An Agricultural Law Research Article

Applying Antidumping Law to Perishable Agricultural Goods

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The sixty-year-old American antidumping statute, now codified as part of the Tariff Act of 1930,[1] protects domestic industries from the "dumping" of foreign goods.[2] Under the Act, dumping occurs when foreign goods are sold in this country at "less than fair value."[3] A good has been sold at less than fair value when the price prevailing in either the exporter's home market or a third-country market exceeds its price in an American market.[4] The Act authorizes the imposition of antidumping duties on goods sold at less than fair value if such sales have caused, or threaten to cause, material injury to a domestic industry.[5]

Although restrictions on dumping have been justified on a number of grounds,[6] the legislative history of the antidumping statute and sound economic policy suggest that Congress was primarily concerned with predatory dumping — sales intended to secure monopoly power in an American market.[7] Reflecting this antipredatory orientation, the Act does not condemn all instances of price discrimination. Before comparing prices of imported goods with prices in foreign markets, the Commerce Department[8] makes a series of ad-

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1. 19 U.S.C. §§ 1202-1677g (Supp. III 1979). The antidumping law was formerly codified in the Antidumping Act of 1921, 19 U.S.C. §§ 160-171 (1976). The Trade Agreements Act of 1979, Pub. L. No. 96-39, 93 Stat. 144, amended the antidumping statute and recodifed it under the Tariff Act of 1930, *see* 19 U.S.C. §§ 1673-1677g (Supp. III 1979). The antidumping provisions of the Tariff Act "in large measure retain the substantive law of the 1921 Act." 45 Fed. Reg. 8182 (1980). Because of the close similarity of the new antidumping statute to the original version, this Note will occasionally refer to the legislative history of the 1921 Act.

2. Dumping is defined broadly as price discrimination between national markets. *See generally* J. VINER, DUMPING: A PROBLEM IN INTERNATIONAL TRADE (1923). The only kind of price discrimination the importing country is concerned with, however, is that in which the export price is lower than the foreign market price.

3. 19 U.S.C. § 1673 (Supp. III 1979). *See* text at notes 29-35 *infra*.

4. 19 U.S.C. § 1677b (Supp. III 1979). The act also reaches merchandise that is sold at prices below average cost, in appropriate circumstances. *See* text at notes 46-49 & 119-26 *infra*.

5. *See* 19 U.S.C. § 1673 (Supp. III 1979); text at note 22 *infra*.

6. For a summary of the various arguments for the restriction of dumping, see Barceló, *Antidumping Laws as Barriers to Trade — The United States and the International Antidumping Code*, 57 CORNELL L. REV. 491, 500-10 (1972).

7. *See* text at notes 92-100 *infra*. Under a predatory pricing scheme, a foreign firm sells at lower than its home market price — and lower than the prevailing domestic price — to drive competitors out of business. Once it has eliminated much of its competition, it will have attained market power enabling it to raise prices in the U.S. to levels higher than those that prevailed before the predatory action began. *See* Barceló, *supra* note 6, at 500.

8. With the exception of a few functions reserved to the Customs Service, responsibility for administering the antidumping law was transferred to the Department of Commerce from the Department of Treasury in early 1980, pursuant to an executive order by President Carter that coincided with the effective date of the Trade Agreements Act of 1979, Pub. L. No. 96-39, 93 Stat. 144. *See* Exec. Order 12,188, 45 Fed. Reg. 989 (1980). The subdivision within the Com-

justments to both sets of prices that may reduce or eliminate initial price differentials.[9] Even after these adjustments have been made, a less-than-fair-value finding will not result if only a small percentage of a producer's goods are dumped or if the price differentials are extremely small.[10]

Despite these safeguards against penalizing importers for innocent price variations, the traditional price comparison formula will too often yield a less-than-fair-value finding in cases involving perishable agricultural goods. Substantial variations in the price of perishable goods are common, and do not necessarily reflect predatory behavior. These price variations are a natural consequence of the peculiar supply, demand, and market conditions facing producers of perishable goods. But the traditional price comparison formula ignores these conditions. Application of this formula to cases involving perishable agricultural goods, therefore, could contravene the purpose of the Act.

The problems associated with applying antidumping law to agricultural commodities have not been thoroughly explored because most dumping cases have involved manufactured goods,[11] which, as a class, exhibit less price variation than agricultural goods.[12] But as the world economy becomes increasingly interdependent and American imports of perishable agricultural goods become more signifi-

merce Department that administers the antidumping law is the International Trade Administration. The Office of Investigations of the Import Administration is responsible for conducting antidumping investigations. This Note will use the term "Commerce Department" to refer to the body responsible for the administration of the Act.

9. *See* 19 U.S.C. § 1677b(a)(4) (Supp. III 1979); 19 C.F.R. §§ 353.14, 353.15, 353.16 (1981). The antidumping statute and regulations provide for adjustments for differences in quantities, physical characteristics, and circumstances of sale. The importance of the various adjustments to the ultimate disposition of the case is emphasized in Ehrenhaft, *What the Antidumping and Countervailing Duty Provisions of the Trade Agreements Act [Can] [Will] [Should] Mean for U.S. Trade Policy*, 13 LAW & POLICY INTL. BUS. 1361, 1366-67 (1974), where the author indicates that most antidumping cases will be won or lost on the basis of which price adjustments are allowed and which are not.

10. The price comparison procedures are not codified in the statutes or regulations. The Commerce Department, however, has to date used a *de minimis* standard for the determination of price discrimination or sales at less than fair value. This *de minimis* standard is consistent with the theory that price discrimination involving small absolute price differences or only a small fraction of imports does not manifest predatory intent and thus should not be subject to the possible imposition of dumping duties.

11. For a summary of all antidumping actions initiated between 1972 and 1977, see U.S. GAO, REPORT BY THE COMPTROLLER GENERAL OF THE UNITED STATES, U.S. ADMINISTRATION OF THE ANTIDUMPING ACT OF 1921, at 70 (1979) [hereinafter cited as GAO REPORT]. Of the 134 actions initiated in that period, only two involved agricultural products, and one of those actions involved a nonperishable agricultural good (canned pears). For a summary of the dollar value of imports that were the subject of antidumping actions for roughly the same period, see *Possible Amendments to the 1916 Antidumping Act, Hearing Before the Subcomm. on International Trade of the Senate Comm. on Finance*, 96th Cong., 2d Sess. 82-83 (1980) (imports in the "food and kindred products" category comprised .306 billion of the total 11.735 billion dollars worth of imports subject to antidumping actions).

12. *See* note 56 *infra*.

cant,[13] the antidumping law will probably be invoked more frequently against foreign agricultural producers.[14] One current example of such a case is *Certain Fresh Winter Vegetables from Mexico*[15] (*Mexican Vegetables*).

In *Mexican Vegetables*, the Commerce Department attempted to avoid some of the problems inherent in applying the traditional price comparison formula to perishable goods by using an alternative methodology.[16] This Note argues that the general sort of

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13. The United States is currently, and will be for the foreseeable future, a net exporter of agricultural goods. *See* R. KOHLS & J. UHL, MARKETING OF AGRICULTURAL PRODUCTS 130 (5th ed. 1980) (reporting agricultural trade balance [excess of exports over imports] of 12 billion dollars in 1976). The dollar value of agricultural imports increased from 5.8 billion in 1971 to 9.6 billion in 1975, an increase of 65%, *id.*, while the consumer price index for the same period increased only 29%. D. LEABO, BASIC STATISTICS 360 (table 12.1) (5th ed. 1976). Although some 40% of agricultural imports are classified as "complementary" — *i.e.*, they do not compete directly with U.S. agricultural goods — some 60% of agricultural imports "compete directly with domestically produced food products and are increasing relative to complementary agricultural imports." These directly competitive agricultural imports include meat, fruits and vegetables, and sugar. R. KOHLS & J. UHL, *supra*, at 140.

14. Among the few cases involving perishable agricultural commodities are Chicken Eggs in the Shell from Canada, 40 Fed. Reg. 16,687 (1975) (no less-than-fair-value sales found); Chicken Eggs in the Shell from Mexico, 36 Fed. Reg. 5387 (1971) (less-than-fair-value sales found); Concord Grapes from Canada, 34 Fed. Reg. 7460 (1969) (less-than-fair-value sales found).

Former Senator Stone of Florida suggested the possibility that future antidumping petitions might be brought regarding such perishables as "citrus from Brazil" and "avocadoes [and] fruits of all kinds from Caribbean countries, from Brazil . . . [and] from Asian countries coming into California." *See Nominations of Robert E. Herzstein, C. Moxley Featherston, William M. Fay, Charles R. Simpson, Edna Parker, and Sheldon V. Ekman, Hearings Before the Sen. Comm. on Finance*, 96th Cong., 2d Sess. 45-46 (1980) [hereinafter cited as *Herzstein Hearings*]. For an indication of the type and source of perishable fruit and vegetables currently being imported by the U.S., see generally FISCAL YEAR 1980, U.S. IMPORTS OF FRUITS AND VEGETABLES UNDER PLANT QUARANTINE REGULATIONS, MAR. 1981, at 1-19 (available from World Analysis Branch, Intl. Econ. Division, Econ. and Statistics Service, U.S. Dept. of Agriculture).

15. 44 Fed. Reg. 63,588 (1979) (tentative determination of sales at not less than fair value), 45 Fed. Reg. 20,512 (1980) (final determination of sales at not less than fair value).

The Mexican Vegetables antidumping investigation was initiated by several organizations representing Florida vegetable growers. The vegetable imports from Mexico subject to the investigation were tomatoes, eggplant, peppers, squash, and cucumbers. Although the Treasury Department originally had jurisdiction over the case, the Commerce Department took over when the executive order shifting international trade responsibilities to it became effective. *See* note 8 *supra*.

Mexican Vegetables attracted considerable attention in Washington and in the national press. *See, e.g., Rotten Tomato*, Wall St. J., July 2, 1979, at 12, col. 1; *Smashing OTEC*, Wall St. J., Mar. 14, 1980, at 22, col. 1; *Tomato Surprise*, Wall St. J., Mar. 26, 1980, at 22, col. 1. One executive branch policy-maker who took a keen interest in the case was Alfred Kahn, President Carter's chief inflation fighter. Dr. Kahn, who openly sided with the Mexican growers, made this memorable statement on their behalf while testifying before the Joint Economic Committee in April 1979: "We will pursue Mexican tomatoes until we get some real tomatoes to eat rather than those pieces of stone that [laughter] have the virtue that they can be picked up by machines but not eaten." *Monitoring Inflation: Hearings Before the Joint Economic Comm. of the Cong. of the U.S.*, 96th Cong., 1st Sess. 22 (1979) (statement of Alfred E. Kahn).

The case is currently on appeal. Southwest Florida Winter Vegetable Growers Association v. United States, No. 80-4-00577 (Ct. Intl. Trade, filed April 3, 1980).

16. The appropriateness of this test is one of the issues currently being contested on appeal.

econometric test relied on by the Commerce Department in *Mexican Vegetables* represents a clear improvement over traditional price comparison methodology. Part I outlines important procedural and substantive aspects of the antidumping enforcement scheme and identifies several features of the traditional methodology that increase the likelihood of a less-than-fair-value finding in cases involving substantial price variation. Part II analyzes the economic characteristics of perishable agricultural goods that often produce wide variations in their prices. Part III finds that both the legislative history of the antidumping statute and economic theory proscribe only predatory pricing behavior, and argues that in most cases the price variation associated with perishable agricultural products is normal rather than predatory. Finally, Part IV considers in some detail the various econometric[17] and statistical tests that might be used to remedy the deficiencies of the traditional price comparison formula.

I. ANTIDUMPING LAW

A. *Investigative and Duty Assessment Procedures*

The procedural regime of the antidumping law can be conveniently divided into investigative and duty assessment stages.[18] The modification that this Note proposes for the price comparison treatment of perishable agricultural commodities would apply only to the investigative stage. That stage is designed, broadly speaking, to uncover dumping that may injure an American industry. Before duties are imposed, the Commerce Department must find that sales at less than fair value are occurring, and the International Trade Commission (ITC)[19] must determine that these sales are causing, or threaten

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Another issue, which is outside the scope of this Note, involves the permissibility of ex parte contacts that allegedly took place between the White House and agency personnel involved in the disposition of the antidumping investigation.

17. *See* text at notes 133-68 *infra.* Broadly speaking, econometrics might be defined as the application of statistical techniques to economic problems. The relationship between economics and econometrics is summarized by one well-known econometrician as follows: "Economic theory is mainly concerned with relations among variables. . . . In fact, the entire body of economic theory can be regarded as a collection of relations among variables. . . . [E]conometrics is concerned with testing the theoretical propositions embodied in these relations, and with estimating the parameters involved." J. KMENTA, ELEMENTS OF ECONOMETRICS 197 (1971).

18. *Cf.* S. REP. NO. 249, 96th Cong., 1st Sess. 62, 75-79, *reprinted in* [1979] U.S. CODE CONG. & AD. NEWS 448, 461-65 [hereinafter cited as S. REP. NO. 249] (discussing the sections of the statute pertaining to the investigation and those which pertain to the duty assessment procedures).

19. The ITC will initially make a preliminary determination as to injury. *See* 19 U.S.C. §§ 1673a, 1673b(a), 1673d (Supp. III 1979). If the ITC preliminary investigation is negative, the investigation will be terminated. Otherwise, the investigation proceeds to a preliminary determination by the Commerce Department. An affirmative preliminary determination of sales at less than fair value will result in an order to suspend liquidation of all entries of merchandise subject to the determination. For each entry of merchandise, security shall be

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to cause, injury to an American industry.[20] At the investigative stage, both the less than fair value and the injury determinations are made at an industry-wide level. The Commerce Department compares numerous import and foreign market transactions in its less-than-fair-value inquiry,[21] and the ITC's injury determination considers the effect of allegedly dumped goods on an entire industry rather than on isolated firms.[22] If the investigative stage yields affirmative less-than-fair-value and injury determinations, an antidumping order will issue.[23] These orders apply to all foreign firms exporting merchandise of the class or kind subject to the order.

The duty assessment stage following the issuance of an antidumping order, however, is more specific in its operation. Antidumping orders require the Customs Service to determine the "U.S. price" of each entry of affected merchandise and to assess duties for shipments equal to the difference, if any, between the "for-

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posted to cover estimated antidumping duties. 19 U.S.C. § 1673b(d) (Supp. III 1979). Both agencies then proceed to final determinations. 19 U.S.C. § 1673d (Supp. III 1979).

20. *See* 19 U.S.C. § 1673 (Supp. III 1979).

21. Domestic manufacturers requesting the initiation of an antidumping investigation are required to submit with their application "[t]he name of the country or countries from which the merchandise is being, or is likely to be, exported to the United States." 19 C.F.R § 353.36 (1981), and "[t]he names and addresses of all known foreign enterprises believed to be manufacturing, producing or exporting the merchandise in question." 19 C.F.R. § 353.36(a)(6) (1981). The regulations provide that in making a less-than-fair-value determination, "the Secretary normally will examine at least 60% of the dollar volume of exports to the United States from any country subject to an antidumping investigation." 19 C.F.R. § 353.38(a) (1981). The extent of the foreign industry examined at the less-than-fair-value stage varies from case to case depending on various factors, including, presumably, the difficulty involved in collecting the relevant data. *Compare* Carbon Steel Plate from Japan, 42 Fed. Reg. 54,489 (1977) (notice of withholding of appraisement) (five companies comprising 70% of U.S. steel imports from Japan investigated), *with* Certain Fresh Winter Vegetables From Mexico, 44 Fed. Reg. 63,588, 63,589 (1979) (tentative determination) (less-than-fair-value determination based on data from 31 growers comprising 15-20% of U.S. vegetable imports held appropriate; no evidence that "enlargement of the sample would have altered the results of the investigation").

22. Pursuant to the Trade Agreements Act of 1979, Pub. L. No. 96-39, 93 Stat. 144 (codified in scattered sections of 5, 13, 19, 26, 28 U.S.C. (Supp. III 1979)), Congress formally altered the injury standard in antidumping actions. The current standard is "material injury"; the former standard was merely "injury." It is unclear, however, whether Congress actually intended that the ITC take a different approach to the injury determination inquiry.

Moreover, the precise scope of "industry" under the antidumping Act's injury inquiry is uncertain. The statute provides that injury to a "regional" industry is sufficient to support a positive injury finding, but the statute limits the application of a "regional injury" standard to situations where producers "sell all or almost all of their production of the like product in question in [the regional] market" and "the demand in that market is not supplied to any substantial degree by producers of the product in question located elsewhere in the United States." 19 U.S.C. § 1677(4)(C)(i)-(ii). A former Deputy Assistant Secretary of the Treasury Department suggests that, in some cases, the ITC might decline to find injury when the U.S. firms involved in the antidumping proceeding are not fairly representative of the industry at large. *See* Ehrenhaft, *supra* note 9, at 1380 n.68. For a comprehensive discussion of the injury standard, see Note, *Implementing the "Tokyo Round" Commitments: The New Injury Standard In Antidumping and Countervailing Duty Laws*, 32 STAN. L. REV. 1183, 1187-202 (1980).

23. 19 U.S.C. § 1673e(a) (Supp. III 1979).

eign market value" of "like merchandise" and the U.S. price.[24]
These antidumping duties are designed to offset precisely the effects
of dumping on a firm-by-firm and shipment-by-shipment basis.

The firm-specific duty assessment stage arguably corrects errors
introduced by the price comparison formula at the investigative
stage. If the investigative stage yields an incorrect finding of sales at
less than fair value, the duty assessment stage provides individual
firms an opportunity, at least in theory, to avoid antidumping duties
if they are not in fact selling at less than fair value.

The possibility that the duty assessment stage may exonerate in-
dividual firms not engaging in dumping, however, does not justify
the use of inadequate or inaccurate price comparison procedures at
the investigative stage. To conclude otherwise would stand the Act
on its head: It is the investigative stage, conducted under the aus-
pices of the Commerce Department and the ITC, that is intended to
detect the existence of dumping.[25] The duty assessment stage is
designed only to ascertain specific values for the antidumping duties
presumably owed by individual firms subject to an industry-wide
dumping order.[26] The sale-by-sale approach at the duty assessment
stage is a "complex, tedious and time consuming" procedure that

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24. 19 U.S.C. §§ 1673e, 1673h (Supp. III 1979).

In determining foreign market value for the purposes of assessing a duty on a particular
entry of merchandise from a given firm, the customs field officers will compare the price of the
entry with that of a *comparable* sale by the firm in the home or third market, whichever is
applicable, or, where appropriate, with "constructed value" for that firm. *See* Hemmendinger,
The Antidumping Act: Proposals for Change, 1 MICH. Y.B. INTL. LEGAL STUD. 124, 130 (1979)
("After the investigation is complete and a finding of dumping has been made, [the Commerce
Department] does not follow the averaging technique in assessing dumping duties, but looks
for a sale in the home market with which to compare each entry in the United States."). The
entry-by-entry duty assessment is performed with the aid of "master lists" prepared by the
Office of Compliance of the International Trade Administration at 12-month intervals follow-
ing the issuance of an antidumping order. Each master list indicates the U.S. price and foreign
market value on an item-by-item and period-by-period basis for the preceding 12 months. If
foreign market value varies, separate foreign prices will be given for individual months, weeks,
or even days, depending on the degree of variation. The U.S. price for a particular shipment
will be compared with the foreign market value corresponding to the date of import of the
shipment to determine the amount of the antidumping duty. *See* Interrogatory from John R.
Kugelman, Import Administration Specialist for the International Trade Administration,
Dept. of Commerce, to Michigan Law Review Association (Feb. 6, 1982) (on file with the
Michigan Law Review) [hereinafter cited as Kugelman Interrogatory]. During the 12-month
period preceding the issuance of the master list, the importer pays an estimated antidumping
duty; differences between actual duties and "estimated duties" are later refunded or paid as the
case may be. *See* 19 C.F.R. §§ 353.48, 353.50 (1981).

25. *See* note 19 *supra*.

26. All firms exporting from the country under investigation are subject to the antidump-
ing order unless they have been granted an exclusion. Under 19 C.F.R. § 353.45: "The Secre-
tary may exclude one or more foreign manufacturers, producers or exporters . . . if he finds
that all examined exports of the merchandise in question . . . were made at prices not less than
fair value. . . . Usually information on 100 percent of the exports will be required. . . . In
exceptional cases, the secretary may . . . [examine] a lesser percentage [but] . . . never less
than 75 percent."

should be avoided if not truly necessary.[27] Case-by-case error correction at this stage is likely to be quite costly. Foreign producers may revise prices upward to avoid the antidumping duties, reduce imports in response to the "chill" of an antidumping order, or forgo the American market entirely.[28] For these reasons, review at the duty assessment stage is unlikely to prevent investigative errors from reducing consumer welfare. The price comparison procedure used at the investigative stage, therefore, should be carefully tailored to signal correctly the existence of dumping, regardless of whether the duty assessment stage might function as a palliative for firms whose sales should not be subject to antidumping duties.

B. *Traditional Price Comparison Formula Used at the Investigative Stage*

Dumping occurs when "a class or kind of merchandise is being, or is likely to be, sold . . . at less than its fair value."[29] The Act does not define "fair value," but in practice fair value has been equated with "foreign market value,"[30] a term that the Act does define.[31] In the simplest case, foreign market value is derived from prices charged in the exporting country's home market for the same or similar merchandise.[32] But if there are too few usable sales in the foreign market to form an adequate basis for comparison,[33] then foreign market value may be derived from prices charged for goods in third-country markets or from the "constructed value" of the

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27. *See* GAO REPORT, *supra* note 11, at 36; *see also Administration of the Antidumping Act of 1921, Hearing Before the Subcomm. on Trade of the House Comm. on Ways and Means,* 95th Cong., 2d Sess. 8 (1978):

    The problem is more severe than a review of individual case backlogs will reveal. The antidumping program is growing, and growing at an increasing rate. . . . [I]n 1975 Customs was investigating, administering or monitoring, approximately 75 cases. By July of 1978, that number was up to 129. . . . The rate at which new cases are being filed has almost tripled since 1976. . . . Customs is currently charged with maintaining ongoing lists of dumping duties on numerous grades, types, and models of products of each of 450 manufacturers. Every model revision and price change must be reflected on these lists.

28. *See* note 107 *infra.*

29. 19 U.S.C. § 1673 (Supp. III 1979).

30. *See* S. REP. No. 249, *supra* note 18, at 74, *reprinted at* 460 (" 'Fair Value' is not defined in current law or in the bill. The committee intends the concept to be applied essentially as an estimate of what foreign market value will be . . . ."). *See also* 19 C.F.R. § 353.1 (1981) ("Fair value, used during the investigative phase of a proceeding, is intended to be an estimate of foreign market value."); Ehrenhaft, *supra* note 9, at 1366 ("Under the Trade Agreements Act of 1979 there can be little doubt that 'fair value' means 'foreign market value' (FMV) — except to the extent that the shortness of time within which the fair value determination must be made prevents collection and consideration of all data that would be needed for a true FMV calculation" (footnotes omitted)).

31. 19 U.S.C. § 1677b(a) (Supp. III 1979).

32. 19 U.S.C. § 1677b(a)(1)(A) (Supp. III 1979).

33. Normally, sales in the home market are deemed inadequate for comparison if they constitute "less than five percent of the amount sold to third countries." 19 C.F.R. § 353.4 (1981).

goods.[34] Constructed value is a surrogate price based on estimates of production costs plus a reasonable allowance for profit and general expenses.[35]

Although the Act clearly states what elements may be considered in calculating foreign market value, neither the Act nor the administrative regulations promulgated pursuant to it offer much guidance on how price comparisons are to be undertaken. Comparing foreign market value with domestic prices is not particularly helpful if, as is often the case with perishables, there are many different prices in the foreign market. The regulations provide that a weighted average[36] foreign market value may be compared with the "U.S. price."[37] There is, however, no comparable procedure specified for arriving at a single U.S. price. Additionally, there is no indication whether all "dumping margins," or only those above some threshold level, necessitate a less-than-fair-value finding. Finally, it is unclear whether the price discrimination inquiry should focus on individual firms or on the industry as a whole.

This absence of statutory guidance has forced the Commerce Department to develop its own procedures for ascertaining whether import sales are made at less than foreign market value. Under the traditional price comparison procedures, the Department first determines a weighted average foreign market value for each firm under investigation.[38] Each firm's foreign market value is then compared with its prices to the U.S. for particular shipments over a specified period of time.[39] The resulting dumping margins often vary from transaction to transaction because import prices may vary between

34. 19 U.S.C. § 1677b(a)(2) (Supp. III 1979). Prior to enactment of the Trade Agreements Act of 1979, the Antidumping Act provided that constructed value was to be used only when both home market and third country data were unavailable in sufficient quantities. 19 U.S.C. § 1677b(a)(2) now allows the administrator a choice of using "constructed value" or the third country standard if data on sales in the exporting country are inadequate. See S. REP. No. 249, *supra* note 18, at 95-96, *reprinted at* 481-82, for an explanation of the reasons for this change.

35. 19 U.S.C. § 1677b(e) (Supp. III 1979). The allowance cannot be less than 10% for general expenses and 8% for profit. 19 U.S.C. § 1677(e)(1)(B) (Supp. III 1979).

36. A "weighted average" foreign market value is computed by weighting different prices by the frequency of their occurrence and then dividing by the total number of prices. Suppose, for example, that there were five sales at $2.00, three sales at $3.00, and two sales at $1.00 in the foreign market. The weighted average price would then be computed as follows: [5($2.00) + 3($3.00) + 2($1.00)] ÷ 10 = $2.10

37. *See* 19 C.F.R. § 353.20 (1981). This regulation provides that if less than 80% of all sales are in the home market (or to third countries, if appropriate), a weighted average price will be used to represent foreign market value.

38. The weighted average of prices will be used if, as will normally be the case with perishables, there is no single price constituting 80% or more of all sales. In cases where there is a predominant price, it will be used in the price comparison formula. *See* note 37 *supra*.

39. Pricing information covers "a period of at least 150 days prior to, and 30 days after, the first day of the month during which the petition was received." 19 C.F.R. § 353.38 (1981).

shipments even for a single importing firm.[40] The weighted average[41] of dumping margins for each firm[42] is then divided by the weighted average price of the U.S. sales in question to yield a "dumping margin percentage"[43] for each firm.[44] If the dumping margin percentage for any firm exceeds the *de minimis* standard relied on by the Commerce Department — in some cases as low as 0.4% — an antidumping order will issue.[45]

At least two features of the price comparison procedure traditionally used by the Commerce Department tend to increase the likelihood of less-than-fair-value findings. First, section 773(b) of the Act requires the Department to disregard certain below-cost sales when calculating foreign market value.[46] Below-cost sales in foreign mar-

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40. *See* notes 56-57 *infra* and accompanying text.

41. *See* note 36 *supra*.

42. *See* Interrogatory from David L. Binder, Acting Deputy Director, Office of Investigations, International Trade Administration, Dept. of Commerce, to Michigan Law Review Association (Oct. 29, 1981) (on file with the *Michigan Law Review*) [hereinafter cited as Binder Interrogatory].

43. The Commerce Department uses the term "weighted average dumping margin" to designate the percentage that is computed. Since the explanation of the procedures here uses that term in a different sense, this Note designates the percentage as a "dumping margin percentage."

44. An example will clarify the Commerce Department's procedure for making less-than-fair-value determinations. Assume the following hypothetical sales data:

Import Price ($)	Quantity	Foreign Market Price ($)	Quantity
3	2	5	3
4	1	6	4
5	10	9	1

The weighted average home market price = [($5)(3) + ($6)(4) + ($9)(1)] ÷ 8 = 6
The margin for each import price is the difference between it and the (higher) weighted average foreign market value. The margins for the $3, $4, and $5 sales are thus $3, $2, and $1, respectively.
The weighted average margin = [($3) (2) + ($2) (1) + ($1) (10)] ÷ 13 = $1.38
The weighted average import price = [($3)(2) + ($4)(1) + ($5)(10] ÷ 13 = $4.62
The percentage dumping margin =

$$\frac{\text{weighted average margin}}{\text{weighted average import price}} = \frac{\$1.38}{\$4.62} = 30\%$$

Since 30% is above the 0.4% *de minimis* level, an affirmative finding of less-than-fair-value sales would issue. *See* Binder Interrogatory, *supra* note 42. An equivalent method of computing the percentage dumping margin is to divide the total value of the margins ($18) by the total value of import sales ($60). This follows from the fact that the denominators in the calculations for weighted average margins and weighted average import price are identical and will cancel in the determination of the percentage dumping margin.

45. This assumes, of course, that the ITC subsequently finds that there has been material injury. *See* note 22 *supra*. The 0.4% *de minimis* standard was used in Certain Iron Metal Castings From India; Antidumping: Final Determination of Sales at Not Less Than Fair Value, 46 Fed. Reg. 39,869, 39,871 (1981). At one point in the last several years the *de minimis* standard was 0.1%. Binder Interrogatory, *supra* note 42.

46. For a critical commentary on this feature of the Antidumping Act, see Hemmendinger, *supra* note 24, at 132 ([T]he practice of treating sustained sales below full cost as *ipso facto* below fair value is an undesirable extension of dumping principles.). *See also* Barceló, *The Antidumping Law: Repeal It or Revise It*, 1 MICH. Y.B. INTL. LEGAL STUD. 53, 61-62 (1979) ("It is a common misconception that a low dumping price is necessarily unfair if it is below

kets are excluded from the base used to calculate foreign market value if they:

(1) have been made over an extended period of time and in substantial quantities; and

(2) are not at prices which permit recovery of all costs within a reasonable period of time in the normal course of trade.[47]

Excluding these sales necessarily increases the average foreign market value that is compared with U.S. prices. To the extent that these exclusions result in more substantial and more frequent discrepancies between foreign market value and U.S. prices,[48] they increase the likelihood that the dumping margin will exceed the *de minimis* value.[49]

The second aspect of the traditional price comparison formula that might give rise to an unjustified finding of less-than-fair-value sales is the arithmetic method used to calculate weighted dumping margins for individual firms. These margins are calculated by subtracting the U.S. price for each of a firm's import transactions from the foreign market value arrived at through the procedure outlined above.[50] If the U.S. price is less than the foreign market value, a "positive" dumping margin results;[51] if the U.S. price exceeds the

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average total cost (unit cost)."). *See generally* R. DALE, ANTI-DUMPING LAW IN A LIBERAL TRADE ORDER 25, 90-91, 199-203 (1980).

47. 19 U.S.C. § 1677b(b) (Supp. III 1979).

48. An example will illustrate why greater price discrepancies result from the exclusion of below-cost prices. Suppose the foreign market prices are as follows: $5.00, $6.00, $2.00, $4.00, $4.00, and $3.00. The average price is $4.00. If cost of production is $3.50, and all below-cost prices are excluded, the new average will be $4.75, which is $.75 higher than it would otherwise have been.

Thus, § 773(b) of the Act effectively makes below-cost sales with certain characteristics trigger positive less-than-fair-value determinations, even if the below-cost sales are not price discriminatory. *See* Hemmendinger, *supra* note 24, at 132 (characterizes the below-cost sales provisions as one that treats "sustained sales below full cost as *ipso facto* below fair value"). *See also Herzstein Hearings*, *supra* note 14. Robert Herzstein, a noted practitioner and commentator, testified in these hearings regarding his nomination to the post of Undersecretary of Commerce for International Trade. He indicated that the "[antidumping] statute does, however, make sales over a protracted period of time at less than cost of production to be, in effect, sales at less than fair value." *Id.* at 50.

49. If a large number of transactions are excluded under § 773(b), the remaining transactions may be inadequate for comparison purposes. If home market sales are inadequate for comparison purposes, then either constructed value or prices to a third country must be used. *See* note 34 *supra*. But if there are no third-country sales, or if an attempt is made to use export prices to a third country, and these too are rendered insufficient by application of § 773(b), then resort to constructed value would be mandatory. *See* 19 U.S.C. § 1677(b) (Supp. III 1979). Constructed value would then be used in the traditional price comparison formula in place of home market or third country weighted average prices. Use of constructed value in this formula might also result in a dumping margin that exceeded the *de minimis* standard. It is presumably for this reason that the petitioners in *Mexican Vegetables* argued for the use of constructed value in making price comparisons. *See* 45 Fed. Reg. at 20,515.

50. *See* note 36 *supra*.

51. A positive dumping margin would result if, for example, the U.S. price were $5.00 and the foreign market value were $7.00.

foreign market value, a "negative" dumping margin results.[52] But in calculating the weighted average dumping margin, the positive margins are summed at their full value while the negative margins are summed in at zero.[53] Essentially, this method disregards instances of U.S. prices *above* foreign market value. Only those prices that fall *below* foreign market value are fully factored into the weighted average dumping margin calculation. To the extent that this aspect of the price comparison procedure increases the dumping margin,[54] its effect is similar to that of the below-cost exclusion. Both procedures tend to increase the likelihood that the dumping margin percentage for any one firm will exceed the threshold value that triggers a less-than-fair-value finding and an antidumping order.

II. ECONOMIC CHARACTERISTICS OF PERISHABLE AGRICULTURAL GOODS AND PRICE VARIATION

The Commerce Department's traditional price comparison formula will often yield less-than-fair-value findings in cases involving agricultural goods — particularly perishable agricultural goods — because the price variations associated with these goods will frequently result in both positive dumping margins and below-cost sales.[55] Agricultural goods, on the whole, exhibit wider and more frequent price variations than manufactured goods.[56] Prices vary not only annually and seasonally, but also weekly, daily, and even hourly.[57] Agricultural production is less stable, and less subject to control by producers, than manufacturing production for several reasons. Because most agricultural goods are harvested seasonally rather than continuously, growers experience annual production highs and lows.[58] Additionally, biological and climatic factors influence both total yield and the distribution of production throughout the year; disease and weather often aggravate normal seasonal patterns.[59] As a result, yields fluctuate within any given growing sea-

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52. A negative dumping margin would result if, for example, the U.S. price were $10.00 and the foreign market value were $7.00.

53. *See* Binder Interrogatory, *supra* note 42.

54. *See* note 90 *infra* and accompanying text.

55. *See* text at notes 74-79 *infra*.

56. *See* R. KOHLS & J. UHL, *supra* note 13, at 169 ("Farm prices are more volatile than nonfood prices.") Kohls and Uhl indicate that: "Wide and frequent commodity price variations are the rule; stable prices of individual commodities are the exception." *Id.* at 206.

57. *See id.* at 206; P. SAMUELSON, ECONOMICS 409 (9th ed. 1973); W. TOMEK & K. ROBINSON, AGRICULTURAL PRODUCT PRICES 169 (1981).

58. *See* R. KOHLS & J. UHL, *supra* note 13, at 59-60; W. TOMEK & K. ROBINSON, *supra* note 57, at 170-71.

59. *See* W. TOMEK & K. ROBINSON, *supra* note 57, at 189 (citing the "biological nature of the production process which makes output partly dependent on uncertain events, including weather and pest damage, and creates seasonal peaks in production").

son, as well as over a span of several seasons.[60] These natural fluctuations and the high ratio in farming of fixed to variable costs[61] prevent rapid adjustments to output in response to price changes.[62]

In economic terms, the supply curve for agricultural goods is generally inelastic,[63] at least in the short run,[64] and prone to shifting.[65] Complicating the picture further is a demand curve for these goods that is also generally conceded to be inelastic and shiftable.[66] This joint inelasticity and instability ensure that small changes in the quantity supplied or demanded will cause relatively severe variations in prices.[67] If producers can refrain from marketing their

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60. *See* R. KOHLS & J. UHL, *supra* note 13, at 58-60. For a graphic representation of the extreme yield variation for California tomatoes between 1950 and 1970, see E. JESSE & M. MACHADO, TRENDS IN PRODUCTION AND MARKETING OF CALIFORNIA FRESH MARKET TOMATOES 7 [fig. 4-B] (1974).

61. *See* G. SHEPERD, AGRICULTURAL PRICE ANALYSIS 23-26 (5th ed. 1963); F. THOMSEN, AGRICULTURAL MARKETING 316 (1951).

62. *See* F. THOMSEN & R. FOOTE, AGRICULTURAL PRICES 92 (1952).

63. *See* R. KOHLS & J. UHL, *supra* note 13, at 168-69; P. SAMUELSON, *supra* note 57, at 403; W. TOMEK & K. ROBINSON, *supra* note 57, at 190. A perfectly inelastic supply curve is represented graphically as follows. The vertical axis represents price and the horizontal axis represents quantity supplied.
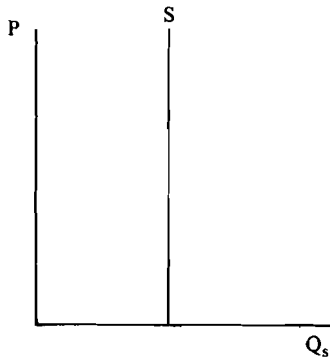
As the graph suggests, the feature that distinguishes inelastic supply from a regular supply curve is the effect of price. When supply is inelastic, an increase in price will not result in increased supply.

64. W. TOMEK & K. ROBINSON, *supra* note 57, at 97.

65. *See id.* at 102. A "shift in supply" generally occurs when, owing to conditions affecting the entire industry, more or less goods are supplied at all prices. This is to be distinguished form a mere change in the quantity supplied, which occurs when consumers are willing to offer a greater price for the good. *See* P. SAMUELSON, *supra* note 57, at 386-87.

66. *See* R. KOHLS & J. UHL, *supra* note 13, at 165-67, 169; P. SAMUELSON, *supra* note 57, at 408.

An inelastic demand curve is one in which the quantity demanded is unresponsive to price changes. It is represented graphically in the same manner as the graph in note 63 *supra*.

67. *See* R. KOHLS & J. UHL, *supra* note 13, at 168-69; P. SAMUELSON, *supra* note 57, at 403; *see generally* W. TOMEK & K. ROBINSON, *supra* note 57, at 97-102. The greater the inelasticity of the supply or demand curve, the greater the magnitude of the price change resulting from a given shift in supply or demand. The graphs below illustrate the effect of an equal decrease in demand in two situations — one with a perfectly inelastic supply and the other with a some-

goods in times of oversupply or slack demand, however, these variations in price ordinarily can be moderated.[68] Producers of storable commodities like wheat, therefore, can force prices upward by curtailing supply when prices are low.[69]

Producers of perishable agricultural goods, however, can do little to counter the natural instability and unpredictability of their output. Perishable commodities cannot be stored for more than short periods,[70] and producers cannot respond to price changes by supplying more or less than what has been produced and harvested in the short run. The supply of perishable goods in the market thus shifts with natural fluctuations in production and will show little response to price changes in the short run.[71] The supply curve for perishable

what more elastic supply. Prices are determined by the intersection of supply and demand; the change in price is clearly greater in the inelastic supply case.
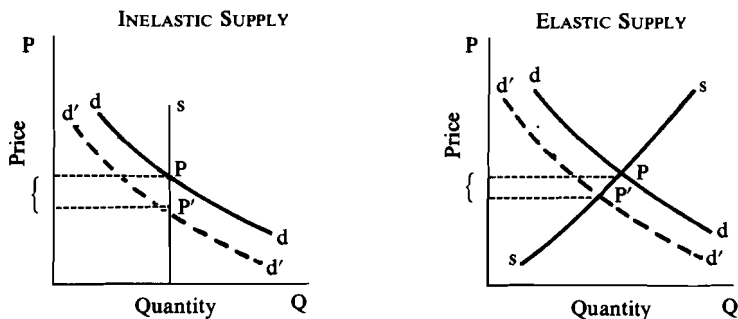
Where both curves are inelastic, or nearly so, as is the case with most agricultural goods, the magnitude of the price changes generated by shifts in one of the curves would be even greater.

68. W. TOMEK & K. ROBINSON, *supra* note 57, at 100 [Fig. 5-3 illustration of equilibrium price for storable commodity with fixed available supply].

69. This is not to say that producers of storable goods have absolute control over the prices for their produce:

The degree of storability of current inventories or the timing and size of the new crop may also influence the seasonal price pattern. End-of-season supplies of semiperishable commodities, such as apples or potatoes, are often uncertain. First, storage quality can vary from year to year. A poor quality would necessitate quick sales out of storage with a resulting small end-of-season supply. Second, storage supplies are often augmented by new crop production. Storage potatoes, for example, compete with new spring potatoes. Thus, the timing of harvest and the size of the spring potato crop influence the price of storage potatoes. If supplies toward the end of the storage season are short, prices rise dramatically; if supplies are large, seasonal prices will rise less than normal or even decline.

Id. at 173.

70. Perishability and storability are relative concepts. In agricultural economics, "a 'non-perishable' commodity is defined as one which can be stored from one crop year to the next." *Id.* at 173. *See* Schmitz, Firch & Hillman, *Agricultural Export Dumping: The Case of Mexican Winter Vegetables in the U.S. Market*, 63 AM. J. AGR. ECON. 645, 649 (suggesting that it is not feasible for growers of vegetables like those involved in *Mexican Vegetables* to store them for more than a "day or two" because of "their continuous production, high storage costs relative to the value of the product, and the deterioration of the product when stored").

71. Over periods longer than one growing season, the farmer will be able to influence

goods is, in fact, more inelastic and prone to shifting than the supply curve for storable agricultural goods.[72] Price fluctuations of perishables in the short run will, therefore, be greater than fluctuations for either storable agricultural or industrial goods.[73]

Perishable goods, moreover, are also frequently sold below their actual cost of production.[74] The high incidence of below-cost sales, like wide and frequent price variations, results from the producers' inability to store perishable goods for more than short periods. In fact, below-cost sales are simply one manifestation of the more general phenomenon of price variation.[75] Because the producers of perishables cannot curtail production in the short run,[76] the only alternative to selling at whatever price the market offers is to let the produce rot.[77] Producers will, therefore, always accept a price below average total cost if that price covers the variable costs of harvesting

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output by, for example, planting fewer or more acres. Thus, the inelasticity of supply lessens as longer periods are considered. *See* W. TOMEK & K. ROBINSON, *supra* note 57, at 97.

72. In the short-run, the supply curve for perishable agricultural commodities is almost perfectly inelastic and is often represented as a vertical line. *See* R. KOHLS & J. UHL, *supra* note 13, at 167-68; C. MCCONNELL, ECONOMICS 417 (5th ed. 1972).

73. The trend toward "direct" or decentralized marketing of fruits and vegetables — *i.e.*, selling by individual negotiation rather than through organized markets — also may contribute to price volatility. Decentralized marketing reduces the quality and quantity of price and supply information and leads to a greater number of "errors in marketing decisions." *See* W. TOMEK & K. ROBINSON, *supra* note 57, at 218, 225-26. The greater magnitude and frequency of price fluctuation in perishable commodities markets has long been recognized. *See* A. AD-AMS, MARKETING PERISHABLE FARM PRODUCTS 16 (1916). *See generally* ECONOMIC RE-SEARCH SERVICE, U.S. DEPT. OF AGRICULTURE, PRICES AND SPREADS FOR SELECTED FRESH VEGETABLES SOLD IN MAJOR MARKETS, 1967/68—1974/75 (1977), for an indication of the degree to which prices of particular perishable goods vary over time at the retail, wholesale, and farm level. Table 54, which shows monthly lettuce prices for the city of Baltimore, indicates, for example, that farm level lettuce prices in January, February, March, and April 1975, were $3.31, $4.50, $3.19, and $2.00, respectively.

74. *See* R. KOHLS & J. UHL, *supra* note 13, at 172-73 ("In agriculture, the perishable and seasonal nature of production make these short-run . . . loss possibilities quite likely."). One of the paradoxes of agricultural production is that a boom year may lead to depressed prices that translate into economic loss for farmers. *See, e.g.*, King, *On The Farm, A Problem of Abundance*, N.Y. Times, Jan. 10, 1982, § 12 (National Economic Survey), at 30.

75. The general case of agricultural price variation is often explained in terms of the "cob-web phenomenon." The cobweb phenomenon refers to periodic oscillation of prices around a hypothetical equilibrium price that is never actually reached. *See, e.g.*, G. SHEPERD, *supra* note 61, at 34-39 (1963).

76. *See* notes 57-58 *supra*.

77. *See* R. KOHLS & J. UHL, *supra* note 13, at 168 ("An owner of a perishable product has little choice except to move the product at almost any price."). Later, the authors comment: "A low level of demand may mean that goods must sell at a loss." *Id.* at 172. *See also* C. MCCONNELL, *supra* note 72, at 417. Professor McConnell illustrates this principle with an example of a tomato producer who brings one truckload of tomatoes to market. McConnell explains that the tomato grower will sell his produce no matter how low the price, since the perishability of the produce prevents its withdrawal from market. McConnell adds: "Costs of production . . . will not be important in making this decision. Even though the price of the tomatoes may fall far short of his production costs, he will nevertheless sell out to avoid a total loss through spoilage." *Id.*

the produce and bringing it to market.[78] Because sales at any price greater than the cost of marketing the produce recoup some of the fixed or sunk costs of production,[79] rational producers will sell below cost in some situations.

The structure of the market for perishable goods also tends to exacerbate variations in their prices, both over time and within a single regional market. Unlike the supply and demand conditions examined above, these structural peculiarities are not deducible *a priori* from economic theory[80] or from the nature of perishables vis-à-vis other commodities. For a variety of reasons, however, the market is rife with imperfections that cause pricing patterns to deviate from those that would obtain in a perfectly competitive market. At least in theory, prices for identical agricultural goods within the same perfectly competitive market should be uniform after adjusting for varying distribution costs.[81] Buyers and sellers would eliminate differences in price arising within or between markets almost immediately.[82] In practice, however, market imperfections often result in price differences within and between markets.[83] On any given day, for example, the average price of strawberries in the Northeast is likely to vary somewhat from the average price in the Southwest, even after adjusting for transportation and other variable costs.[84]

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78. *See* Schmitz, Firch & Hillman, *supra* note 70, at 649 ("Under these circumstances, when the commodity is mature enough for normal harvest, the rational farmer looks at the prevailing price for the product; and if that price exceeds the variable harvesting and transfer costs, he must harvest and sell the product.").

79. An example will help illustrate this. Suppose that a farmer's crop has ripened, his average fixed costs are 10 cents per tomato, the harvesting and marketing costs are 7 cents per tomato, and the anticipated price is 8 cents per tomato. Under these facts, the farmer would rationally harvest and sell the tomatoes, even though he will not recover the average total cost of producing and marketing the commodity. The farmer will recover his average harvesting and marketing costs and a portion (one cent) of his average fixed costs. If the produce is already at the market and the price of tomatoes drops to 2 cents, he will still sell because at that time all of his costs will have become fixed, and the two cents will at least cover a portion of these costs.

From this example, it is clear that the distinction between variable costs and sunk or fixed costs depends on the time period being examined. In the "intermediate" period, the grower's sunk costs include his equipment, building, and planting costs, while harvesting, transportation, handling, and transaction costs are variable. In the market period, when the farmer has brought his goods to market, the variable costs, if any, are transaction costs.

80. "Economic theory," as used here, refers to the constrained and artificial world of classical microeconomics. This world is one of scarce resources, unlimited wants, and perfect information among rational, utility maximizing individuals (often only two) who trade without cost.

81. This proposition is known as the "law of one price." *See* R. KOHLS & J. UHL, *supra* note 13, at 176.

82. *See id.* at 176-77. This phenomenon is generally referred to as "arbitrage."

83. *See* U.N. FOOD AND AGRICULTURAL ORGANIZATION, MARKETING FRUIT AND VEGE-TABLES 117 (1970); F. THOMSEN, *supra* note 61, at 352.

84. *See* W. TOMEK & K. ROBINSON, *supra* note 57, at 153 (suggesting that fruit and vegetables, which are generally not priced on central markets, will exhibit some interregional price differences).

Two factors are primarily responsible for these differences. Imperfect knowledge on the part of sellers and buyers is probably the most important cause of price variations in the market for perishable goods. Both sellers and buyers face a market where knowledge of supply and demand conditions "is never perfect and frequently is very imperfect."[85] Shipments are not always sent to markets that would yield the best prices; oversupply in one market and undersupply in another produce price disparities.[86] Imperfect knowledge magnifies the effect of another factor — the time lag between production and marketing decisions based on current market conditions and the completion of the activities set in motion by those decisions.[87] In any market, of course, this lag will cause short-run variations from the theoretical competitive equilibrium.[88] But in the market for agricultural goods, the effect of this lag is especially severe because its duration may equal or exceed the duration of the market condition itself. A producer of perishable goods, therefore, might make the best possible decision on the basis of current market information, but nevertheless achieve poor results because market conditions change before the decision can be fully implemented.

III. PERISHABLE AGRICULTURAL GOODS AND THE PURPOSES OF THE ANTIDUMPING ACT

When applied to perishable agricultural goods, the traditional price comparison formula may indicate that a foreign producer is dumping goods on an American market in cases where economic theory suggests that price variation is normal rather than predatory. Because the formula used to calculate dumping margins discounts negative margins to zero,[89] sufficient variation in export prices to the United States can in and of itself trigger a less-than-fair-value determination. For example, if both the foreign market and U.S. prices have *identical* distributions, the traditional formula will necessarily produce positive dumping margins.[90] Similarly, the frequency of below-cost sales of perishable goods increases the likelihood of a finding that producers have sold at less than fair value when these sales

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85. F. THOMSEN, *supra* note 61, at 352.

86. Another source of price disparities between regions is quality differences in the goods sold. The demand curves for a particular agricultural product will vary depending on size, shape, maturity, and color characteristics, among others. *See* W. TOMEK & K. ROBINSON, *supra* note 57, at 140-44. Conventional supply and demand analysis does not deal with this source of price fluctuation since it presupposes that all supplies of a good are identical.

87. *See* W. TOMEK & K. ROBINSON, *supra* note 57, at 89-91.

88. *See* note 75 *supra*.

89. *See* notes 50-54 *supra* and accompanying text.

90. An illustration will make this apparent. Suppose there was one sale at each of the following prices in the home market and for export to the U.S.

are excluded from the base used to calculate foreign market value.[91]

Whether the traditional price comparison formula may be validly applied to perishable agricultural goods despite its apparent overinclusiveness depends on the resolution of two questions. First, was the Antidumping Act intended to proscribe the sort of nonpredatory variations that economic theory and the realities of the market suggest will commonly occur in the prices of perishable goods? And, if not, do any empirical data suggest that the observed variations in the price of perishables might in fact be predatory?

A. *Predatory and Nonpredatory Pricing Behavior and Antidumping Law*

A less-than-fair-value finding based on the application of the traditional price comparison formula to nonpredatory price variations in the market for perishable goods contravenes the underlying purposes of the antidumping law. The legislative history of the Antidumping Act of 1921,[92] an earlier version of the current law, strongly suggests that Congress designed the antidumping program to prohibit only predatory pricing. Although there is some ambiguity,[93] the debates and House Report on the bill that became the 1921 Act reveal that Congress was primarily concerned with predatory

Bushels of Peaches Foreign Market Value	Bushels of Peaches U.S. Price
$ 5.00	$ 5.00
2.00	2.00
3.00	3.00
4.00	4.00
11.00	11.00

The weighted average foreign market value would be $5.00. Using the current price comparison formula, positive dumping margins would obtain for the $2.00, $3.00, and $4.00 transactions. These margins would be $3.00, $2.00, and $1.00 respectively. The negative and zero margins would be summed in at zero. The percentage dumping margin is equal to the aggregate value of the "margins" divided by the aggregate value of sales to the U.S., or:

$$\frac{\$3.00 + \$2.00 + \$1.00}{\$3.00 + \$2.00 + \$4.00 + \$5.00 + \$11.00} = \frac{\$6.00}{\$25.00} = 24\%$$

This percentage is well above the .05% needed to trigger a positive less-than-fair-value determination. *See* Hemmendinger, *supra* note 24, at 130.

> If one imagines a simple model in which the average price in the home market for a given period is exactly the same as the average price for export to the United States, then one half of the sales for export must be at less-than-fair-value margins. Thus it is common that, under the administration of the United States law, dumping is found where, by any normal test, there is no dumping, and the margins found exceed the true margins.

Id.

91. *See* notes 46-49 *supra* and accompanying text.

92. 42 Stat. 11 (formerly 19 U.S.C. §§ 160-171 (1976)). See note 1 *supra* for an explanation of the new codification of the antidumping law.

93. At least one commentator has argued that the ambiguity precludes any "conclusive assertions" about congressional intent. *See* Barceló, *supra* note 6, at 551 n.282.

pricing practices that threatened to monopolize domestic markets.[94] Because it did not wish to enact nakedly protectionist legislation, Congress cast the Act in distinctly antipredatory terms. According to the House Report, for example:

> [The Act] protects our industries and labor against a now common species of commercial warfare of dumping goods on our markets at less than cost or home market value if necessary until our industries are destroyed, whereupon the dumping ceases and prices are raised above former levels to recoup dumping losses.[95]

Senator McCumber, one of the Act's principal spokesmen,[96] counselled trading partners that "there is no danger [of being subject to the Act] unless it is sought by a foreign competitor to sell goods for less than cost or less than they can be sold for consumption in the home country *for the purpose of destroying an industry in this country* . . . ."[97]

More recent indications of congressional intent also support this antipredatory interpretation of the Antidumping Act. The Senate Committee Report on the Trade Act of 1974 states that "[the Antidumping Act] is not a protectionist statute designed to ban or restrict U.S. imports; rather, it is a statute designed to free U.S. imports from unfair price discrimination practices."[98] The Report suggests that "unfair" is synonymous with predatory or anticompetitive.[99] The legislative history of the New Trade Act's antidumping provisions, moreover, casts no doubt on the view that American antidumping law reaches only predatory activity.[100]

In the view of many commentators, this antipredatory interpretation is necessary if the antidumping law is to be justified on eco-

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94. For a similar view of the legislative intent, see R. DALE, *supra* note 46, at 12-13; Coudert, *The Application of the United States Antidumping Law in the Light of Liberal Trade Policy*, 65 COLUM. L. REV. 189, 190-92 (1965); Kohn, *The Antidumping Act: Its Administration and Place in American Trade Policy*, 60 MICH. L. REV. 407, 413-14 (1962).

95. H.R. REP. No. 1, 67th Cong., 1st Sess. 23 (1921). Congress's fear of predatory market invasion by Germany underlay the passage of the Antidumpting Act. *See* W. WARES, THE THEORY OF DUMPING AND AMERICAN COMMERCIAL POLICY 84 (1977).

96. Senator McCumber and Representative Fordney were the respective floor managers of the debate.

97. 61 CONG. REC. 1021 (1921) (statement of Sen. McCumber) (emphasis added). *See also* 61 CONG. REC. 1022 (1921) (statement of Sen. McCumber).

98. S. REP. No. 1298, 93d Cong., 2d Sess. 179 (1974) [hereinafter cited as S. REP. No. 1298], *reprinted in* [1974] U.S. CODE CONG. & AD. NEWS 7186, 7316.

99. The Senate Report made the statement cited in note 98 *supra* in its discussion of "technical dumping," which is defined as exporting at a price that, while lower than the foreign market value, is at or above the prevailing prices charged in the U.S. by domestic producers. It then stated: "Such so-called technical dumping is not anti-competitive, hence, not unfair; it is pro-competitive in effect." S. REP. No. 1298, *supra* note 98, at 179, *reprinted at* 7316.

100. The legislative history to the new antidumping provisions makes few, if any, statements of policy regarding the Act. This is partly because the provisions are not all that "new"; "the substance of many of [the provisions of the Antidumping Act of 1921 was] reenacted." S. REP. No. 249, *supra* note 18, at 60, *reprinted at* 446.

nomic or public policy grounds.[101]   Historically, the principal proponent of a more sweeping application of antidumping law was Professor Viner,[102] whose work in the field, albeit dated, is considered classic. Viner conceded that only short-term dumping — of which predatory dumping is the most objectionable example — should be prohibited, but advocated a ban on all price discrimination as a prophylactic safeguard.[103]   Recent economic analysis,[104] however, severely undercuts Viner's argument and compels the conclusion that his approach is both overbroad and contrary to consumer welfare.[105] When applied to perishable agricultural goods, Viner's argument seems particularly unpersuasive. Because price variations in the markets for these goods are both sporadic and long-

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101. Antidumping laws are justified by the same kinds of considerations that underlie antitrust laws. *See, e.g.*, Barceló, *supra* note 6, at 500-01. These considerations include the threat monopoly poses to a country's labor and capital, to consumer welfare, and to the competitive process itself. *See also* W. WARES, *supra* note 95, at 88 (indicating that dumping duties are justified in cases of predation and in special cases involving imports that will cease entirely after a short period); Ehrenhaft, *An Administrator's Look at Antidumping Duty Laws in United States Trade Policy*, 1 MICH. Y.B. INTL. LEGAL STUD. 97, 104 (1979) (suggesting that dumping should be permitted, "absent threats that [the firm] is an economic predator or that the below-cost sales make [it] so unreliable a supplier that we should not adjust our economy to accommodate to his supply"); Hemmendinger, *supra* note 24, at 124-25 ("Discrimination in pricing among different markets is a norm of business practice. . . . Low pricing violates the laws governing unfair competition only if it is predatory — designed to drive competitors out of business with a view to, and the capability of, monopolizing the market.").

102. *See generally* J. VINER, *supra* note 2.

103. Viner believed that most dumping was of the short-term variety, and that long-term dumping could not in practice be distinguished from short-term dumping. He believed that both forms should be prohibited by presuming that *all* dumping was of the short term variety. *Id.* at 139-47. Viner conceded that long-term dumping was not necessarily injurious to consumer welfare, *id.* at 138-39, but he believed that the cost of short-term dumping in terms of injury to the affected industry's employment outweighed the short-term benefit of reduced prices to consumers. *Id.* at 140.

104. Recent studies suggest that as a general matter "predatory pricing will be rare because it is costly and the benefits are both doubtful and in any event obtainable through less costly means." Barceló, *supra* note 46, at 65. *See generally* Bowman, *Restraint of Trade by the Supreme Court: The Utah Pie Case*, 77 YALE L.J. 70 (1967); McGee, *Predatory Price Cutting: The Standard Oil (N.J.) Case*, 1 J. L. & ECON. 137 (1958); Telser, *Cutthroat Competition and the Long Purse*, 9 J. L. & ECON. 259 (1966). The would-be monopolist, Barceló argues, would have difficulty forecasting both the losses it would have to suffer before eliminating its competition and how high the price could be raised without attracting new entry. Barceló, *supra* note 46, at 65-66. *See also* R. DALE, *supra* note 46, at 32 ("both theory and evidence suggest that predatory pricing in general and predatory dumping in particular are rare").

105. Economists following Viner have demonstrated that long-term dumping is likely to occur whenever (1) a producer has market power in the home market, (2) the possibility of arbitrage is low, and (3) the price elasticity of demand is lower in the export market than the home market. In such cases the producer will sell at a lower price in the foreign market to maximize profits. *See* J. ROBINSON, THE ECONOMICS OF IMPERFECT COMPETITION 181 (1930). Some observers believe that such conditions are relatively common. *See* Barceló, *supra* note 46, at 70. The structure and goals of today's multinational enterprises also support the belief that dumping will often be of the long-term variety. *See* W. WARES, *supra* note 95, at 78-80. Insofar as long-term dumping occurs frequently, Viner's presumption that all or most dumping is short-term becomes untenable. For criticism of Viner's position, see R. DALE, *supra* note 46, at 30-31, Barceló, *supra* note 46, at 70-71.

term, they injure neither consumers nor domestic industries in the long run.[106]

Assessing antidumping duties in cases involving nonpredatory price variations will create a barrier to free trade that could cause economic losses in the United States. Foreign producers faced with an antidumping order might raise their export prices to match the prices that prevail in "comparable" transactions in either their home markets or in third-country markets rather than pay a duty representing the difference between these prices.[107] An increase in the prices of affected goods, of course, is likely to decrease import sales, with a corresponding loss of consumer welfare.[108] Over a period of

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106. Consumers, of course, benefit directly from reduced prices at a retail level. Domestic producers are injured only if the dumping is severe and consistent enough to drive them out of agricultural production entirely. Generally, this will not be the case. Farmers are often able to withstand prolonged periods of depressed prices without leaving agricultural production. *See* F. THOMSEN & R. FOOTE, *supra* note 62, at 92-93.

> If the price of some manufactured product should fall below the costs of production of individual manufacturers, the latter would be driven out of business very quickly, thus decreasing supply and tending to raise prices. It is a difficult matter, however, to drive the farmer out of business, because of his ability to get along over a long period of below-cost prices by gradually using up his capital investment and reducing his standard of living. . . . And even if the [individual] farmer were forced to relinquish his farm, someone else would quickly replace him. Falling prices breed idle factories but not idle farms.

Id. (emphasis deleted). Moreover, it is unlikely that any individual farmer need experience severe dislocation because of lower priced imports — farmers can generally shift from production of one perishable product to another more rapidly than a manufacturer can shift from production of one product to another. In fact, farm producers must routinely choose between various crop production possibilities in order to maximize their profits. *See generally* R. BRESSLER & R. KING, MARKETS, PRICES, AND INTERREGIONAL TRADE 292-96 (1970) (technical explanation of return maximizing choice along two product production possibility curves). Individual farmers also react as rapidly to price cycles as the biological cycle of the crop in question will permit; for most perishable crops this is one growing season. *See* R. KOHLS & J. UHL, *supra* note 13, at 214:

> Farmers adjust to agricultural price cycles in three ways. Most farmers contribute to cycles by expanding during periods of high prices and contracting during periods of low prices. Other farmers opt to produce at a steady rate over the long haul, regardless of the cycle, averaging the high prices with the low prices. Still others attempt to gear their production counter to the cycle — expand when others are contracting and contract when others are expanding.

107. *See generally* Barceló, *supra* note 46, at 53. Barceló argues that the application of the antidumping law to nonpredatory dumping will diminish national welfare because it "restricts imports excessively and, more importantly, chills price competition . . . from imports." *See also* Ehrenhaft, *supra* note 9, at 1382 n.78: "Both import practitioners and the Customs Service generally agree that . . . exporters commonly revise prices to avoid the imposition of antidumping duties." As a result few, if any, collections were generated despite great effort and expense. *But see* GAO REPORT, *supra* note 11, at 9:

> Importers claim that investigations cause an increase in import prices, but the extent of such increases is difficult to measure because of other factors, such as inflation and fluctuation in currency exchange rates. It is also contended that Customs' withholding of duty value "appraisement" of import entries . . . causes importers to decrease their purchases or to seek alternate sources of supply from the exporter because of the uncertainty created over what prices to charge for the dumped merchandise.

108. "Consumer Surplus" is the difference between the total amount paid for a given quantity of goods at a market clearing price and the total utility that those goods provide consumers in the aggregate. Consumer surplus is represented graphically as follows:

time, competition in the affected markets might also suffer because of the reduced volume of trade.[109] These policy considerations, as well as the Act's legislative history, counsel against applying the traditional price comparison formula in cases where nonpredatory variations in prices might lead to less-than-fair-value findings.

B. *Predatory Pricing in the Market for Perishable Goods*

Although economic theory predicts wide price variations and below-cost sales in the market for perishable goods, these phenomena may evince predatory behavior in particular cases. Their presence does not imply a perfectly competitive market structure; market power may be concentrated among a few firms,[110] and price varia-
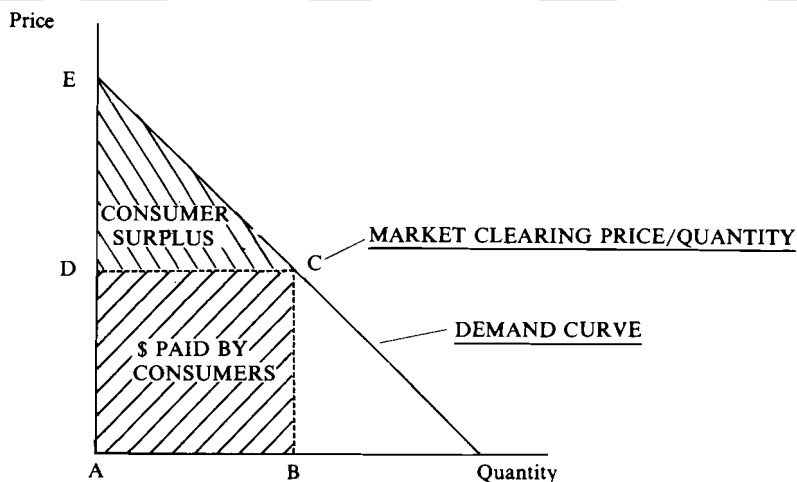
CONSUMER SURPLUS

(Supply curve omitted for clarity)

The market clearing price (where supply and demand are in equilibrium) is C. Consumers thus pay an amount equal to A-B-C-D. The utility derived from this quantity of goods, however, includes both the amount paid (A-B-C-D) and the amount (D-C-E) above the payment rectangle because there are consumers scattered along the demand curve above the market clearing price who would have paid more for the good. Obviously, the amount and distribution of consumer welfare depends on an individual consumer's willingness to pay. Consumers scattered along the demand curve *below* the market clearing price derive no consumer surplus because they will not purchase the good even at the market clearing price. *See* P. SAMUELSON, *supra* note 57, at 436-38.

109. *See, e.g.*, Hemmendinger, *supra* note 24, at 125:

Simply beginning an antidumping investigation may have such a deterrent impact on importers that imports vital to the United States economy are dried up. Treasury already recognizes that the prosecution of an antidumping investigation may be undesirable. In 1976 the Secretary discontinued the massive automobile cases on unprecedented grounds; basically, he felt that it did not serve the United States' best interests to proceed. . . . Not only are the formal investigations complex and time-consuming, more importantly, rigorous enforcement of the Act [could virtually stop] . . . imports, to the detriment of the United States Economy.

110. *See generally* P. SAMUELSON, *supra* note 57, at 116 (Figure 6-1) (four largest firms

tions and below-cost sales could be the hallmarks of oligopolistic or monopolistic pricing.[111] A producers' cartel might discriminate within the American market, or between the American and other markets, to drive competitors out of business and acquire monopoly power. Price variations and below-cost selling undertaken for this predatory purpose would be in addition to those that the cartel's members experience naturally due to the supply and demand characteristics of perishable goods. For this reason, it might not be obvious whether price variations or below-cost sales in a specific case are nonpredatory or primarily predatory in nature.

Successful or sustained predatory pricing by growers of perishable goods is theoretically possible, but the empirical evidence suggests that it is unlikely. Agricultural producers in the United States and elsewhere have long been used as textbook examples of firms operating nearest to the concept of perfect competition.[112] Because market power in agricultural goods is widely dispersed, no producer or group of producers can control prices.[113] This dispersal of power is both a cause and a result of the difficulties of cartelization. The existence of many small producers[114] demonstrates that no producer has seized a significant market share, and the number of producers pursuing their own economic interests dooms attempts to

account for over 80% of dollar value of industry shipments in the aluminum, telephone equipment, electric light bulbs, and breakfast cereal industries). The Justice Department relies on "concentration" ratios in its internal guidelines for determining whether to challenge mergers under the anti-trust laws. *See* P. AREEDA, ANTITRUST ANALYSIS, PROBLEMS, TEXT, CASES 976-80 (3d ed. 1981).

111. *See* J. VINER, *supra* note 2, at 74-94 (surveying actual dumping practices of various monopolistic producer's combinations); W. WARES, *supra* note 95, at 84-85 (discussing the use of dumping and below-cost selling by monopolists for predatory purposes).

112. R. KOHLS & J. UHL, *supra* note 13, at 190. *See also* Knight, *Agriculture*, in THE STRUCTURE OF AMERICAN INDUSTRY (W. Adams ed. 1961) (indicating that agriculture meets rather well the requirements of a perfectly competitive industry, including a large number of sellers, standardization of product, and ease of entry into the industry). The processed food marketing sector, unlike the farm sector, is not perfectly competitive in structure, however. *See* R. KOHLS & J. UHL, *supra* note 13, at 190.

113. *See* C. MCCONNELL, *supra* note 72, at 622:
Agriculture is a highly competitive industry, composed of hundreds of thousands of small geographically dispersed producers. As a result, farmers have no control over the prices at which they must sell their products. . . . Stated differently, agriculture is the last stronghold of pure competition in an otherwise imperfectly competitive economy.
See R. KOHLS & J. UHL, *supra* note 13, at 160; J. THOMSEN & R. FOOTE, *supra* note 62, at 96-97.

114. Despite the trend toward larger farm units, economists note that the central problem of American farming is the stubborn refusal of individual farm entrepreneurs to exit the agricultural sector in the face of increased costs and decreasing returns. *See, e.g.*, C. MCCONNELL, *supra* note 72, at 618-19:
In a broad sense, the relative slowness of the reallocation of farmers from agriculture to industry is the crux of the farm problem. Ironically enough, in an industry long associated with the word 'surplus', we find that the biggest and most fundamental farm surplus of all is the number of farmers. Indeed, the farm problem can be correctly envisioned as a problem of resource misallocation. It is the fact that too many farmers are sharing agriculture's shrinking slice of the national income pie that makes income per farmer small.

cartelize.[115]

Even if foreign producers were able to form and maintain cartels, the atomistic agricultural market structure in this country[116] would frustrate their attempts to monopolize. Many growers can shift their production from one perishable crop to another in response to market conditions.[117] It is thus unlikely that a domestic grower could ever be "destroyed" in the sense necessary to allow predatory pricers to reap monopoly profits. At most, domestic producers would temporarily shift from one crop to another. Once the prospective monopolist raised prices, domestic growers would have an incentive to resume production, and natural market forces would push prices downward to a competitive equilibrium. The existence of actual or potential foreign competition also serves to check monopolization attempts.

This is not to say that predatory pricing cannot occur in the market for perishable goods. Predatory pricing remains a possibility that the antidumping laws must guard against. At the same time, however, those laws should reflect the only available empirical evidence, which indicates both that foreign producers of perishable goods are unlikely to engage in predatory pricing behavior,[118] and that the mo-

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115. *See generally* F. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 183-86 (1970):

> One structural dimension with an obvious influence on coordination is the number and size distribution of sellers. Generally, the more sellers a market includes, the more difficult it is to maintain prices above costs, other things being equal. . . .
>
> . . . .
> [A]s the number of sellers increases, so also does the probability that at least one will be a maverick, pursuing an independent, aggressive pricing policy. . . .
>
> . . . .
> . . . Some economists have suggested that the difficulty of coordination rises nearly exponentially with the number of firms.

116. For all U.S. agricultural products, farms with annual sales of over $100,000 accounted for only 3% of all farm units and 34% of total sales. For vegetables, farms with annual sales over $1,000,000 accounted for 7% of all farm units and 68% of total sales. *See* R. KOHLS & J. UHL, *supra* note 13, at 54. Thus, although the vegetable sector of the agricultural economy is more concentrated than other sectors, it is nevertheless true that "much of our production is made available . . . in relatively small lots from a large number of relatively unspecialized individual units." *Id.* at 55.

117. *See* note 106 *supra*. The changeover cost for productive facilities is likely to be low for many types of agricultural goods. Even if the monopolist drives out some competitors, others will be beckoned into the market by any slight rise in price. See Barceló, *supra* note 46, at 66.

118. One study of 26 antitrust cases concluded that predatory pricing designed to eliminate a competitor is "an infrequent occurrence of fairly insignificant competitive effects." *See* Koller, *The Myth of Predatory Pricing: An Empirical Study*, 4 ANTITRUST L. & ECON. REV. 105, 122 (1971). There is reason to believe this phenomenon will not occur in the agricultural setting, *see* Abel, *Price Discrimination in the World Trade of Agricultural Commodities*, 48 J. FARM ECON. 194, 207 (1966):

> Although it is possible . . . for an exporter or group of exporters to discriminate in price between their domestic market and the export market, it has not been the practice of exporters to discriminate among import markets. There is generally a single world net price for an agricultural commodity in world trade for all importing countries. . . . It is important to recognize . . . that complete monopolistic control of supply is very difficult

nopoly-resistant structure of domestic agriculture is likely to frustrate most attempts to monopolize. It thus seems fair to presume that price variations and below-cost selling in the markets for perishable goods do not evince predatory pricing, but are simply by-products of the economic characteristics of these goods.

Because the traditional price comparison formula is not based on this presumption, it ignores economic realities and may result in the imposition of unjustified antidumping orders. Part IV proposes several modifications that would reduce the difficulties involved in applying the traditional formula to perishable agricultural goods while ensuring that the Antidumping Act's underlying purpose — eliminating predatory pricing — is fulfilled.

IV. PROPOSED MODIFICATIONS TO THE TRADITIONAL PRICE COMPARISON FORMULA

A. *Section 773(b)'s Below-Cost Sales Provision*

Section 773(b)'s exclusion of below-cost sales from the base used to calculate foreign market value[119] may result in less-than-fair-value findings although below-cost sales are frequently nonpredatory in markets for perishable goods.[120] Categorical application of this section to cases involving perishables, therefore, is contrary to the Act's purpose[121] and to sound economic policy.[122] The Com-

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to achieve. There may be many potential suppliers. Collusion among a few major exporters to restrict supplies and raise prices may stimulate production in those countries which are not in the collusive agreement and which might export at these higher prices. This situation poses a barrier to achieving complete monopoly control over supply.

A U.S. Department of Agriculture study of the competitive threat posed by the importation of Mexican vegetables concluded:

Mexican policies tend to discourage vegetable exports on balance. No special credit facilities are available; very little extension of information and only minor research inputs are provided. Production and export taxes are rather high. Producer organizations are self-financing through check-off payments per box or pound. Irrigation water is provided at low prices. But it is given to all crops on a more or less equal basis, and preference is sometimes given to basic grains if water is in short supply.

U.S. DEPT. OF AGRICULTURE, MEXICAN COMPETITION FOR THE U.S. FRESH WINTER VEGETABLE MARKET (Agricultural Economic Report No. 348), [reprinted in *Inspection Standards of Vegetable Imports, Hearings Before the Subcomm. on Foreign Agricultural Policy of the Senate Comm. on Agriculture, Nutrition, and Forestry*, 95th Cong. 2d Sess., Pt. 1, 93 (1978) [hereinafter cited as *Vegetable Imports Hearings*]]. *But cf. Vegetable Imports Hearings, supra*, Pt. 3, at 7 (1978) (economist retained by Florida growers associations claimed that "centralized planning" has given the Mexican vegetable industry "market power for exceeding that of any individual Florida grower").

119. *See* text at notes 46-49 *supra*.

120. *See* text at notes 74-79 *supra*.

121. *See* text at notes 92-100 *supra*.

122. The below-cost sales provision was added to the antidumping law by the Trade Act of 1974 and was left unchanged in the recodification of the antidumping law effected by the Trade Agreements Act of 1979. The rather sparse legislative history regarding the below-cost sales provision indicates that Congress intended to extend the reach of the antidumping law to the practice of selling below cost in both the U.S. and foreign markets, a practice that does not, technically, constitute price discrimination. As the Senate Report to the Trade Act of 1974

merce Department recognized this problem in *Mexican Vegetables* and declined to apply section 773(b).[123]

The decision to exclude certain sales as "below cost" within the meaning of section 773(b) depends heavily on how the Commerce Department interprets the conditions that trigger exclusion.[124] Below-cost sales are to be disregarded only if (1) they are made in *substantial* quantities, (2) over an *extended* period of time, and (3) do not permit recovery of average costs within a *reasonable* period of time.[125] Because section 773(b) does not clearly indicate when specific sales should be excluded, the Commerce Department should construe these requirements in light of the Act's antipredatory purpose.[126] Only in this way will it ensure that below-cost sales made

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indicated: "The Committee is concerned that, in the absence of such a provision, sales uniformly made at less than cost of production could escape the purview of the Act, and thereby cause injury to United States industry with impunity." S. REP. No. 1298, *supra* note 98, at 173, *reprinted at* 7310. The Senate Report stressed, however, that the provision "would not require the disregarding of below-cost sales in every situation, for under normal business practice in both foreign countries and the United States, it is frequently necessary to sell obsolete or end-of-model year merchandise at less than cost." *Id.* Instead, the provision was intended to exclude below-cost sales only when such sales were "systematic." *Id.*

The desire to prohibit various kinds of below-cost selling, irrespective of price discrimination, is not a new one. *See* J. VINER, *supra* note 2, at 147. Some commentators are concerned that the Act, as administered, focuses too heavily on price discrimination practices and not enough on the problem of below-cost selling by a producer in all markets. *See* Schmitz, Firch & Hillman, *supra* note 70, at 651; *Herzstein Hearings*, *supra* note 14, at 46-49 (statement of Sen. Stone). In questioning Robert E. Herzstein, nominee for the post of Undersecretary of Commerce for International Trade, Senator Stone of Florida characterized an approach based on price comparisons as "shocking," "ridiculous," and "irrelevant." *Id.* at 47. To the extent that the below-cost sales provision is properly applied, however, this criticism seems unpersuasive. Indeed, the real danger appears not to be that below-cost selling will occur with impunity, but rather that many "innocent" cases of below-cost selling will be reached by the Act.

123. Certain Fresh Winter Vegetables from Mexico, 45 Fed. Reg. 20,512, 20,515 (1980) (final determination).

124. The importance of the interpretation of the conditions for exclusion was emphasized by Patrick Macrory, attorney for the Mexican interests in *Mexican Vegetables*, who testified before the House Subcommittee on Trade. Mr. Macrory urged the committee to consider amending the antidumping statute so as to prevent "normal" below-cost sales, such as those in *Mexican Vegetables*, from being deemed less-than-fair-value sales. Mr. Macrory acknowledged the three conditions to be satisfied before below-cost sales would be excluded, but expressed fear that these would be interpreted too narrowly: "The exception implicit in this language might well have been intended to cover precisely the type of situation being discussed here — *i.e.*, sales below cost occurring in the normal course of business. However, Treasury appears to give it a much narrower interpretation." *Multilateral Trade Negotiations: Hearings Before the Subcomm. on Trade of the House Comm. on Ways and Means*, 96th Cong., 1st Sess. 549 n.3 (1979) [hereinafter cited as *MTN Hearings*] (statement of Patrick Macrory).

125. *See* 19 U.S.C. § 1677b(b) (Supp. III 1979).

126. The below-cost provision, because it applies to sales below average total cost rather than average variable cost, may reach selling practices that are normal and nonpredatory. *See* note 46 *supra*. In times of contracting demand, for example, "*all* sellers may sell at less than fully allocated costs, and . . . in such times it is sensible to sell so long as variable costs are recovered." Ehrenhaft, *supra* note 9, at 1361. Had a variable cost standard been adopted, ordinary below cost sales in the perishable goods market would presumably be outside the ambit of the provision. For as explained at notes 77-79 *supra*, the rational perishables producer will only sell if the price exceeds his variable costs. The deficiency of the "cost" standard in

out of economic necessity do not artificially inflate average foreign market value and lead to less-than-fair-value findings.

The Act's antipredatory purpose demands that below-cost sales be regarded as "substantial" and occurring over an "extended" period of time only if their volume and duration exceed the amount considered normal for perishable agricultural commodities sold under competitive conditions.[127] The standard for "normal" volume and duration of below-cost sales could be based on below-cost sales patterns for domestic growers.[128] If below-cost sales by foreign firms varied substantially in duration or volume from below-cost sales by domestic growers, this would evince the kind of predatory behavior that the Act properly proscribes.

The third condition for exclusion of below-cost sales — inability to recover average costs in a "reasonable period of time" — should also be construed in light of the Act's antipredatory purpose. For most perishable commodities, a reasonable time period extends over several growing seasons;[129] growers of perishables often do not recover their costs in a single season, but may instead realize a profit only over several growing seasons because they cannot effectively

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the below-cost sales provision makes it essential that the Commerce Department apply the requirements for exclusion in a reasonable way.

The Commerce Department clearly has the authority to interpret section 773(b) in the manner argued for here, even if the statute does not explicitly require such an interpretation. Congress gave the administering authority "broad discretionary authority" in making less-than-fair-value determinations. *See* F.W. Myers & Co. v. United States, 376 F. Supp. 860, 878 (Cust. Ct. 1974).

127. A study of cost recovery in the Florida vegetable industry for the years 1968-1978 indicates "that failure to recover full cost is common not only for week-long periods but also for entire production seasons." Schmitz, Firch & Hillman, *supra* note 70, at 649. For one type of lettuce, all sales were made below cost in 46 of the 151 weeks examined, and some sales below cost were made in all but two of the remaining weeks. *Id.* (Table I). In one year out of four, Florida vegetable growers failed to cover fully allocated costs. *Id.* at 650.

128. The comparison with "normal" sales finds support in the legislative history to the provision. The Senate Finance Committee Report states: "[The three conditions for exclusion] would not require the disregarding of below-cost sales in every instance, for under *normal business practice* in both foreign countries and the United States, it is frequently necessary to sell obsolete or end-of-model year merchandise at less than cost." (emphasis added). S. REP. No. 1298, *supra* note 98, at 173, *reprinted at* 7310. The sale of perishable merchandise at below-cost prices may be analogized to the sale of "obsolete" merchandise in the above passage. Moreover, the Treasury Department memorandum submitted to the House Ways and Means Committee in 1973 indicates that any amendment to the Antidumping Act regarding below-cost sales should not penalize *inter alia* the sale of "highly perishable merchandise at prices less than their fully allocated cost of production for limited periods of time." *See Trade Reform: Hearings on H.R. 6767 Before the House Comm. on Ways and Means*, 93d Cong., 1st Sess. 2244-45 (1973). *See also* Certain Fresh Winter Vegetables from Mexico, 44 Fed. Reg. 63,588, 63,591 (1979) (tentative determination) (making reference to "obsolete merchandise" analogy and to Treasury memorandum).

129. In the case of the Florida vegetable industry, for example, it is common for a producer to go an entire season without recovering full costs. *See* note 127 *supra. See also* R. KOHLS & J. UHL, *supra* note 13, at 173-74 (using an example of an apple orchard operator to show that a producer may undergo several years of "very low" prices before abandoning his orchard completely); note 106 *supra*.

control the quantity of goods available in the market at any given time.[130] Only if a grower fails to recover costs incurred over several growing seasons should his below-cost sales be excluded from the base used to calculate foreign market value. Because failure to cover costs over several seasons indicates that the grower may be engaging in predatory or manipulative practices, a less-than-fair-value finding is warranted.[131] The administrative decision in *Mexican Vegetables* is consistent with this view. The Commerce Department concluded in that case that section 773(b) should be interpreted in light of the "normal business practice"[132] of the domestic industry and declined to exclude below-cost sales of perishable vegetables imported from Mexico.

B. *Using Econometric Tests To Distinguish Predatory Pricing from Normal Price Variation*

The methodology traditionally used by the Commerce Department to determine the existence of dumping should be modified in several respects to reflect peculiarities in the markets for perishable goods.[133] At a minimum, the price comparison formula must fully account for negative margins in the calculation of weighted average dumping margins.[134] Including negative margins would alleviate some of the problems inherent in applying the current formula to perishable commodities. This change, however, would not prevent spurious results in cases where nonpredatory price variations exist

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130. See text at notes 57-60 *supra*.

131. *See Vegetable Imports Hearings, supra* note 118, Pt. 2, at 7-8 (statement of Edward Schuh). Mr. Schuh, Deputy Assistant Secretary for International Affairs and Commodity Programs, indicated that it is not unusual for a perishable commodity to be marketed at less than cost in a given year. He added, however, that "If it happens year after year, then you obviously have a problem." *Id.* at 8.

In order for exclusion of below-cost sales to occur, it would also be necessary to satisfy the other two statutory requirements — namely, that the below cost sales be "substantial" and "over an extended period of time" in relation to "normal business practice." In this way, the likelihood of applying the provision to "innocent" below-cost selling of perishable goods is minimized.

132. Certain Fresh Winter Vegetables from Mexico, 45 Fed. Reg. 20,512, 20,515 (1980) (final determination of sales at not less than fair value):

. . . determining when to exclude below-cost sales from computation of fair value [requires] . . . interpret[ation] of the language of the statute in light of the normal business practice of the industry subject to the investigation. In this case it would be appropriate to disregard below-cost . . . sales only if such sales constituted 50% or more of a grower's total sales to [the comparison market]. . . .

45 Fed. Reg. at 20,515.

133. The Treasury and Commerce Departments felt that this deviation from the traditional price comparison formula was justified in *Mexican Vegetables. See* 44 Fed. Reg. at 63,591 (tentative determination) ("When prices in the markets of comparison fluctuate continuously and substantially during the period of investigation, practices generally used in cases concerning relatively stable conditions may be found inappropriate and more suitable methods may be used."); 45 Fed. Reg. at 20,515 (final determination).

134. *See* text at note 50-54 *supra*.

between American markets and comparison markets.[135] Some variations in the prices of perishable goods between markets are to be expected even in the absence of predatory behavior, and these variations may result in unwarranted less-than-fair-value findings.[136]

A better method for determining the existence of predatory pricing of perishable goods would distinguish between random and systematic price variations. This distinction can be made by using a well-accepted econometric test[137] that gauges the behavior of one variable in terms of the behavior of another. This test would entail matching the price[138] of a particular good sold in the comparison market with the price of the same good sold in an American market by the same producer on the same day.[139] In the absence of dumping, identical prices in the two markets would, if plotted as matched pairs[140] of daily prices, fall on a forty-five degree line through the origin of a Cartesian coordinate system. Because prices will almost never be identical in both markets, the actual line plotted by the paired prices will rarely coincide with the theoretical forty-five degree line.[141] Simple statistical procedures, however, can establish how "close," in a statistical sense, the actual line is to the theoretical forty-five degree line[142] — *i.e.*, whether observed price variations between the domestic and comparison markets are random or provide

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135. *See* note 166 *infra* for a hypothetical example of how normal price variation in the U.S. and comparison markets can result in a less-than-fair-value finding under the traditional price comparison formula, even if negative margins were fully taken into account.

136. *See* text at notes 89-91 *supra*.

137. For a text that surveys basic econometric theory without presupposing advanced mathematic expertise on the reader's part, see J. KMENTA, *supra* note 17. An excellent, short discussion on the nature of econometrics is contained in J. JOHNSTON, ECONOMETRIC METHODS 1-7 (1972). For a comprehensive treatment of probability theory and various statistical techniques, see D. LEABO, *supra* note 13. A less comprehensive but more readable text on probability theory and statistical techniques is L. CHAO, STATISTICS METHODS AND ANALYSIS (2d ed. 1974).

138. It would still be necessary, of course, to adjust for differences in transportation costs, circumstances of sale, etc., in order to ensure that the prices compared were truly comparable. These tests do not eliminate the need to make "the myriad adjustments . . . essential to permit a fair comparison of the price of products sold [in different] markets with differing consumer demands and disparate distribution organizations, not to mention separate cultures and currencies." Ehrenhaft, *supra* note 9, at 1367.

139. The "comparison market" is either the home market or a third country market, depending on the availability of data. Constructed value may also be used in cases of data insufficiency. *Id. See* text at notes 32-34 *supra*.

140. A "matched pair" of prices consists of a U.S. and a comparison market price, each representing the price of identical merchandise sold on the same day by the same grower.

141. *See* J. JOHNSTON, *supra* note 137, at 6 ("No economic data ever give an exact fit to simple relations of this kind since linear or other simple forms are only an approximation to possibly complex but unknown forms and also since only a small subset of all possible explanatory variables can usually be included in any specification.").

142. Because the Commerce Department rarely examines more than a sample of the transaction data, *see* note 154 *infra*, statistical methods are particularly appropriate. *Cf.* L. CHAO, *supra* note 137, at 5 ("Obviously, it is quite impracticable to calculate a true value of any population which has a large number of potential observations. Statistical investigation usu-

evidence of predatory price discrimination.[143]

In *Mexican Vegetables*, the Commerce and Treasury Departments used an econometric test to conclude that the observed price variation between the domestic market and the comparison market (Canada) was nondiscriminatory.[144] The equation underlying the government's test can be stated in the following form:

$$\bar{P}_{USit} = \alpha + \beta \bar{P}_{Cit} + \epsilon_{USit}[145]$$

This model posits that some number of producers, "i," each sell perishable produce at a given day, "t." $\bar{P}_{USit}$ is the ith producer's average export price to the United States on a particular day; $\bar{P}_{Cit}$ is the same producer's average price[146] to the comparison market for mer-

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ally involves the collection of partial or incomplete information called the *sample*, on the basis of which inference is made about the true parameter value.").

143. Econometric and statistical tests require a statement of a null hypothesis (H_0), which is the hypothesis to be tested, and an alternative hypothesis(H_a), which is a counter hypothesis. *See* J. KMENTA, *supra* note 17, at 113. The null hypothesis is usually a statement that a population parameter is equal to a specified value, and will be rejected if the sample value is "very different" from the specified value. *Id.* at 112-13, 116. The chosen "statistical level of significance" (usually .05 or .01) defines what sample values are "very different" from the hypothesized value. *Id.* at 119.

Use of statistical procedures will not always yield a correct conclusion because of the reliance on sample evidence. *Id.* at 122. Two types of errors have been identified: Error Type I and Error Type II. Error Type I is the probability of incorrectly rejecting the null hypothesis — *i.e.*, rejecting the null hypothesis when it is in fact true. Error Type I is given precisely by the chosen level of significance. Error Type II is the probability of failing to reject the null hypothesis when it is in fact false. *Id.* Professor Jan Kmenta has analogized these concepts to the probability of reaching an erroneous verdict in a criminal trial: Error Type I is analogous to the probability of convicting an innocent man, while Error Type II is analogous to the probability of acquitting a guilty man. *Id.* The probability of Error Type II can be reduced only at the expense of Error Type I (the level of significance), and vice versa. *Id.* at 125.

144. *See* Certain Fresh Winter Vegetables from Mexico, 44 Fed. Reg. 63,588, 63,591 (1979) (tentative determination) ("tentatively accepting the results of the matched pair analysis as reflecting no likelihood of sales at less than fair value"); Certain Fresh Winter Vegetables from Mexico, 45 Fed. Reg. 20,513, 20,516 (1980) (final determination) ("The results of the F-test performed on the regression show conclusively that there is no discrimination in the pricing of fresh winter vegetables sold in the U.S. compared with those sold in Canada."). The Treasury Department relied exclusively on the econometric test, while the Commerce Department offered additional support, including some statistical evidence, to buttress its determination of no sales at less than fair value.

145. This equation is known in econometrics as a simple linear regression model. *See* J. KMENTA, *supra* note 17, at 201; D. LEABO, *supra* note 13, at 461. The Commerce Department made the formal assumptions that P_{USit} and P_{Cit} have bivariate normal distributions, with the variances equal and constant from observation to observation. *See* Interrogatory from Dr. Richard L. Boyce to Michigan Law Review Association (February 8, 1982) (on file with the *Michigan Law Review*) [hereinafter cited as Boyce Interrogatory]. Dr. Boyce, a former economist with the Departments of Commerce and Treasury, administered the econometric test used in *Mexican Vegetables*.

146. An average of Canadian prices on a particular day was used when a given grower made several sales — at varying prices — on that day. *See* Boyce Interrogatory, *supra* note 145.

This use of averages may create a condition known as heteroskedasticity. This problem can be corrected by using data sets comprising equal numbers of transactions. *See generally* J. Kmenta, *supra* note 17, at 249-69, 322-29 (discussing heteroskedasticity and proper estimation methods for "one-way grouped" data).

chandise of the same size sold on the same day. ϵ_{USit} is a "distur-
bance" term,[147] which takes on any number of possible values within
a normal probability distribution and represents the "random" fac-
tors such as misinformation in the market, differing supply and de-
mand conditions, and unobserved differences in quality (*e.g.*, color
and maturity) that might cause nonpredatory price variations be-
tween American and other markets.

If prices in the United States were truly identical to prices in the
producer's home market or a third-country market, the values of α
and β obtained by plotting actual data on American and comparison
market prices would be zero (0) and one (1), respectively. Estimated
values for α and β for any set of data can be derived through simple

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147. The disturbance term might have a distribution as follows:

ϵ_{it}	Probability of ϵ_{it}
-1	.25
0	.50
$+1$	.25
	1.00

See generally J. KMENTA, *supra* note 17, at 199. The presence of the disturbance term means
that P_{USit} takes on any number of possible values within the same probability distribution for
a given P_{Cit}. This can be illustrated graphically as follows:
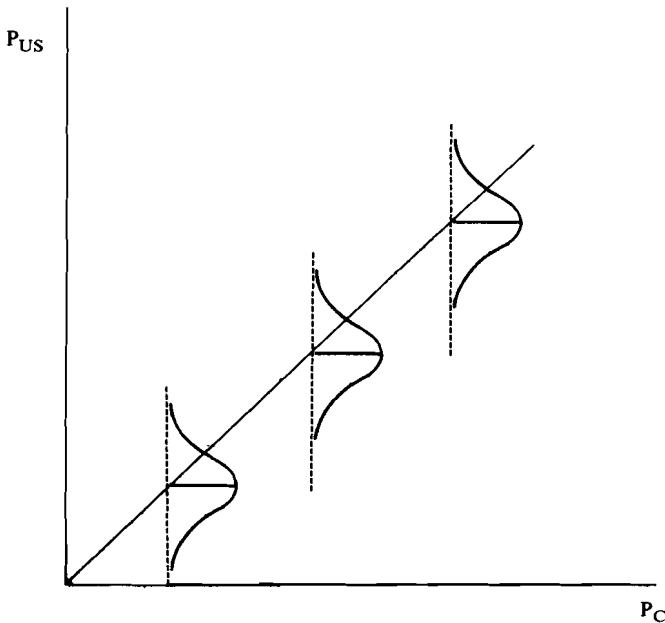
STOCHASTIC RELATION BETWEEN P_{US} AND P_C

On average, the points in the population are expected to fall on the 45 degree line represented
in the graph.

linear regression.[148] The regression line is the line that best "fits" the actual distribution of data points created by matching domestic prices with prices in the comparison market. The sample regression line will have specific values for α and β; a statistical test, the "F test,"[149] is then applied to determine whether there is a statistically significant difference between these values and the values that would obtain for α and β in the absence of price discrimination.[150]

The use of this test would be advantageous for several reasons. The regression method that forms the core of this test is simple, and its use is widely accepted among professional statisticians and economists.[151] Regression analysis has been used by several courts in

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148. Linear regression involves picking the line that best fits the scatter of points so as to minimize the sum of the squared deviations between the actual values of P_{US} and the values of P_{US} on the regression line. *See* Fisher, *Multiple Regression in Legal Proceedings*, 80 COLUM. L. REV. 702, 707 (1980). The estimates of α and β obtained by the linear regression model have many desirable statistical properties that make it a widely used method in forecasting and testing hypotheses. *See generally* J. KMENTA, *supra* note 17, at 216.

149. The "F-test" is based on the "F distribution," which has a number of applications in statistics and econometrics. *See generally* J. KMENTA, *supra* note 17, at 147-50, 366-74. As used to determine the existence of price discrimination, the F-test jointly tests the hypotheses that $\alpha=0$ and $\beta=1$ in the population of perishable sales. An alternative procedure, the T-test, can be used to test separately these same hypotheses. The F-test is preferred, however, since it is a more "powerful" approach — *i.e.*, it has a lower Error Type II. *See* Interrogatory from Professor Jan Kmenta to Michigan Law Review Association (Jan. 26, 1982) (on file with the *Michigan Law Review*) [hereinafter cited as Kmenta Interrogatory]. Professor Kmenta is a Professor of Economics at the University of Michigan. See Appendix *infra*, for an example of the use of the F-test to determine the existence or nonexistence of dumping.

150. In theory, the econometric test can be performed separately for each producer being investigated or for the industry as a whole. The producer-specific approach may be preferable since this is the approach used under the traditional methodology; however, sampling requirements and cost considerations may favor use of an industry-wide approach in many cases. The industry-wide test was used in *Mexican Vegetables*. *See* Boyce, Interrogatory, *supra* note 145.

There appears to be no doubt that the Commerce Department has the statutory authority to use statistical methods in conducting less-than-fair-value investigations. The Tariff Act specifically authorizes the use of "generally recognized sampling techniques" in determining foreign market value, 19 U.S.C. § 1677(f) (Supp. III 1979), and the legislative history indicates that the authority to use these techniques applies to the investigative, as well as the duty assessment stage. *See* SEN. REP. NO. 249, *supra* note 18, at 96, *reprinted at* 482. The antidumping regulations also provide the Commerce Department with authority to use statistical and econometric methods. 19 C.F.R. § 353.20 (1981) provides that if less than 80% of sales in the home market were made at the same price, and a weighted average of the prices is deemed inappropriate, "the Secretary will use *any other method* for determining value which he deems appropriate" (emphasis added). 19 C.F.R. 353.20(c) (1981). This provision also applies to the determination of "fair value," because, under § 353.1 of the regulations, "all references in the sub-part to foreign market value should be considered to apply to 'fair value.'" It follows that the Commerce Department has the authority to use an econometric test of the kind described in this Note.

151. *See* Fisher, *supra* note 148, at 702. Professor Fisher observed that regression analysis, though not a new technique, has been used increasingly in recent years:

[Regression analysis] is not a new tool, going back in its origins to Carl Friedrich Gauss, an extremely important mathematician born about 200 years ago. Nevertheless, the practical use of multiple regression has grown very substantially over the past twenty-five years or so. This growth is due partly to the development of modern statistical methods, partly to increased availability of decent statistical data, and perhaps most of all to the development of the electronic computer.

Id.

cases involving employment discrimination.[152] Additionally, this test, like many other statistical tests, is valid even in cases involving relatively small sample sizes.[153] It is possible, therefore, that the Commerce Department could arrive at more correct findings with sample sizes much smaller than those used under the traditional price comparison formula, thereby expediting the less-than-fair-value phase of an antidumping proceeding.[154] Expedition would satisfy both domestic perishables producers — who argue that import relief procedures are too slow and cumbersome to provide effective protection from dumping[155] — and those who argue that lengthy

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152. *See* Finkelstein, *The Judicial Reception of Multiple Regression Studies in Race and Sex Discrimination Cases*, 80 COLUM. L. REV. 737 (1980). Professor Finkelstein indicates that the use of regression models in employment discrimination cases has become commonplace:

> The use of multiple regression models in employment discrimination cases apparently was first suggested in print in a 1975 student note. The idea caught on with remarkable rapidity. Following publication of the note, plaintiffs begain introducing regression studies in many class-action discrimination cases, with the defendants usually responding with counterstudies. An obfuscating statistical war spread rapidly. By 1979, federal District Judge Fred M. Winner could complain, with only a touch of hyperbole, that Title VII class actions had become "contests between college professor statisticians who revel in discoursing about advanced statistical theory."

Id. at 737. Regression analysis has also been used in regulatory proceedings before the Commodity Exchange Authority, the Federal Power Commission, the Securities and Exchange Commission, the Civil Aeronautics Board, and the Federal Communications Commission. *See* M. FINKELSTEIN, QUANTITATIVE METHODS IN LAW 212-13 (1978).

153. In principle, the F-test can be applied when the sample consists of only 3 matched pairs of prices. *See* Kmenta Interrogatory, *supra* note 149. Of course, much larger samples would be used in practice to increase the accuracy of the results.

154. This might be particularly important in cases involving perishables, because it will often be difficult to gather data from more than a small percentage of all producers. In *Mexican Vegetables*, for example, the "matched pairs" used in the regression analysis of cucumbers represented only 8.0% and 9.1% of the total Canadian and U.S. sales in the data base, rather than the 60% or more that is usually used under the traditional methodology. *See* 44 Fed. Reg. at 63,592 (tentative determination). In selecting a sample, it is necessary to observe the usual safeguards to ensure that the sample is not "biased." *See* D. LEABO, *supra* note 13, at 7:

> [I]n most cases the primary objective of a sample is to be as representative of the universe as possible. That is, the sample should be an approximate small-scale replica of the population from which it came. If some items are more likely to be selected than others, the sample is biased. Any bias in a sample may lead to invalid inferences or conclusions.

155. The Trade Agreements Act of 1979 has blunted some of this criticism by shortening to 235 days the time period within which an antidumping investigation must normally be completed. *See* Ehrenhaft, *supra* note 9, at 1371 (chart illustrating new timetable). Producers of perishables are unlikely to be satisfied with this shortened period of investigation since they have argued for a 20-day investigative period in connection with a related statute, section 201 of the Trade Act of 1974:

> In further reference to import relief under Section 201, we support the Senate Finance Committee agreement for an expedited procedure calling for a 90 day investigation under certain circumstances. This procedure, however, does not reach certain types of potential injury which can befall the perishable fresh fruit and vegetable industry because of the very short season, perhaps 8-10 weeks. A sudden or continuing surge of imports at peak domestic harvest could easily destroy domestic growers however efficient they are.

MTN Hearings, *supra* note 124, at 641 (statement of Diamond/Sunsweet, Inc.). *See also id.* at 625 (statement of California Avocado Commission):

> Many perishable commodities have a short marketing life after harvest or are harvested in only a short time period each year. Market disruption from imports for such commodi-

less-than-fair-value determinations chill imports and reduce consumer welfare.[156]

One potential drawback associated with a test of this sort, however, may support the application of another statistical procedure known as the "difference of means" test. Implicit in the regression equation outlined above is the notion that American prices are determined by prices in the comparison market.[157] As Part II demonstrated, the structure of agricultural markets and the economic characteristics of perishable commodities are likely to cause considerable variations in prices between markets.[158] Because there is no reason to suppose that growers base their prices in American markets on the prices that they receive in the comparison market, the U.S. price is not necessarily a dependent variable relative to the comparison market price.[159] The regression equation above, however, treats the U.S. price as a dependent variable and the comparison market price as an independent variable.[160] If the status of the variables is reversed — *i.e.*, if the price in the comparison market is treated as the dependent and the U.S. price as the independent variable — the regression might yield different values of α and β.[161] The framing of this test, therefore, can in some cases influence its result.[162]

By using a "difference of means" test, the Commerce Department could avoid any difficulties that arise from the implicit presence of a causal hypothesis in the regression method. This test would indicate whether there is a statistically significant difference between the average price in American markets and the average price in comparison markets. The difference of means tests would, like the econometric test, utilize "matched pairs"[163] of U.S. and comparison market prices. This price discrimination test would determine whether the difference (D) between the U.S. price and the comparison market price was, on average, equal to zero.[164] The test statistic is

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ties, if not quickly corrected, could nullify a producer's performance with that commodity for an entire year. Further, corrective action effective after the completion of harvest or marketing would not ameliorate the disruption and, in effect, would invite similar disruption in future years.

156. *See* note 109 *supra*.

157. *See* Kmenta Interrogatory, *supra* note 149.

158. *See* notes 80-84 *supra* and accompanying text.

159. *See* Kmenta Interrogatory, *supra* note 149.

160. *See* text at note 145 *supra*.

161. *See* Kmenta Interrogatory, *supra* note 149. Philip Howrey, an economics professor at the University of Michigan, was the first to recognize and apprise the author of this Note of the "causation" problem.

162. *See id.*.

163. *See* note 140 *supra*.

164. The average of the differences, $\bar{D}$, is precisely equal to the difference of the average

$$\frac{\bar{D}}{\hat{S}_D/\sqrt{n}}$$

where $\bar{D}$ is the average difference, n is the number of matched pairs and S_D is the sample variance of the differences, D. The value of the test statistic would be compared to the critical value on the t probability distribution[165] to determine whether the average difference between U.S. and comparison market prices was significantly different from zero.[166]

Because it tests directly for the existence of a difference between average prices in an American market and average prices in the comparison market, the "difference of means" test may be preferable to the regression procedure in many cases. Unfortunately, the test may not be very discriminatory if there are not enough producers or comparable transactions in the two markets.[167] Neither technique is

U.S. and comparison market prices, computed from the "matched pairs." Thus, the difference of means test is testing the hypothesis that the average prices are equal.

165. The "t" or "student's t" distribution is reproduced in statistics and econometrics textbooks. *See, e.g.*, J. KMENTA, *supra* note 17, at 162.

166. For an explanation of the difference of means test as applied to "matched pair" data see L. CHAO, STATISTICAL METHODS AND ANALYSES 271-74 (1974).

The following example will illustrate the application of the difference of means test to "matched pairs" of hypothetical prices:

P_{US}	P_C	$D(P_C - P_{US})$
3	4	1
5	5	0
4	5	1
6	5	−1
5.5	6	0.5
8	7	−1
9	8	−1
10	9	−1
5	10	5
9.5	11	1.5

Using the procedure outlined in note 44 *supra*, it can be shown that these prices would yield a dumping margin percentage under the traditional methodology of 20.8%. If negative margins are taken into full account, the dumping margin percentage would be 7.69%. In each case the margin exceeds the *de minimis* value of 0.4% and a less-than-fair-value finding would issue. To apply the difference of means test, the sample estimate of the average difference, $\bar{D}$, and the standard error of the differences, S_D, must be computed.

$$\bar{D} = \frac{1 + 0 + 1 + (-1) + 0.5 + (-1) + (-1) + (-1) + 5 + 1.5}{10} = .5$$

$$\hat{S}_D^2 = \frac{\Sigma D^2 - (\Sigma D)^2/n}{n-1} = \frac{33.50 - 25/10}{9} = \frac{31.5}{9} = 3.44$$

$$\hat{S}_D = \sqrt{3.44} = 1.86$$

Therefore, $\dfrac{\bar{D}}{\hat{S}_D/\sqrt{n}} = \dfrac{.5}{1.86/3.16} = .85$

The hypothesis should be rejected if .85 is greater than t_9. The value of t with 9 degrees of freedom at the .05 level of significance is 1.383. Therefore, the null hypothesis of no price discrimination is not rejected at the .05 level of significance, and a finding of no sales at less than fair value would issue.

167. If exclusion of below-cost sales is necessary under § 773(b), these sales can be excluded from the data base for the comparison market without vitiating the econometric tests.

foolproof,[168] and it can be expected that advocates on both sides of an antidumping proceeding will make use of any statistical procedure that supports their position. But either or both of these well-accepted procedures would distinguish between random and systematic variations in the prices of perishable agricultural goods more effectively than the traditional price comparison methodology.

CONCLUSION

Both congressional intent and economic theory suggest that the antidumping enforcement effort should be limited to predatory behavior. The identification of predatory behavior in cases involving perishable agricultural goods is complicated by two economic characteristics of these goods — substantial price variations and frequent below-cost sales — that distinguish them from manufactured and storable agricultural goods. Because the traditional formula used to determine the existence of dumping fails to account for these peculiar characteristics, it reaches conduct that the Antidumping Act does not proscribe. This formula could be improved by changing the treatment of negative margins in the calculation of dumping margin percentages and by construing section 773(b)'s below-cost sales provision consistently with the economic realities of the market for perishable goods. These improvements, however, would still fail to distinguish normal price variations from predatory price discrimination.

By using the econometric tests proposed in this Note, the Commerce Department could reconcile the purposes of the antidumping law with the economic realities of perishable agricultural goods. This reconciliation, moreover, would not entail substantial costs: neither exotic economic expertise nor additional data are necessary to apply the proposed tests. The procedures underlying the tests are simple, straightforward, and widely accepted. The proposed tests, therefore, represent a clear improvement over the traditional price comparison formula and should be applied in cases involving perishable agricultural goods whenever sufficient data are available.

Exclusion would simply change the variable for the comparison market price in the underlying model. Instead of representing average daily price in the comparison, the model's variable will represent average daily *above-cost* price in the comparison market. This change in the comparison market variable may lead to different estimates of the model's coefficients and may cause rejection of the null hypothesis. This is perfectly acceptable as long as the test is explicit about the nature of the variable underlying the model. *See* Kmenta Interrogatory, *supra* note 149. Likewise, exclusion of below-cost sales will not invalidate the difference of means test.

168. Professor Jan Kmenta has indicated that he would perform all three tests and make the difference of means result dispositive if the two formulations of the econometric test yielded inconsistent results, since this test is neutral from a causation standpoint. *See id.*.

APPENDIX

The following example illustrates the application of regression analysis and the F-test to a hypothetical set of "matched pairs" of prices in the United States and the comparison (foreign) market. The "matched pairs" are:

| U.S. PRICE (P_{US})	COMPARISON MARKET PRICE (P_C)
$ 5	$ 4
5	6
3	6
2	4
9	7
7	6
2	3
10	7
6	4
11	13

The application of the traditional methodology for making less-than-fair-value determinations would result in a positive less-than-fair-value finding even though the average prices in the two markets are identical — $6. The dumping margin under the traditional methodology would be computed by dividing the average dumping margin by the average price in the U.S. Using the procedure outlined earlier,[169] it can easily be shown that the average dumping margin is $1.30. Dividing $1.30 by the average U.S. price of $6 yields a dumping margin percentage (often referred to as a "weighted average dumping margin") of 21.7%. The 21.7% figure is well above the usual *de minimis* standard, which has never exceeded 0.4%.[170]

Regression analysis and the F-test, however, would yield a negative less-than-fair-value finding. By applying the technique of linear least-squares regression, one can obtain a sample regression line that serves as an estimate of the population line, which is hypothesized to have a slope of 1 and a y-intercept of 0 (*i.e.*, in terms of the model, α = 0 and β = 1). The estimated values of α and β in the sample regression line are then compared, by means of the F-test, to determine whether they are "close" in a statistical sense to the hypothesized values. Application of the usual procedures of least squares regression analysis yields a sample line with a slope of .889 and a y-intercept of .667. The graph below depicts the hypothesized line, the regression line, and the actual "scatter" or plot of the "matched pairs" of prices. Also indicated are the "residuals" for each of the

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169. *See* note 44 *supra*.
170. *See* note 45 *supra*.

two lines. The "residual" is the vertical distance between the actual data point and either the hypothesized or the regression line.

Scatter Plot of "Matched Pairs" of prices, with hypothesized population line and sample regression line
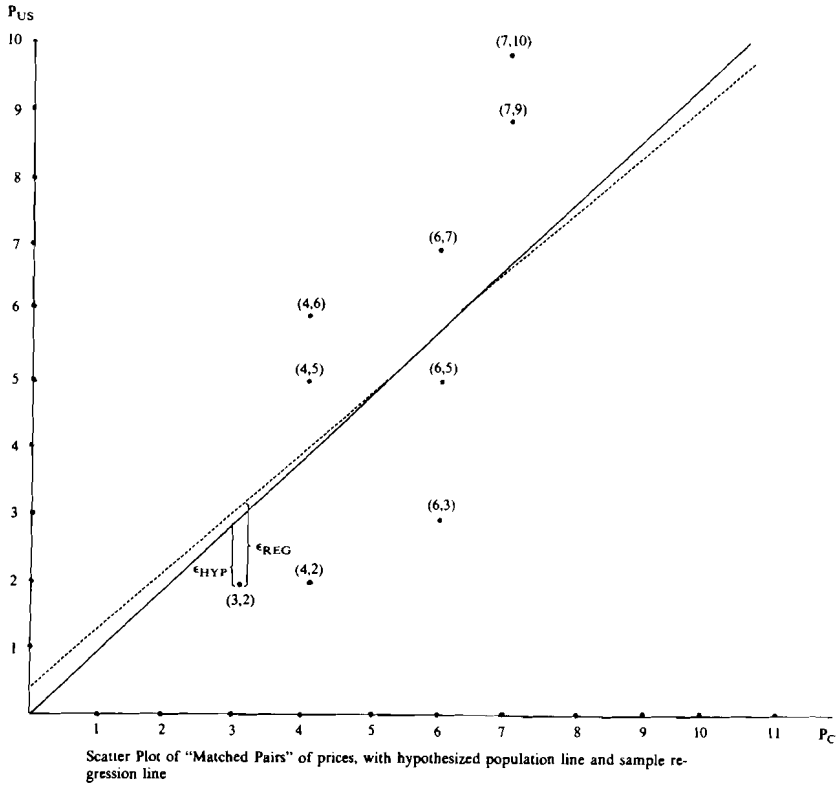
It is necessary to compute the sum of the squares of the residuals of all of the data points for each of the two lines to use the F-test to test the hypothesis of no price discrimination (that is, to test the hypothesis that $\alpha = 0$ and $\beta = 1$).[171] Computation of the sum of the squares of the residuals associated with the hypothesized line (ESS_{hyp}) yields a figure of 38. The sum of the squares of the residuals of the regression line (ESS_{reg}) is 37.111.

Using the F-test to test jointly the hypothesis that $\alpha = 0$ and $\beta = 1$ is a particular application of a widely recognized use of the F-test involving so-called "restricted" and "unrestricted" models.[172] Following the general procedure, the test statistic

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171. *See* R. PINDYCK & D. RUBINFELD, ECONOMETRIC MODELS AND ECONOMIC FORECASTS 117-78 (2d ed. 1981).

172. *See id.*

$$\frac{(ESS_{hyp} - ESS_{reg})/q}{ESS_{reg}/(N - k)}$$

must be computed.[173] Here, q, the number of restrictions, is 2, n, the number of observations, is 10, and k, the number of estimated parameters, is 2. If the hypotheses that $\alpha = 0$ and $\beta = 1$ are true, then the test statistic above will have an F distribution with q degrees of freedom in the numerator and $N - k$ degrees of freedom in the denominator.[174] To test the hypothesis, the computed test statistic is compared with the value of the F distribution (which can be obtained from a table) corresponding to the above degrees of freedom and at some significance level (usually 1% or 5%). If the test statistic is larger than the value from the F table, the null hypothesis is rejected, and we conclude that there is price discrimination.[175]

The value of the test statistic in this example is .096, which is less than the critical value in the F table at the 5% level of significance, 4.46. For the above data, therefore, the null hypothesis would not be rejected at the 5% level of significance, and, contrary to the results of the traditional methodology, one would have to conclude that there is no price discrimination between the two markets. The observed price differences are simply the result of stochastic or random factors.

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173. This corresponds to the test statistic in the Pindyck and Rubinfeld text, although different subscripts are used here to simplify the explanation.

174. R. PINDYCK & D. RUBINFELD, *supra* note 171, at 117-18.

175. *Id.*