIRC PIPES&TUBES	Q	0.00	9.70	.	6.90
87	15192	APR84	SM-DIAM CIRC PIPES&TUBES	Q	0.00	0.90	.	22.90
88	15193	APR84	HEAVY-WALL REC PIP&TUBES	Q	0.00	1.47	.	1.00
89	15194	APR84	LT-WALL RECT PIPES&TUBES	Q	0.00	1.47	.	5.30
90	15250	MAY84	ALL ACRYLIC SHEET	Q	0.00	4.56	.	7.80
91	15321	MAY84	BICYCLE TIRES	INSUFF	0.00	3.65	.	.
92	15322	MAY84	BICYCLE TUBES	INSUFF	0.00	3.65	.	.
93	15381	JUN84	CARBON STEEL PLATE	Q	36.95	0.00	.	3.90
94	15382	JUN84	HOT-ROLL CARB STEE SHEET	Q	36.95	0.00	.	2.30
95	15383	JUN84	COLD-ROLL CARB STL SHEET	Q	36.95	0.00	.	2.20
96	15440	JUN84	CARBON STEEL WIRE ROD	Q	16.95	0.00	.	1.80

TABLE 2A.1

CHARACTERISTICS OF UNFAIR IMPORT CASES
1980 TO 1988--Continued

Row	Case No.	Date Report Issued	Product	Data Type	Margin (percent) Subsidy	Margin (percent) Dumping	Domestic Market Share of Unfair Imports Value	Domestic Market Share of Unfair Imports Quantity
97	15560	JUL84	STEEL VALVES	VQ	0.00	2.50	3.20	2.30
98	15680	AUG84	HOT-ROLL CARB STEE SHEET	Q	0.00	6.45	.	2.30
99	15740	SEP84	CARBON STEEL WIRE ROD	VQ	0.00	36.80	0.43	0.60
100	15750	SEP84	FRESH CUT ROSES	Q	0.00	2.86	.	16.00
101	15790	SEP84	COLD-ROLL CARB STL SHEET	Q	0.00	0.91	.	2.24
102	15840	OCT84	BARIUM CHLORIDE	INSUFF	0.00	14.50	.	.
103	15930	OCT84	STAINLESS STL SHEET&STRP	Q	0.00	39.56	.	1.90
104	15950	OCT84	CHOLINE CHLORIDE LIQ&DRY	INSUFF	.	9.70	.	.
105	15981	NOV84	CARBON STEEL WIRE ROD	VQ	0.00	119.11	1.26	1.50
106	15982	NOV84	CARBON STEEL WIRE ROD	VQ	0.00	36.43	1.98	1.80
107	16001	NOV84	TITANIUM SPONGE	Q	0.00	28.47	.	6.20
108	16002	NOV84	TITANIUM SPONGE	Q	0.00	109.06	.	0.20
109	16331	JAN85	OIL COUNTRY TUBULAR GOOD	Q	0.53	0.00	.	3.20
110	16332	JAN85	OIL COUNTRY TUBULAR GOOD	Q	8.22	0.00	.	5.90
111	16340	JAN85	COLD-ROLL CARB STL SHEET	Q	3.60	0.00	.	1.20
112	16370	JAN85	COLD-ROLL CARB STL SHEET	Q	0.00	122.30	.	0.80
113	16491	FEB85	PRESSURE-RESTRICT VALVES	PMSQ	.	1.28	.	64.90
114	16492	FEB85	PRESSURE-REGULAT VALVES	INSUFF	.	1.28	.	0.00
115	16493	FEB85	SIAMESE CONNECTIONS	PMSQ	.	1.28	.	69.70
116	16494	FEB85	WEDG DISC HOSE GATE VAVL	PMSQ	.	1.28	.	38.20
117	16495	FEB85	ANGLE-TYPE HOSE VALVES	PMSQ	.	1.28	.	57.60
118	16496	FEB85	FIRE HOSE COUPLINGS	PMSQ	.	1.28	.	58.40
119	16497	FEB85	FOG/STRAIGHT STRM NOZZLE	PMSQ	.	1.28	.	62.50
120	16560	MAR85	POTASSIUM CHLORIDE	Q	0.00	1.77	.	1.30
121	16720	APR85	CALCIUM HYPOCHLOITE	INSUFF	0.00	12.29	.	.
122	16811	APR85	MALLE CAST-IRON PIPE FIT	Q	18.00	0.00	.	1.70
123	16812	APR85	NONMALL CAST-IRON PIPE F	INSUFF	18.00	0.00	.	.
124	16941	AUG85	OIL COUNTRY TUBULAR GOOD	Q	0.00	61.70	.	0.50
125	16942	AUG85	OIL COUNTRY TUBULAR GOOD	Q	0.00	76.80	.	2.00
126	17070	JUN85	RED RASBERRIES	PMSQ	.	2.41	.	36.00
127	17110	JUL85	DRIED HEAVY SALT CODFISH	INSUFF	0.00	16.30	.	.
128	17210	JUL85	NEOPRENE LAMINATE (FENL)	INSUFF	0.00	3.09	.	.
129	17220	JUL85	TUBUL STL FRAM STAC CHAI	PQ	.	7.58	.	83.30
130	17240	JUL85	EGG FILLER FLATS	INSUFF	.	14.93	.	.
131	17331	JUL85	FRESH PORK	Q	6.30	0.00	.	2.20

TABLE 2A.1

CHARACTERISTICS OF UNFAIR IMPORT CASES
1980 TO 1988--Continued

Row	Case No.	Date Report Issued	Product	Data Type	Margin (percent)		Domestic Market Share of Unfair Imports (percent)	
					Subsidy	Dumping	Value	Quantity
132	17332	JUL85	LIVE SWINE	Q	8.40	0.00	.	1.60
133	17591	SEP85	CARBON STEEL PLATE	Q	8.77	0.00	.	1.50
134	17592	SEP85	HOT-ROLL CARB STEE SHEET	Q	5.48	0.00	.	1.20
135	17593	SEP85	COLD-ROLL CARB STL SHEET	Q	3.85	0.00	.	3.67
136	17594	SEP85	HOT-ROLL CARB STEE SHEET	Q	0.00	2.20	.	0.60
137	17611	OCT85	DISCS (TILLAGE TOOLS)	PMSV	8.06	.	17.20	.
138	17612	OCT85	OTHER TILLAGE TOOLS	PMSV	8.06	.	2.70	.
139	17700	OCT85	BARBED WIRE	Q	0.00	69.02	.	4.00
140	17799	NOV85	COPPER WIRE	INSUFF	.	.	.	.
141	17840	DEC85	PHOTO ALBUMS	PV	0.00	53.03	33.39	.
142	17850	NOV85	CARBON STEEL STRUC SHAPE	Q	0.00	13.70	.	1.00
143	17861	DEC85	CELLULAR MOBILE TELEPHON	INSUFF	.	57.81	.	.
144	17862	DEC85	SUBASSEM /CELLU MOB PHON	INSUFF	.	57.81	.	.
145	17980	JAN86	ROCK SALT	Q	0.00	6.35	.	19.00
146	17990	JAN86	LT-WALL RECT PIPES&TUBES	Q	0.00	7.11	.	3.30
147	18040	JAN86	CASTOR OIL	INSUFF	.	1.51	.	.
148	18050	JAN86	PAINT BRUSHES	Q	0.00	127.07	.	22.80
149	18080	FEB86	HEAVY-WALL REC PIP&TUBES	VQ	0.00	0.65	15.06	14.40
150	18101	FEB86	LINE PIPE	Q	17.80	0.00	.	0.70
151	18102	FEB86	STANDARD PIPE	VQ	0.00	28.36	0.49	0.70
152	18103	FEB86	STANDARD PIPE	VQ	65.24	0.00	0.43	0.70
153	18111	FEB86	LIGH IRON CONSTR CASTING	Q	0.00	10.20	.	12.00
154	18112	FEB86	HEAV IRON CONSTR CASTING	Q	0.00	32.12	.	24.10
155	18181	MAR86	ETHANOL	PV	2.60	0.00	14.53	22.07
156	18182	MAR86	ETHANOL	PV	0.00	98.81	14.53	22.07
157	18391	APR86	STANDARD PIPE	VQ	0.00	12.79	3.15	4.27
158	18392	APR86	LINE PIPE	VQ	0.00	22.95	1.73	2.17
159	18420	MAY86	STEEL WIRE NAILS	Q	0.00	6.33	.	5.10
160	18441	MAY86	WHOLE GROUNDFISH	Q	5.82	0.00	.	22.00
161	18442	MAY86	GROUNDFISH FILLETS	Q	5.82	0.00	.	19.30
162	18450	MAY86	MALLE CAST-IRON PIPE FIT	Q	0.00	28.46	.	15.10
163	18481	MAY86	OFFSHORE PLATFORM JACKET	MAXINJ	4.42	.	.	93.70

TABLE 2A.1

CHARACTERISTICS OF UNFAIR IMPORT CASES
1980 TO 1988--Continued

Row	Case No.	Date Report Issued	Product	Data Type	Margin (percent) Subsidy	Margin (percent) Dumping	Domestic Market Share of Unfair Imports (percent) Value	Domestic Market Share of Unfair Imports (percent) Quantity
164	18482	MAY86	OFFSHORE PLATFORM JACKET	MAXINJ	.	17.34	.	93.70
165	18483	MAY86	OFFSHORE PLATFORM JACKET	MAXINJ	.	8.92	.	6.30
166	18484	MAY86	OFFSHORE PLATFORM PILES	CMSQ	4.42	.	.	10.50
167	18485	MAY86	OFFSHORE PLATFORM PILES	CMSQ	.	17.34	.	10.50
168	18486	MAY86	OFFSHORE PLATFORM PILES	CMSQ	.	8.92	.	14.50
169	18620	JUN86	DRAMS	PQ	0.00	20.75	.	21.11
170	18650	JUN86	OIL COUNTRY TUBULAR GOOD	PQ	2.30	18.51	.	6.00
171	18750	JUL86	PISTACHIO NUTS	Q	0.00	241.14	.	42.30
172	18800	JUL86	IRON ORE PELLETS	Q	7.94	0.00	.	1.40
173	18850	AUG86	STANDARD PIPE	VQ	0.00	30.00	0.02	0.05
174	18880	AUG86	CANDLES	PV	0.00	54.21	8.00	18.00
175	19071	NOV86	STANDARD PIPE	VQ	0.00	12.66	3.07	4.20
176	19072	NOV86	LT-WALL RECT PIPES&TUBES	Q	0.00	12.60	.	1.00
177	19110	NOV86	PORCELAI-ON-STL COOKWARE	INSUFF	.	.	.	.
178	19189	DEC86	CARB STL BUT-WEL PIP FIT	CMSV	0.00	56.99	50.00	65.00
179	19270	DEC86	EPROMS	PMSQ	.	93.90	.	26.70
180	19309	DEC86	BRASS SHEET & STRIP	Q	1.33	15.44	.	18.70
181	19341	JAN87	AWNING OPERATORS	PQ	4.76	.	.	26.73
182	19342	JAN87	JALOUSIE OPERATORS	PMSQ	4.76	.	.	25.00
183	19343	JAN87	AWNING OPERATORS	PQ	.	40.20	.	26.73
184	19344	JAN87	JALOUSIE OPERATORS	PMSQ	.	40.20	.	25.00
185	19361	JAN87	TOP-STOVE STAIN ST COOK	VQ	0.81	0.00	23.60	50.00
186	19362	JAN87	TOP-STOVE STAIN ST COOK	VQ	0.00	8.40	23.60	50.00
187	19389	JAN87	MIRRORS(UNFIN FLAT GLASS	Q	0.00	58.50	.	11.50
188	19520	FEB87	OIL COUNTRY TUBULAR GOOD	Q	2.30	18.51	.	6.00
189	19561	MAR87	STANDARD CARNATIONS	VQ	0.13	4.22	54.60	69.50
190	19562	MAR87	MINIATURE CARNATIONS	VQ	3.57	2.60	44.60	38.50
191	19563	MAR87	STANDARD CHRYSANTHEMUMS	VQ	1.05	2.65	26.20	38.60
192	19564	MAR87	POMPOM CHRYSANTHEMUMS	VQ	0.11	3.59	52.50	50.60
193	19565	MAR87	ALSTROEMERIA	Q	0.99	2.53	.	48.80
194	19566	MAR87	GERBERAS	Q	3.57	0.71	.	60.40
195	19567	MAR87	GYPSOPHILA	Q	7.23	1.88	.	46.40

TABLE 2A.1

CHARACTERISTICS OF UNFAIR IMPORT CASES
1980 TO 1988--Continued

Row	Case No.	Date Report Issued	Product	Data Type	Margin (percent) Subsidy	Margin (percent) Dumping	Domestic Market Share of Unfair Imports (percent) Value	Domestic Market Share of Unfair Imports (percent) Quantity
196	19661	APR87	SEAML STNL STL PIPE & TU	NOINJ	0.00	0.00	17.20	18.50
197	19662	APR87	WELD STAIN STL PIPE & TU	VQ	2.18	0.00	2.90	4.10
198	19700	APR87	FROZ CONCEN ORANGE JUICE	VQ	0.00	1.96	36.00	41.00
199	19710	APR87	DISC WHEELS	INSUFF	.	17.99	.	.
200	19839	AUG87	TAPERED ROLLER BEARINGS	PMSV	0.00	38.37	11.20	15.00
201	19920	JUL87	UREA	PMSV	0.00	64.32	13.60	17.80
202	19940	JUL87	LT-WALL RECT PIPES&TUBES	VQ	0.00	17.29	2.80	3.40
203	20000	AUG87	INDUST PHOSPHORIC ACID	VQ	3.80	12.38	2.40	2.50
204	20011	AUG87	ASPIRIN	PMSV	19.54	0.00	3.50	4.80
205	20012	AUG87	ASPIRIN	PMSV	0.00	32.98	3.50	4.80
206	20049	AUG87	PIPE FIT MALLE THRD C IR	VQ	0.00	35.06	14.40	18.90
207	20140	SEP87	CRANKSHAFTS(FORGED STEEL	INSUFF	.	.	.	.
208	20150	SEP87	SILICA FILAMENT FABRIC	INSUFF	.	193.94	.	.
209	20320	NOV87	EXPANDED NEOPRENE LAMINA	INSUFF	.	0.80	.	.
210	20331	NOV87	SEAML STNL STL PIPE & TU	VQ	0.00	20.47	12.30	17.90
211	20332	NOV87	WELD STAIN STL PIPE & TU	VQ	0.00	34.50	2.70	3.70
212	20460	DEC87	COLOR PICTURE TUBES	VQ	.	11.60	11.40	13.40
213	20670	MAR88	STAINL STL BUT-WEL PIP F	PMSV	.	49.31	46.90	53.80
214	20800	MAY88	BIMETALLIC CYLINDERS	PV	.	17.42	12.10	9.57
215	20820	MAY88	FORKLIFT TRUCKS	PMSV	0.00	39.50	46.30	51.40
216	20900	JUN88	NITRILE RUBBER	CMSV	.	146.50	4.00	5.20
217	20990	JUL88	BRASS SHEET & STRIP	Q	0.00	33.23	.	6.20
218	21031	AUG88	ELEC CONDUC ALUM RE ROD	VQ	0.00	5.80	11.00	12.00
219	21032	AUG88	ELEC CONDUC ALUM RE ROD	VQ	38.40	0.00	11.00	12.00
220	21100	AUG88	GRANITE	V	0.09	4.59	38.60	33.90
221	21120	AUG88	TEFLON	PMSV	.	91.74	25.60	28.50

Notes: A "." indicates not available.
Under data type, Q = quantity, V = value, VQ = value and quantity,
CMSQ = complete market share quantity, CMSV = complete market share value,
PQ = partial quantity, PV = partial value, PMSQ = partial market share quantity,
PMSV = partial market share value, INSUFF = insufficient, NOINJ = no injury,
MAXINJ = maximum injury.

Source: Bureau of Economics, FTC.

cases, 42 could not be used because the public version of the ITC report did not provide the requisite data on imports or domestic shipments needed to estimate injury. They are indicated by "Insuff." Five cases were excluded from the sample because, *a priori*, there was no doubt about the relative magnitude of injury from unfair imports and it was therefore not necessary to estimate injury. Two cases, indicated by "Noinj," did not involve any injury[117] and three cases, indicated by "Maxinj," involved considerable injury.[118]

The 174 cases in our sample differ by the type of the data used to estimate injury. For purposes of applying our model, it is important to distinguish three groups of cases.

The first group has 45 cases and consists of three components. This group includes 39 cases indicated by VQ (values and quantities), 2 cases indicated by V (values), and 4 cases indicated by CMSV (complete domestic market shares based on values). For example, the designation VQ indicates cases that we have both values and quantities for domestic product, unfair imports, and (if present) fair imports. This group has the most complete data and gives the most accurate estimates of injury to domestic industry caused by unfair imports. Our model requires information about prices of domestic and imported products. With the VQ data set, average prices are obtained from unit values (i.e., V/Q). Alternatively, with the V and CMSV data sets, quantity units are selected so that prices are equal to unity. Such data still allow accurate calculation of the percentage change in domestic industry revenue (injury) due to unfair imports.

The second group has 91 cases and has two components. This group includes 87 cases indicated by Q (quantity) and 4 cases indicated by CMSQ (complete domestic market shares based on quantities). Therefore, it is not possible to obtain prices. Since we need prices to run our model, we assume that prices of domestic and imported products are equal. Since the price of the unfair import product is typically less than the price of domestic product, this assumption tends to overestimate the injury from unfair imports.[119] By assuming price uniformity,

[117] For case number 10791, the ITC found that unfairly imported product (a cheese product from the EC) was so dissimilar to U.S. cheeses that no domestic industry was affected by unfair imports. For case number 19661, Commerce found a *de minimis* subsidy margin.

[118] The three cases, case numbers 18481-3, all involve offshore platform jackets. The last order received by the domestic industry was in 1982 and by 1985 production had ceased. See Offshore Platform Jackets and Piles from the Republic of Korea and Japan, USITC Pub. No. 1848, Inv. Nos. 701-TA-248 and 731-TA-259/260, May 1986, p. 10.

[119] Of the 36 cases that had different observations for average price of unfair imports in the data set VQ only 6 cases reported the unfair price to be higher than the domestic price.

imported products are given a greater weight than they in fact should have, which produces an upward bias for estimated injury.[120]

The third group has 38 cases and has four components. This group includes 11 cases indicated by PQ (partial quantity), 5 cases indicated by PV (partial value), 12 cases indicated by PMSQ (partial market shares for quantity), and 10 cases indicated by PMSV (partial market shares for value). This group has partial quantity or value data (absolute or percent shares) and was constructed in a manner that overestimates injury. This arises because it is not possible to determine the amount of fair imports so that fair imports are assumed to be zero. For example, information is available only for unfair imports but not total imports. By assuming fair imports to be zero, the full burden of unfair imports necessarily falls on domestic industry and produces an upward bias for estimated injury.[121]

[120] Note that cases where the average price of unfair imports is lower than the average price of the domestic product also tend to be cases where the average price of fair imports are also low. Based on the data discussed in the previous note, there is a positive and statistically significant correlation between the prices of the two imported products.

[121] In addition, in a few cases there is a further bias producing overestimates of injury. In some cases we used a higher margin of dumping or subsidy than the true weighted average margin. This occurs, for example, when individual quantity (or value) data are not available for two or more foreign companies and we use the highest margin reported.

APPENDIX B

METHODOLOGY FOR CALCULATING INJURY FROM UNFAIR IMPORTS

The objective of this study is to measure the impact that unfair imports, goods that have been subsidized or dumped, have had on competing U.S. industries. To do so, we estimate what the performance of these domestic industries would have been had they not had to compete with unfair imports, and compare it to the actual performance of these same industries.

This appendix describes the methodology used to compute the estimated upper bounds of the effects of unfair imports upon domestic industries. It describes the assumptions of the model and the justifications for these assumptions, the algorithms used to compute these estimates, and the reasons why these results overestimate the impact of unfair imports on domestic industries.

This approach to measuring the economic impact of unfair imports has much in common with the methodologies developed by former ITC economists Richard Boltuck and Michael Knoll to aid the ITC in making injury determinations in countervailing duty and dumping investigations. Those familiar with their contributions will recognize our intellectual debt to them. We believe that our methodology contributes to this literature, and can be considered a further evolution of their work.

I. Demand

It is assumed that imports and competing domestic products are viewed by their purchasers in the U.S. as imperfect substitutes. Thus, imported and domestic products can be sold simultaneously in the U.S. at different prices in equilibrium. If an importer raises the price of its product, it will lose some, but not all, of its sales. When an importer cuts the price of its product, sales of the competing domestic product will decline, but generally not to zero.

To determine the impact of unfair imports, we need to know what would have happened if the unfair practices had not occurred. To do so, it is necessary to specify functional forms for the demands in the U.S. for domestic products, unfairly traded imports, and fairly traded imports, if any. A desirable property of such demand equations is that they should allow us to model the interrelated nature of demand for products that are imperfect substitutes, yet require a minimum number of parameters to be estimated.

These requirements are met by adopting a model that has the following specifications. We first assume that for any industry definition, all goods sold in the U.S. can be aggregated into one of three categories: domestically produced, unfair imports, and fair imports. Let Q_d be the quantity of the domestic product, Q_u the quantity of unfair imports, and Q_f the quantity of fairly traded imports. Second, the marginal rate of substitution in consumption between any two of Q_d, Q_u, or Q_f is independent of the consumption of any other good.[122] This "separation" of Q_d, Q_u, and Q_f from all other goods (referred to as "weak separability"), implies that Q_d, Q_u, and Q_f can be aggregated into a composite good, which we call Q_A.[123] Third, the elasticities of substitution between any two goods Q_d, Q_u, or Q_f are constant and equal to each other. This allows us to express Q_A as a constant elasticity of substitution (CES) aggregation function[124] of Q_d, Q_u, and Q_f, as shown by

$$Q_A = [b_d Q_d^{-\rho} + b_u Q_u^{-\rho} + b_f Q_f^{-\rho}]^{-1/\rho}$$

where b_d, b_u, b_f, and ρ are constants with $b_d + b_u + b_f = 1$ and $\rho > -1, \neq 0$. As the name of the model implies, the elasticity of substitution between any two products, σ, will be constant, and can be shown to be equal to $1/(1+\rho)$. The price of the aggregate product, P_A, is defined to be

$$P_A \equiv \frac{[P_d Q_d + P_u Q_u + P_f Q_f]}{Q_A}$$

where P_d, P_u, and P_f are respectively, the prices of domestic products, unfairly traded imports, and fairly traded imports.

The demand structure adopted above implies specific forms for the demand functions for Q_d, Q_u and Q_f. As a consequence of weak separability, consumers decide optimal quantities of Q_d, Q_u and Q_f based only on (1) the total budget for the

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[122] This assumption of independence is commonly adopted in empirical demand analysis. See for example Philps (1974), chap. 3.

[123] The proof of this statement is due to Leontief (1947).

[124] Armington (1969) was the first to suggest the empirical usefulness of CES functions. CES functions have since become widely adopted by empirical international trade researchers.

composite good Q_A together with (2) market prices P_d, P_u and P_f. Weak separability plus CES aggregation gives[125]

$$D_d(P_d,P_u,P_f) = b_d^{\sigma} Q_A (P_d/P_A)^{-\sigma}$$

$$D_u(P_d,P_u,P_f) = b_u^{\sigma} Q_A (P_u/P_A)^{-\sigma}$$

$$D_f(P_d,P_u,P_f) = b_f^{\sigma} Q_A (P_f/P_A)^{-\sigma}$$

Demand for the aggregate product, D_A, is assumed to take the constant elasticity form, so that

$$D_A = \alpha_A P_A^{\varepsilon_A}$$

Combining this with the equations above gives:

$$D_d(P_d,P_u,P_f) = (b_d/P_d)^{\sigma} \alpha_A^{-\sigma/\varepsilon_A} Q_A^{(1+\sigma/\varepsilon_A)} \quad (1)$$

$$D_u(P_d,P_u,P_f) = (b_u/P_u)^{\sigma} \alpha_A^{-\sigma/\varepsilon_A} Q_A^{(1+\sigma/\varepsilon_A)} \quad (2)$$

$$D_f(P_d,P_u,P_f) = (b_f/P_f)^{\sigma} \alpha_A^{-\sigma/\varepsilon_A} Q_A^{(1+\sigma/\varepsilon_A)} \quad (3)$$

We will also find it convenient to define $\gamma_d \equiv P_dQ_d/P_AQ_A$, $\gamma_u \equiv P_uQ_u/P_AQ_A$, and $\gamma_f \equiv P_fQ_f/P_AQ_A$, as, respectively, the value weighted shares of the domestic, unfairly traded and fairly traded products.

[125] See Armington (1969), p. 167. Also see Morkre (1984), p. 63.

Given this structure for the demand equations of the model, we can compute the own price and cross-price elasticities of demand for the three products:[126]

$$\varepsilon_d = (1 - \gamma_d)\sigma + \gamma_d\varepsilon_A \qquad \varepsilon_u = (1 - \gamma_u)\sigma + \gamma_u\varepsilon_A \qquad \varepsilon_f = (1 - \gamma_f)\sigma + \gamma_f\varepsilon_A$$

$$\varepsilon_{du} = \gamma_u(\sigma - \varepsilon_A) \qquad \varepsilon_{ud} = \gamma_d(\sigma - \varepsilon_A) \qquad \varepsilon_{fd} = \gamma_d(\sigma - \varepsilon_A)$$

$$\varepsilon_{df} = \gamma_f(\sigma - \varepsilon_A) \qquad \varepsilon_{uf} = \gamma_f(\sigma - \varepsilon_A) \qquad \varepsilon_{fu} = \gamma_u(\sigma - \varepsilon_A)$$

where ε_i is the own price elasticity of demand for product i and ε_{ij} is the cross price elasticity of demand for good i with respect to a change in the price of good j. These elasticities are not, therefore, constant, since they vary with the prices and quantities.

II. Supply

It is assumed in this study that both domestic production and fair imports are supplied competitively to the U.S. market. It is further assumed that these supply relationships are of the constant elasticity form, so that we have

$$S_d = \alpha_d P_d^{\eta_d} \tag{4}$$

$$S_f = \alpha_f P_f^{\eta_f} \tag{5}$$

where S_d and S_f are domestic supply and fair import supply, respectively, and α_d, α_f, η_d, and η_f are all positive constants.

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[126] See Armington (1969), p. 169. Also see Morkre (1984), p. 64. Note that we define ε_A to be a negative number while Armington defined it as a positive number.

III. Estimating the Effect of Unfair Imports Assuming Full Pass Through

The assumption of full pass through means that, in order that there be no more unfair imports, the price of the imports in question must increase by the amount of the (dumping or subsidy) margin M, as computed by the Department of Commerce. We therefore have

$$P_u^* = P_u (1 + M) \tag{6}$$

where P_u^* is the price that the unfair imports would have to be in the United States to not be unfairly traded under the full pass through assumption.

A change in the price for unfairly traded imports will in turn change the equilibrium prices and quantities for the other products in the model. Our objective in this study is to measure these changes, in order to know what the effect of a given unfair trade practice has been. This was done using a computer program, written in the GAMS language.[127]

The computer model takes as inputs the margin M, the prices and quantities P_d, P_u, P_f, Q_d, Q_u, and Q_f, and the elasticities ε_A, σ, η_d, and η_f. With this data, all of the other parameters of the model can be computed.

We begin by computing the constants α_d and α_f, which are

$$\alpha_d = Q_d / P_d^{\eta_d},$$

$$\alpha_f = Q_f / P_f^{\eta_f},$$

The constants b_d, b_u and b_f can be computed by noting that in equilibrium the marginal rate of substitution between competing products must equal the ratio of their prices, and so:

$$\frac{(\partial Q_A/\partial Q_u)}{(\partial Q_A/\partial Q_d)} = (b_u / b_d)(Q_d / Q_u)^{(1+\rho)} = P_u / P_d$$

[127] GAMS is a high level computer language designed for the construction and solution of mathematical programming models.

$$\frac{(\partial Q_A/\partial Q_f)}{(\partial Q_A/\partial Q_d)} = (b_f/b_d)(Q_d/Q_f)^{(1+\rho)} = P_f/P_d$$

We can therefore solve for b_u and b_f in terms of b_d as:

$$b_u = b_d (P_u/P_d)(Q_u/Q_d)^{(1+\rho)}$$

$$b_f = b_d (P_f/P_d)(Q_f/Q_d)^{(1+\rho)}$$

These relationships, together with the fact that $b_d + b_u + b_f = 1$ allows us to solve for b_d as a function of prices, quantities, and ρ:

$$b_d = [1 + (P_u/P_d)(Q_u/Q_d)^{(1+\rho)} + (P_f/P_d)(Q_f/Q_d)^{(1+\rho)}]^{-1}$$

Knowing b_d in turn allows us to compute b_u and b_f from the equations above.

Knowing b_d, b_u and b_f allows us to compute Q_A and P_A. The constant α_A can then also be computed:

$$\alpha_A = Q_A P_A^{-\varepsilon_A}$$

Knowledge of all of the parameters allows us to identify the model consisting of equations 1 through 6. The equilibrium of this model is solved using the GAMS/MINOS solver.[128]

The full pass through estimates are computed in four stages. In Stage I, the elasticity of aggregate demand ε_A is taken to be -.01, the elasticity of substitution σ is taken to be 9, and the elasticity of fair import supply η_f is assumed to be zero. The elasticity of domestic supply is assumed to be 10 for manufactured products, .4 for livestock products, .32 for forestry and fishery products, .3 for other agricultural products, and .2 for mineral products. The low (absolute) value for ε_A means that aggregate demand for the product is little affected by price. Lower import prices do not therefore expand the market, but only take sales away from the domestic product. The high value for σ means that imports and domestic products

[128] The GAMS language can utilize various solvers which are separate modules from the language itself. GAMS/MINOS is one of these solvers. Two important features of the GAMS language are (i) that it allows modelers to concentrate on the construction of modeling, rather than having to worry about solution algorithms, and (ii) that it permits model descriptions that are independent of these algorithms.

are close substitutes and so domestic demand will be very sensitive to changes in import prices. The zero elasticity of fair import supply means that only the price and not the quantity of fair imports will change in response to changes in unfair import prices.

In Stage II, the elasticity of fair import supply is assumed to equal that for domestic supply. This change reduces the impact of unfair trade practices on the domestic industry because some of that impact is now borne by fair imports.

In Stages III and IV, the extreme assumptions about the elasticity of aggregate demand and the elasticity of substitution are, respectively, replaced by estimated values that are unique for each investigation.

IV. Estimating the Effect of Dumped Imports Assuming Partial Pass Through

If subsidized imports are supplied by a foreign industry with a perfectly elastic supply curve, then eliminating the subsidy will cause the price of those imports to rise by the amount of the subsidy. Therefore, under these assumptions, the full pass through approach used above will be appropriate.

In some cases of dumping, the full pass through approach will overestimate the effect on the domestic industry. As discussed in Chapter II, dumping occurs when an imported product is sold in the United States (i) at less than its cost of production or (ii) at less than its price in its home market (or in a third country).

In the latter case, dumping is eliminated by charging the same price in both countries. This can be accomplished by raising the price of the dumped imports in the United States by the amount of the dumping margin (which is the full pass through assumption). However, we would expect a profit maximizing firm that previously could price discriminate, but now cannot, to lower its home market price as well as increase its U.S. price. If dumping is eliminated, the U.S. price of unfair imports will therefore increase by less than the amount of the dumping margin. Hence, the effect of unfair imports on domestic industries will be less than that implied by the full pass through assumption.

To refine our estimates, we relax the assumption of full pass through, and model the unfair imports as being produced by a single firm. This firm, protected from competition in its home market, acts as a monopolist, setting its price P_h and selling a quantity Q_h in this market. In its sales to the U.S., it acts as a dominant firm, setting its price P_u so as to maximize its profits given the supply behavior of the competitive fringe, which consists of the domestic industry and the fairly traded imports.

Demand in the home market is assumed to take the constant elasticity form so that:

$$D_h = \alpha_h P_h^{\varepsilon_h}$$

This firm is assumed to have a cost function that can be approximated by the linear relationship

$$C(Q_u) = cQ_u + F$$

where C is total cost, and c and F are positive constants. This assumption implies that in the relevant range of possible output levels the unfair import producer's marginal costs are constant.

We can express the pricing and output decisions of the unfair importer as a non-linear programming problem:

$$\underset{P_u,\, P_h}{\text{Maximize}}\ P_u D_u(P_d,P_u,P_f) + P_h D_h(P_h) - c\,[D_u(P_d,P_u,P_f) + D_h(P_h)] - F$$

Differentiating with respect to P_u and P_h, respectively, and setting the results equal to zero gives the following first order conditions:

$$[\ (\partial D_u / \partial P_u) + (\partial D_u / \partial P_d)(\partial P_d / \partial P_u) + (\partial D_u / \partial P_f)(\partial P_f / \partial P_u)\ ]\ (P_u - c) + D_u = 0$$

$$(P_h - c)(\partial D_h / \partial P_h) + D_h = 0$$

which we can then solve for P_u and P_h:

$$P_u = \frac{c}{1 + [\varepsilon_u + \varepsilon_{ud}(P_u/P_d)(dP_d/dP_u) + \varepsilon_{uf}(P_u/P_f)(dP_f/dP_u)]^{-1}}$$

$$P_h = \frac{c}{1 + 1/\varepsilon_h}$$

To compute the two total derivatives in the expression for P_u we take advantage of the equilibrium conditions:

$$D_d = S_d$$

$$D_f = S_f$$

Taking derivatives of these equations with respect to P_u gives:

$$(\partial D_d/\partial P_d)(dP_d/dP_u) + (\partial D_d/\partial P_u) + (\partial D_d/\partial P_f)(dP_f/dP_u) = (\partial S_d/\partial P_d)(dP_d/dP_u)$$

$$(\partial D_f/\partial P_d)(dP_d/dP_u) + (\partial D_f/\partial P_u) + (\partial D_f/\partial P_f)(dP_f/dP_u) = (\partial S_f/\partial P_f)(dP_f/dP_u)$$

Which allows us to solve for dP_d/dP_u and dP_f/dP_u in terms of the partial derivatives:

$$dP_d/dP_u = \frac{(-\partial D_d/\partial P_u)[(\partial D_f/\partial P_f) - (\partial S_f/\partial P_f)] + (\partial D_d/\partial P_f)(\partial D_f/\partial P_u)}{[(\partial D_d/\partial P_d) - (\partial S_d/\partial P_d)][(\partial D_f/\partial P_f) - (\partial S_f/\partial P_f)] - (\partial D_f/\partial P_d)(\partial D_d/\partial P_f)}$$

$$dP_f/dP_u = \frac{(-\partial D_f/\partial P_u)[(\partial D_d/\partial P_d) - (\partial S_d/\partial P_d)] + (\partial D_d/\partial P_u)(\partial D_f/\partial P_d)}{[(\partial D_d/\partial P_d) - (\partial S_d/\partial P_d)][(\partial D_f/\partial P_f) - (\partial S_f/\partial P_f)] - (\partial D_f/\partial P_d)(\partial D_d/\partial P_f)}$$

This allows us to express c as:

$$c = P_u \left[1 + \left[\varepsilon_u + \frac{\varepsilon_{ud}[\varepsilon_{df}\varepsilon_{fu} - \varepsilon_{du}(\varepsilon_f - \eta_f)] + \varepsilon_{uf}[\varepsilon_{du}\varepsilon_{fd} - \varepsilon_{fu}(\varepsilon_d - \eta_d)]}{(\varepsilon_d - \eta_d)(\varepsilon_f - \eta_f) - \varepsilon_{fd}\varepsilon_{df}} \right]^{-1} \right]$$

From the first order conditions and the fact that $P_h = P_u(1+M)$ we can solve for ε_h :

$$\varepsilon_h = P_u(M + 1) \; / \; [c - P_u(M + 1)]$$

With a numerical value for ε_h, a numerical value for α_h can be computed.

The above relationships allow us to compute all of the parameters of the model, given data on prices, quantities, aggregate elasticity of demand in the U.S., the elasticity of substitution in the U.S., domestic and fairly traded elasticity of supply, and sales in the unfair firm's home market. By identifying the parameters, it is possible to solve a new non-linear programming problem to determine the foreign monopolist's profit maximizing price to charge when it cannot price discriminate between markets. We do so using the GAMS program with the MINOS solver.

V. Possible Biases of the Estimates

Throughout our study, we compute upper bound estimates of the impact of unfair imports on domestic industries. These bounds are successively lowered at each stage. However, it is important to remember that the estimates are just that, upper bounds, and that as such they overstate the actual effect of unfair trade practices upon domestic industries. There are several reasons why this is the case.

First, the estimates depend upon the data as measured and reported by Commerce and the ITC. As discussed in the main body of the text, it is widely recognized that the methodologies used by Commerce to compute the countervailing duty and dumping margins may be significantly biased upwards. These biases make it is possible for Commerce to find a significant countervailing duty margin when subsidies have no economic impact upon domestic firms, and for Commerce to find a significant dumping margin even when the foreign firm is charging the same prices in its home and its export markets. Since the margins are inversely related

to the performance of domestic industries, upwardly biased margins will result in injury estimates that are themselves upwardly biased.

A related issue is market structure. Throughout this study, we model the domestic industry as being perfectly competitive, and the victim of unfair practices by foreign firms that behave as monopolists. This combination of assumptions maximizes the impact of unfair imports upon the domestic industry.[129]

This market structure is, however, often at considerable variance with reality. There are several unfair import cases involving a single firm that is the sole or dominant domestic producer of an article, or only a few firms in an oligopoly industry. These cases also often involve foreign industries that are highly fragmented, and/or involve firms from several different countries. Such circumstances would tend to make it more difficult for foreign firms to coordinate their activities sufficiently to behave as the tight cartels that our assumptions imply. These circumstances appear to be inconsistent with international price discrimination with large dumping margins.

Finally, dumping and subsidy margins are computed by Commerce on the value of the product at the (foreign) factory gate. The price of the product sold in the United States will be the price at the factory gate plus the costs of transportation, which can include freight, insurance, and any existing tariffs. Although some of these costs will be proportional to the value of the product, others will not. Because of this, when the price of an unfairly traded good is raised by the amount of the margin at the factory gate, the price of the good in the United States will increase by proportionally less than the margin. Given our interest in estimating upper bounds for injury to the domestic industry, our methodology assumes that prices in the United States rise by the amount of the margin. This therefore overstates the effect of unfair trade practices on the domestic industry.[130]

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[129] Furthermore, it also appears to be a belief shared by many who support laws against unfair imports. For a recent elaboration of this point, see for example Wood (1989), p. 1167f.

[130] As indicated in section I, our model assumes that the aggregate product is a CES function of domestic product, unfair imports, and fair imports (if any). This is the Armington assumption, which assumes differentiation of product by country of origin. Recently, the Armington assumption has come under criticism because it implies a greater degree of national monopoly power than may be appropriate. See, for example, Brown (1987). An alternative approach is to assume, following Spence (1976) and Dixit and Stiglitz (1977), that each firm produces a differentiated product. The purpose of this note is to show that, for purposes of the present study, the Armington assumption does not yield biased injury estimates compared to the injury estimates obtained using the Spence-Dixit-Stiglitz approach.

Since the two approaches differ only with respect to product differentiation, to compare them it is important to keep other features of the model the same. Specifically, we assume that marginal costs (of the industry or of firms) are constant. To simplify matters, we also assume fair imports are zero.

(continued...)

[130](...continued)

As shown in section I, under the Armington assumption the aggregate product (in the absence of fairly traded imports) is

$$Q_A = [b_d Q_d^{-\rho} + b_u Q_u^{-\rho}]^{-1/\rho} \tag{B1}$$

and the demand for the domestic product is

$$D_d(P_d,P_u) = b_d^{\sigma} Q_A (P_d / P_A)^{-\sigma} \tag{B2}$$

Since P_d equals constant marginal cost, total revenue, R_d, is

$$R_d = P_d Q_d = b_d^{\sigma} Q_A P_d^{1-\sigma} P_A^{\sigma} \tag{B3}$$

and proportional differentiation gives

$$\hat{R}_d = \hat{Q}_A + \sigma \hat{P}_A = (\sigma - \varepsilon_A)\gamma_u \hat{P}_u \tag{B4}$$

since

$$Q_A = \alpha_A P_A^{\varepsilon_A}, \quad P_A = \gamma_d P_d + \gamma_u P_u,$$

and assuming quantity units are defined so that initial prices are unity.

Under the Spence-Dixit-Stiglitz approach to product differentiation (see e.g., Brown (1992), Helpman and Krugman (1989), chap. 7), aggregate product is also a CES function

$$Q_A = [b_d n_d (q_d)^{-\rho} + b_u n_u (q_u)^{-\rho}]^{-1/\rho} \tag{B5}$$

where there are n_d representative domestic firms and n_u representative foreign firms. Each firm is assumed to be a monopolistic competitor.

It can be shown that the demand facing a representative domestic firm is the same as equation (B2). Each firm's perceived demand elasticity is σ. Domestic industry revenue is

$$r_d = n_d p_d q_d = n_d b_d^{\sigma} Q_A p_d^{1-\sigma} P_A^{\sigma} \tag{B6}$$

The profit-maximizing price for each firm is $MC[\sigma/(\sigma-1)]$, where MC is marginal cost. In the short run, with n_d fixed, the proportionate change in domestic industry revenue is the same as in equation (B4). In the long run, with n_d variable, each firm earns zero profit and produces $q_d = F(\sigma-1)/MC$, where F is fixed cost. In this case, the percent change in domestic industry revenue equals the percent change in the number of domestic firms.

This analysis shows that the measured effect of unfair trade practices on a domestic industry is the same under the Armington assumption and under product differentiation by firm.

APPENDIX C

SIMULATION OF FOUR DEMAND-SIDE FACTORS AND FAIR IMPORTS

This appendix applies the model presented in Appendix B to simulate the effect of unfair imports on the demand for the domestic product using alternative values for the demand parameters, market shares of domestic and imported products, and dumping/subsidy margins. The results of the simulations are given in Table 3A.1.

Table 3A.1 is organized as follows. We allow for two possible margins (5 percent and 25 percent) and two possible market shares for the domestic product (80 percent and 60 percent). In all cases, we assume the initial market share of fair imports is 10 percent. This leads to four alternative cases. The four cases are indicated by the rows designated by A (low margin; high initial domestic product share), B (low margin; low initial domestic product share), C (high margin; high initial domestic product share), and D (high margin; low initial domestic market share). Note that the numerical values for the initial quantities are also percent market shares.

The first row for each case (A1, B1, C1, or D1) indicates the initial situation, prior to dumping or subsidization of imports. The effect of unfair imports on the quantity demanded of the domestic product is shown under column (2).

The second through fifth rows for each case indicate the quantitative effects of unfair imports as each of three elasticity parameters is changed successively. The three elasticity parameters are the degree of flexibility (or elasticity) of: (1) fair imports, (2) the demand for the composite good, and (3) the degree of demand substitution between domestic product and imports. The degree of flexibility for the parameters is indicated at the right of the table, in columns (6) through (8). Moving down the rows, the values assigned to the parameters change so that the adverse effect of unfair imports on the demand for domestic product lessens. Thus, the assumptions underlying rows 2 yield the largest adverse effects on the demand for the domestic product and the assumptions underlying rows 5 yield the smallest adverse effect.

TABLE 3A.1

SIMULATION OF DEMAND-SIDE EFFECTS CAUSED BY UNFAIR IMPORTS

Row	(1) Description of Experiment	(2) Domestic Shipments	(3) Imports from Potentially Unfair Suppliers	(4) Fair Imports	(5) Dumping/ Subsidy Margin	(6) Fair Imports Rigid/ Flexible#	(7) Aggregate Demand Elasticity*	(8) Degree of Substitution between domestic and imported Products**
A1	Initial data (no unfair imports)	80	10	10	NR	NR	NR	NR
A2	unfair imports (low share, low margin)	75.5	14.6	10	5%	Rigid	Very Low	Very High
A3	Unfair imports (low share, low margin)	75.7	14.7	9.6	5%	Flexible	Very Low	Very High
A4	Unfair imports (low share, low margin)	76.3	14.8	9.6	5%	Flexible	Moderate	Very High
A5	Unfair imports (low share, low margin)	79.2	11.5	9.9	5%	Flexible	Moderate	Moderate
B1	Initial data (no unfair imports)	60	30	10	NR	NR	NR	NR
B2	Unfair imports (high share, low margin)	50.8	39.4	10	5%	Rigid	Very Low	Very High
B3	Unfair imports (high share, low margin)	51.5	40.0	8.8	5%	Flexible	Very Low	Very High
B4	Unfair imports (high share, low margin)	52.4	40.6	8.9	5%	Flexible	Moderate	Very High
B5	Unfair imports (high share, low margin)	58.2	33.7	9.7	5%	Flexible	Moderate	Moderate

TABLE 3A.1

SIMULATION OF DEMAND-SIDE EFFECTS CAUSED BY UNFAIR IMPORTS--CONTINUED

Row	(1) Description of Experiment	(2) Domestic Shipments	(3) Imports from Potentially Unfair Suppliers	(4) Fair Imports	(5) Dumping/ Subsidy Margin	(6) Fair Imports Rigid/ Flexible#	(7) Aggregate Demand Elasticity*	(8) Degree of Substitution between domestic and imported Products**
C1	Initial data (no unfair imports)	80	10	10	NR	NR	NR	NR
C2	Unfair imports (low share, high margin)	48.8	45.5	10	25%	Rigid	Very Low	Very High
C3	Unfair imports (low share, high margin)	50.6	47.2	6.8	25%	Flexible	Very Low	Very High
C4	Unfair imports (low share, high margin)	53.3	49.6	7.1	25%	Flexible	Moderate	Very High
C5	Unfair imports (low share, high margin)	75.7	18.5	9.5	25%	Flexible	Moderate	Moderate
D1	Unfair imports (no unfair imports)	60	30	10	NR	NR	NR	NR
D2	Unfair imports (high share, high margin)	20.0	74.7	10	25%	Rigid	Very Low	Very High
D3	Unfair imports (high share, high margin)	21.4	79.7	4.2	25%	Flexible	Very Low	Very High
D4	Unfair imports (high share, high margin)	24.0	89.4	5.0	25%	Flexible	Moderate	Very High
D5	Unfair imports (high share, high margin)	51.3	50.1	8.6	25%	Flexible	Moderate	Moderate

Notes: These simulations use the model described in the appendix.
NR = not relevant.
# Supply elasticity is zero for rigid, 50 for flexible.
* Very low is -0.01, moderate is -1.
** For the elasticity of substitution, very high is 9, moderate is 3.

Source: Bureau of Economics, FTC.

The effect of flexibility of fair imports is revealed by comparing rows 1, 2, and 3 (for all four data cases). When fair imports are flexible, their supply to the domestic market contracts when there are unfair imports, and this lessens the adverse impact on the domestic industry. For example, in data case C, the reduction in demand for the domestic product is from 80 to 50.6 if fair imports are flexible versus a reduction from 80 to 48.8 units if fair imports are inflexible.

The influence of the price sensitivity by consumers for the group product is shown by comparing rows 3 and 4 for all four data cases. In each instance, a higher price sensitivity involves a smaller impact of unfair imports on demand for domestic product. This factor becomes more important as the dumping/subsidy margin and unfair import share both increase. Therefore, as price sensitivity of consumers for the product group increases, the adverse impact of unfair imports on domestic industry declines.

Finally, the influence of the degree of demand substitution between domestic and imported products is seen by comparing rows 4 and 5 for all four data cases. This factor has a particularly strong impact on domestic demand. For example, rows D4 and D5 show that demand for domestic products increases substantially, from 24.0 to 51.3, when the degree of substitution changes from very high to moderate. Thus, the severity of the impact of unfair imports on the demand for the domestic product is positively associated with the degree of demand substitution.

Given the share of unfair imports, the effect of the size of the dumping or subsidy margin on demand for domestic product is shown by comparing rows A5 and C5 or by comparing rows B5 and D5 (assuming a moderate degree of substitution between domestic and imported products). The first comparison shows that demand for domestic product declines from 80 units to 79.2 units when M is 5 percent. But demand declines from 80 units to 75.7 units when M is 25 percent.[131] Thus, the extent of the decline in demand for domestic product is positively associated with the dumping/subsidy margin.

Given the dumping/subsidy margin, the effect of unfair import market share is shown by comparing rows A5 and B5 or by comparing rows C5 and D5 (assuming a moderate degree of substitution between domestic and imported products). For the first comparison, domestic demand declines from 80 units to 79.2 units when the share of unfair imports is low. The corresponding decline is from 60 units to 58.2 units when the unfair import share is high. In the second comparison, domestic demand declines from 80 units to 75.7 units when the share of unfair imports is low. The corresponding decline is from 60 units to 51.3 units

[131] Comparing rows B5 and D5, demand for domestic product declines from 60 to 58.2 when M is 5 percent but declines from 60 to 51.3 when M is 25 percent.

when the unfair import share is high. Thus, the relative decline in demand for domestic product is positively associated with unfair import share, and this effect is magnified as the dumping/subsidy margin increases.

The rationale underlying the interaction between the unfair import share and the dumping/subsidy margin is that the impact of unfair imports on domestic industry is proportional to the initial share, or presence, of unfair imports in the domestic market. Relatively more consumers who initially purchase the domestic product will attempt to switch to unfair imports when the initial share of unfair imports is high because the latter appear to be more readily available.[132]

To summarize, the simulations indicate that the adverse impact of unfair imports is compounded by the interaction between the dumping/subsidy margin and the share of unfair imports when both are relatively large. Further, an especially important role is found for the degree of demand substitution between domestic and imported products.

[132] More precisely, this is a result of our demand structure where the aggregate good is a constant elasticity of substitution function of the domestic product, unfair imports, and fair imports. With this structure, the cross elasticity of demand for the domestic product with respect to price of the unfair imports is proportional to the initial share of unfair imports. See Appendix B for a discussion of this issue.

APPENDIX D

ELASTICITIES AND OTHER DATA USED TO ESTIMATE EFFECTS OF UNFAIR IMPORTS ON DOMESTIC INDUSTRY

As discussed in Appendix B, the estimation of the magnitude of the effects of dumped or subsidized imports on domestic industries in ITC cases requires certain elasticities. This Appendix explains how these elasticities were obtained. We also present the data used to calculate partial pass through of the dumping margin.

I. Elasticities

Four elasticities are required. They are: (1) the supply elasticity for the domestic industry, η_d, (2) the import supply elasticity for fair imports (imports that are not dumped or subsidized), η_f, (3) the domestic demand elasticity for the aggregate product group (comprising domestic and imported products), ε_A, and (4) and the elasticity of substitution in demand between domestic and imported products, σ.

As explained in Chapter 4, we provide four sets of results, i.e., stages I through IV. Specifically, we examine how the upper bound for estimated injury to the domestic industry changes as we proceed through a step by step process of systematically incorporating more appropriate values for the various elasticities. In stage I, we use the appropriate value for η_d, but set $\eta_f = 0$, $\varepsilon_A = -0.01$, and $\sigma = 9$. These assumed values maximize the estimated injury to domestic industry. In stage II, the only change from stage I is to set $\eta_f = \eta_d$. Import supply is expected to be at least as elastic as domestic supply because import supply is the difference between foreign supply and foreign demand. In stage III, the only change from stage II is to use a more appropriate value for ε_A. Finally, in stage IV, the only change from stage III is to use a more appropriate value for σ.

Demand elasticities (ϵ_A and σ). The demand elasticity values used in this report are based on estimates developed by ITC staff or on econometric estimates available in the literature. The elasticity estimates developed by ITC staff are especially important because ITC staff focusses on the product and time period relevant to each case.[133]

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[133] Typically, ITC staff does not estimate econometrically the elasticities in dumping or subsidy cases. This is primarily because ITC staff usually has too few observations to work with and operates under a very tight time schedule. Instead, ITC staff employs an iterative procedure starting with initial econometric estimates available from the literature. It then seeks information and comments from experts involved in the case that are used to revise the initial estimates. Note that ITC staff only started providing elasticity estimates for unfair trade cases in November 1987, for the dumping case involving Neoprene Laminate from Taiwan (investigation no. 731-TA-371, case number 20320).

For cases where elasticity estimates are not available from ITC staff, we rely on econometric estimates available in the literature, primarily from Coursey and Taylor (1982), Reinert and Roland-Holst (1992), and Shiells, Stern and Deardorff (1986). The products involved in ITC cases are often very specific. We match as closely as possible the products involved in ITC cases with the broader product categories typically used by econometricians. For some cases the match was not sufficiently close and, therefore, an appropriate elasticity value was not available. However, for a few of the cases for which appropriate elasticity values were not directly available, it was possible to derive elasticity values from estimates for related products together with other information.

Table 4A.1 gives the values and sources for the demand elasticities used in this report. When a range is shown for ε_A, we use the smaller (absolute value) number in our calculations in order to provide upper bound estimates. Similarly, when a range is shown for σ, we use the larger number. NA indicates that an elasticity value for the case was not available.

Supply elasticities (η_d and η_f). For cases involving manufactured products we use a domestic supply elasticity of 10. If there is sufficient time for firms to respond, it is generally found that domestic industries can expand output (e.g., modifying or adding to existing plant and equipment) without causing an appreciable increase in unit costs. This is supported by the empirical work of Richardson and Mutti (1976) and by Walters (1963).[134] Furthermore, this is also supported by ITC staff for those cases where the information is available. However, ITC staff uses a one year time horizon whereas our focus is on longer term adjustment. Accordingly, the supply elasticity values reported by ITC staff are, in a few cases, smaller than 10.[135]

For cases involving mining products, we use a domestic supply elasticity of 0.2. This is based on Richardson and Mutti (1976).

For agriculture, the supply elasticity used varies with type of product. We use 0.40 for livestock products, 0.30 for other agricultural products, and 0.32 for forestry and fishery. These elasticity values are from Tweeten (1970).
TABLE 4A.1

[134] For a recent discussion of empirical studies of supply, see the intermediate microeconomics text by Mansfield (1991), pp. 202-208.

[135] There are five cases where the domestic supply elasticity reported by ITC staff is smaller than 10. In electrical conducting aluminum redraw rod (cases nos. 21031 and 21032) ITC staff reported the domestic supply elasticity to be between 1 and 5 (ITC Memorandum EC-L-251, 7/26/88), in brass sheet and strip (case no. 20990) the reported elasticity was between 1 and 5 (ITC Memorandum EC-L-238, 7/27/88), in nitrile rubber (case no. 20900) the reported elasticity was greater than 5 (ITC Memorandum EC-L-166, 5/27/88), and in color picture tubes (case no. 20460) the reported elasticity was reported to be toward the upper limit of the range 5 to 10 (ITC Memorandum EC-K-471, 12/11/87).

TABLE 4A.1

ELASTICITIES FOR "LARGE" CASES: CASES WHERE UNFAIR IMPORTS CAUSE REVENUE LOSS OF 10 PERCENT OR MORE TO DOMESTIC INDUSTRY UP THROUGH STAGE II

Case Number/Product	Aggregate Demand Elasticity	Elasticity of Substitution
10461/Spun acrylic plied yarn	-0.8 to -1.2 Estimates from ITC Memorandum INV-N-101, 9/4/90 (demand elasticity for manmade fiber sweaters between -2 and -3) and estimate by ITC staff (percent of manmade fiber sweater cost accounted for by acrylic yarn is 40 percent).	0.54 to 2.58. Estimates from Reinert and Roland-Holst for yarn, thread, and broadwoven fabric mills, and from Shiells, Stern, Deardorff (1986) for textiles.
10470/Refined sugar	-0.05 to -0.23. Estimates from Huang (1985) and Gardiner et al. (1989).	5. Estimate from Hanson et al. (1989).
10820/Canned hams and shoulders	-0.73 to -0.89. Estimates for pork, from Huang (1985) and Gardiner et al. (1989).	1.68 to 5. Estimates from Reinert and Roland-Holst for meat packing plants and prepared meats, and from ITC Memorandum EC-M-315, 8/24/89 for fresh, chilled, or frozen pork.
12280/12 volt motorcycle batteries	-1.56. Estimate for tires, tubes, accessories, and parts, from Coursey and Taylor (1982).	2 to 4. Estimates from ITC Memorandum EC-M-287, 8/4/89.

TABLE 4A.1

ELASTICITIES FOR "LARGE" CASES: CASES WHERE UNFAIR IMPORTS CAUSE REVENUE LOSS OF 10 PERCENT OR MORE TO DOMESTIC INDUSTRY UP THROUGH STAGE II--Continued

Case Number/Product	Aggregate Demand Elasticity	Elasticity of Substitution
12500/Fireplace mesh panels	-1.16. Estimate for durable house furnishings NEC, from Coursey and Taylor (1982).	0.74 to 1.54. Estimates from Reinert and Roland-Holst (1991) for fabricated metal work, and from Shiells, Stern, and Deardorff (1986) for metal products (excluding machinery).
14310/Shop towels	-0.34. Estimate for textiles from Hufbauer et al. (1986).	0.54 to 2.58. Estimates from Reinert and Roland-Holst for yarn, thread, and broadwoven fabric mills, and from Shiells, Stern, Deardorff (1986) for textiles.
14541/Carton closing staples	NA.	NA.
14542/Non-automatic carton closing staple machines	NA.	NA.
14630/Fall harvested round white potatoes	-0.37. Estimate for potatoes, from Huang (1985).	3.6. Estimate obtained from upper bound for import demand elasticity for agriculture (-3.45) from Stern, Francis, and Schumacher (1976), share of unfair imports in consumption (4 percent) from ITC report 1463, 12/83.

TABLE 4A.1

ELASTICITIES FOR "LARGE" CASES: CASES WHERE UNFAIR IMPORTS CAUSE REVENUE LOSS OF 10 PERCENT OR MORE TO DOMESTIC INDUSTRY UP THROUGH STAGE II--Continued

Case Number/Product	Aggregate Demand Elasticity	Elasticity of Substitution
15130/Cyanuric acid, dischloro and trichloro (isocyanurates)	NA.	NA.
17220/Tubular steel frame stacking chairs	-1.56. Estimate for furniture, mattresses, bedspreads, from Coursey and Taylor (1982).	NA.
17840/Photo albums and filler pages	-2.00. Estimate for books and maps, from Coursey and Taylor (1982).	NA.
18050/All paint brushes (both natural and synthetic filament bristles)	-0.60. Estimate for cleaning and polishing preparations, and miscellaneous household supplies and paper products, from Coursey and Taylor (1982).	NA.
18112/Heavy iron construction castings	NA.	3.08. Estimate for iron and steel foundries from Reinert and Roland-Holst (1991).
18182/Fuel ethanol	-4.74. Estimate for gasoline and oil, from Coursey and Taylor (1982).	NA.

TABLE 4A.1

ELASTICITIES FOR "LARGE" CASES: CASES WHERE UNFAIR IMPORTS CAUSE REVENUE LOSS OF 10 PERCENT OR MORE TO DOMESTIC INDUSTRY UP THROUGH STAGE II--Continued

Case Number/Product	Aggregate Demand Elasticity	Elasticity of Substitution
18450/Malleable cast-iron pipe fittings	-1. Estimates for stainless steel butt-weld pipe fittings from ITC Memorandum EC-L-057, 3/4/88.	3. Estimates for stainless steel butt-weld pipe fittings from ITC Memorandum EC-L-057, 3/4/88.
18620/64K DRAMS	-1.8. Estimate for 16K DRAMs, from Finan and Amundsen (1985).	NA.
18750/Raw-in-shell pistachio nuts	-0.12. Estimate for dried beans, peas, and nuts, from Huang (1985).	NA.
18880/Petroleum wax candles	-1.24. Estimate for lighting supplies, from Coursey and Taylor (1982).	NA.
19189/Carbon steel, butt-weld, pipe fittings	-1. Estimates for stainless steel butt-weld pipe fittings from ITC Memorandum EC-L-057, 3/4/88.	3. Estimates for stainless steel butt-weld pipe fittings from ITC Memorandum EC-L-057, 3/4/88.
19270/EPROMS	-1.8. Estimate for 16K DRAMs, from Finan and Amundsen (1985).	NA.

TABLE 4A.1

ELASTICITIES FOR "LARGE" CASES: CASES WHERE UNFAIR IMPORTS CAUSE REVENUE LOSS OF 10 PERCENT OR MORE TO DOMESTIC INDUSTRY UP THROUGH STAGE II--Continued

Case Number/Product	Aggregate Demand Elasticity	Elasticity of Substitution
19309/Brass sheet and strip	-1.7 to -3.4. Estimates from ITC Memorandum EC-L-238, 7/27/88.	1 to 3. Estimates from ITC Memorandum EC-L-238, 7/27/88.
19343/Awning operators	-1.16. Estimate for durable house furnishings NEC, from Coursey and Taylor (1982).	NA.
19344/Jalousie operators	-1.16. Estimate for durable house furnishings NEC, from Coursey and Taylor (1982).	NA.
19362/Top-of-stove stainless steel cooking ware	-1.62. Estimate for kitchen and other HH appliances, from Coursey and Taylor (1982).	2.69. Estimate for household cooking equipment, from Reinert and Roland-Holst (1991).
19389/Unfinished flat glass mirrors	-1.16. Estimate for durable house furnishings NEC, from Coursey and Taylor (1982).	3.83. Estimate for glass products, from Shiells, Stern, and Deardorff (1986)
19567/Gypsophila	-3.85. Estimate for flowers, seeds, and potted plants, from Coursey and Taylor (1982).	NA.

TABLE 4A.1

ELASTICITIES FOR "LARGE" CASES: CASES WHERE UNFAIR IMPORTS CAUSE REVENUE LOSS OF 10 PERCENT OR MORE TO DOMESTIC INDUSTRY UP THROUGH STAGE II--Continued

Case Number/Product	Aggregate Demand Elasticity	Elasticity of Substitution
19839/Tapered roller bearings and parts thereof	-0.1. Estimate for ball bearings, from Hufbauer, Berliner, and Elliott (1986).	0.83. Estimate for ball and roller bearings, transmission equipment, from Reinert and Roland-Holst (1991).
19920/Solid urea	-0.45. Estimate for nitrogen from Heady and Yeh (1959).	NA.
20049/Malleable threaded cast-iron pipe fittings	-1. Estimates for stainless steel butt-weld pipe fittings from ITC Memorandum EC-L-057, 3/4/88.	3. Estimates for stainless steel butt-weld pipe fittings from ITC Memorandum EC-L-057, 3/4/88.
20331/Seamless stainless steel pipe and tube	-0.5 to -1.2. Estimates from ITC Memorandum EC-K-437, 11/5/87.	1.45 to 3.05. Estimates from ITC Memorandum EC-K-437, 11/5/87.
20670/Stainless steel butt-weld pipe fittings	-1. Estimates from ITC Memorandum EC-L-057, 3/4/88.	1.45 to 3.05. Estimates from ITC Memorandum EC-L-057, 3/4/88.
20800/Bimetallic cylinders	-0.02 to -0.1. Estimates from ITC Memorandum EC-L-136, 5/3/88.	2 to 3. Estimates from ITC Memorandum EC-L-136, 5/3/88.

TABLE 4A.1

ELASTICITIES FOR "LARGE" CASES: CASES WHERE UNFAIR IMPORTS CAUSE REVENUE LOSS OF 10 PERCENT OR MORE TO DOMESTIC INDUSTRY UP THROUGH STAGE II--Continued

Case Number/Product	Aggregate Demand Elasticity	Elasticity of Substitution
20820/Internal combustion forklift trucks	-1.0 to -1.5. Estimates from ITC Memorandum EC-L-143, 5/6/88.	1 to 2. Estimates from ITC Memorandum EC-L-143, 5/6/88.
21032/Electrical conductor aluminum redraw rod	-0.1 to -0.5. Estimates from ITC Memorandum EC-L-351, 7/26/88.	1 to 3. Estimates from ITC Memorandum EC-L-251, 7/26/88.
21032/Electrical conductor aluminum redraw rod	-0.1 to -0.5. Estimates from ITC Memorandum EC-L-351, 7/26/88.	1 to 3. Estimates from ITC Memorandum EC-L-251, 7/26/88.
21100/Granite	-1.0 to -5.0. Estimates based on ITC Memorandum EC-L-263, 8/3/88.	1 to 5. Estimates based on ITC Memorandum EC-L-263, 8/3/88.
21120/Granular polytetrafluoroethylene resin (teflon)	-0.5 to -1.5. Estimates from ITC Memorandum EC-L-270, 8/31/88.	1 to 2. Estimates from ITC Memorandum EC-L-270, 8/31/88.

NA = not available.

II. Data to Calculate Partial Pass Through of Dumping

Of the 29 dumping cases that had large injury after stage II (Table 4.2), only 12 were pure price dumping cases. The other 17 cases involved, to varying degrees, constructed value or third country comparisons in order to determine fair value. We only attempted to calculate the partial pass though of dumping for the former 12 cases. They are listed in Table 4A.2.

Of the 12 cases, we were only able to obtain data on home market sales for five. They are marked by "#." As explained in the text, only in stainless pipe fittings (case no. 20670) did the adjustment for pass through make an appreciable difference to estimated injury. This is because it is the only instance where home market sales did not completely swamp exports to the United States. For a discussion of this issue, see Appendix B.

TABLE 4A.2

FAIR VALUE CASES WITH "LARGE" REVENUE EFFECTS IN STAGE II

Case No	Country	Year	Product	SIC	Shipments to Home Market	Exports to the U.S.
#10461	JAPAN	1978	Spun acrylic plied yarn	2281	*192530 metric tons	5576 metric tons
#14541	SWEDEN	1982	Carton closing staples	3496	*12.26 million (US$)	.94 million (US$)
#14542	SWEDEN	1982	Staple machines	3569	*141.26 million (US$)	.65 million (US$)
15130	JAPAN	1983	Cyanuric acid	2865	NA	NA
17220	ITALY	1984	Tubular steel frame chairs	2599	NA	45 billion lire
19309	KOREA	1985	Certain brass sheet & strip	3351	17424 metric tons	3400 metric tons
19309	FRANCE	1985	Certain brass sheet & strip	3351	NA	NA
19309	ITALY	1985	Certain brass sheet & strip	3351	NA	22 billion lire
19309	SWEDEN	1985	Certain brass sheet & strip	3351	*7053 metric tons	2033 metric tons
19309	WEST GERMANY	1985	Certain brass sheet & strip	3351	NA	NA
19309	CANADA	1985	Certain brass sheet & strip	3351	*501.70 million (Can$)	36.82 million (Can$)
19309	BRAZIL	1985	Certain brass sheet & strip	3351	NA	5797785 (US$)
19343	EL SALVADOR	1985	Awning operators	3429	NA	NA
19344	EL SALVADOR	1985	Jalousie operators	3429	NA	NA
#20049	THAILAND	1986	Malleable cast iron pipe fittings	3494	*4731 metric tons	4631 metric tons
#20049	JAPAN	1986	Malleable cast iron pipe fittings	3494	*88273 metric tons	11396 metric tons
#20670	JAPAN	1986	Pipe fitt, butt weld, stain steel	3494	9.44 million lbs	3.99 million lbs
20800	JAPAN	1987	Bimetallic cylinders	3559	*3.5 to 4.0 million	72469
21120	JAPAN	1987	Teflon	2821	*10031000 metric tons	22496 metric tons
21120	ITALY	1987	Teflon	2821	NA	421 million lire

NOTES: # Indicates data sufficient to calculate pass through effect.
* Domestic production (less exports) as shipment data are unavailable.
NA Data are not available.

Data obtained from U.S. Embassy officials in respective countries except as noted.
For case 20049 data obtained from ITC Report 2004, pp. A-9, A-31 and ITC Report 1987, p. A-10.
For case 20670 data otained from ITC memo EC-L-057, March 4, 1988.

SOURCE: Bureau of Economics, FTC.

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