A Law and Economics Study of Rail Freight Rate Regulation: Traditional Standards, Ramsey Prices, and a Case of Neither

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This article uses economic theory to analyze freight rate standards. It first presents the economic theory of second best, or Ramsey, pricing which, in a sense, justifies certain levels of price discrimination. The article then examines the traditional standards of rail rate lawfulness in light of the economic theory, concluding that the traditional elements of cost and demand characteristics are also the elements crucial to the economic theory, and operate in the same direction. It is, however, noted that pair-wise comparisons of demand sensitivities are not taken far enough in the traditional analysis. This is followed by a description of a recent controversy involving the rates on recyclable and virgin materials where the existence of externalities apparently led Congress, the courts and the ICC to minimize the importance of demand characteristics. The article concludes by recognizing the large parallels of traditional and theoretical pricing, but notes with some concern the recent departure from traditional standards, particularly worrisome if broadly applied.

I. INTRODUCTION

The importance of economic analysis of the law is increasingly being recognized by those who study and implement the law. One role that the lawyer-economist can play in this dialogue between disciplines is to explain an existing aspect of economic theory to the non-economists, and

then show how it can be used to help evaluate particular legal issues.[1] This article will be in that tradition, examining the setting of rail freight rates from a legal and economic approach.

In the next section, the economic theory of second-best, or Ramsey, prices will be presented. The theory applies to multi-product or multi-service firms with significant economies of scale. The general rule that emerges is that the less price elastic is the demand for a commodity or service relative to that of others, the higher should be its price or rate relative to marginal cost.

In light of this economic analysis, Section III then examines the traditional standards for judging the legality of rail freight rates; standards which have developed in the ICC and judicial case law. It is found that the application of the traditional concepts of cost characteristics and demand characteristics is largely in accord with the economic theory of Ramsey pricing; rates tend to vary directly with costs and inversely with demand sensitivity. Besides the inaccuracy involved in measuring cost and demand factors, a theoretical flaw found is that comparisons made between the demand characteristics of commodities are not typically carried far enough. That is, while a high rate may be justified due to a finding that demand is relatively insensitive to rate hikes, or inelastic, what courts typically fail to ask is whether demand is *more* or *less* inelastic than that of other commodities.

Section IV focuses on a recent controversy involving freight rates for recyclable and virgin materials where, prompted by Congress, the ICC and courts reached a result which departed from both the economic and legal standards developed in the earlier sections. Because of the possible significance of this departure, apparently due to an attempt to reach certain environmental goals, the process by which it was reached will be examined in some detail.

II. THE THEORY OF RAMSEY PRICING

Regulators are often charged with setting or approving the rates or prices of the output produced by the industry they regulate. Any time such intervention in or regulation of markets occurs, resource allocation is affected, as is the level of social welfare or well-being. This section first describes the "best," "most efficient," welfare-maximizing prices possible, and why they are unattainable with declining-cost industries. It then explains the theoretical resolution of the problem when applied to such

1. *See, e.g.*, the presentations of statistical analysis and its application to specific legal problems in Fisher, *Multiple Regression in Legal Proceedings*, 80 COLUM. L. REV. 702 (1980); and Finkelstein, *The Judicial Reception of Multiple Regression Studies in Race and Sex Discrimination Cases*, 80 COLUM. L. REV. 737 (1980).

firms which produce more than one type of output. This resolution is embodied in the notion of Ramsey prices.[2] It is important to get a basic understanding of the theoretical implications of pricing in order to be better able to judge the appropriateness of legal standards of ratemaking.

One generally considers the use of second-best solutions to problems only when the first-best solution is unattainable. In pricing models, the first-best solution is to have price equal to marginal cost. Absent monopsonistic power, consumers will purchase the commodity or service until the value to them of the last unit consumed equals price. Assuming that price equal marginal cost, the efficient result of marginal cost equalling marginal utility is reached: the value to society of the last unit of consumption (the marginal utility) equals the value of the inputs used to produce that last unit (the marginal cost). Assuming declining marginal utility and increasing (or more slowly falling) marginal cost, fewer units produced and consumed would decrease total welfare since more would be given up (the value of lost consumption) than gained (the value of resources saved). Similarly, any additional units would decrease society's welfare since, again, more would be given up (here the value of resources used in production) than gained (the value of additional consumption).

If, however, economies of scale are large relative to demand, production would occur where marginal cost is less than average total cost. In this case, first-best prices would lead to negative profits for the producer. Referring to Figure 1, if price is set efficiently such that it is equal to marginal cost (level a), the total revenue of the firm (price x quantity) is represented by the diagonally shaded area OadX. Total cost (average cost x quantity) is the larger vertically shaded area ObcX. The difference (total cost—total revenue), area abcd, is the total *loss* the firm will incur in supplying that amount of output at price a.

Since U.S. policy is to allow regulated firms such as railroads to be profit making enterprises without subsidy, prices must be allowed to rise above marginal costs. Pricing above marginal costs, however, decreases total welfare since output will be less than the most efficient output. This deadweight welfare loss is measured by the area between the demand and marginal cost curves (the amount by which the value of consumption exceeds the cost of production). Nevertheless, regulation would be relatively easy if firms produced only one output and could not price discriminate within its one market. The price would be set at a level where demand could cover all costs; that is, where price equalled aver-

2. The term "Ramsey pricing" is traced back to the early work of Frank Ramsey, *A Contribution to the Theory of Taxation*, 37 ECON. J. 47 (1927).

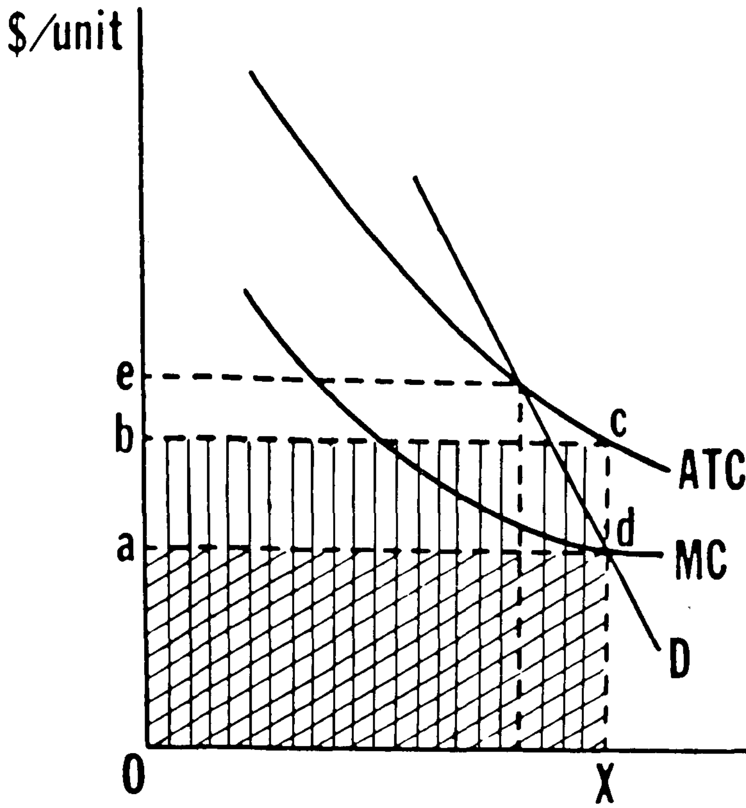

Figure 1.

age total cost (at level e in Figure 1). If, however, the firm produced more than one product or service, the problem becomes more difficult.

In Figure 2 are drawn demand curves for two products or services offered by one regulated firm where marginal cost is less than average total cost.[3] For simplicity, it will be assumed that in the relevant regions marginal costs will be constant and equal for the two goods ($MC^X = MC^Y$). The most efficient price would equal this marginal cost with outputs X and Y. In order for the firm to avoid a loss, however, the prices must be set somewhere above marginal cost. If prices for both were set an equal amount over marginal cost, say at $P^X = P^Y$, the quantities demanded would drop to X' and Y'. It can be seen, however, that the demand for

3. Average total cost is a complex concept here because of the assumption of shared fixed costs. Since average total cost is defined as total cost divided by total output, the average total cost for any output of X depends upon the level of output of Y. No average total cost curves therefore are drawn in Figure 2.

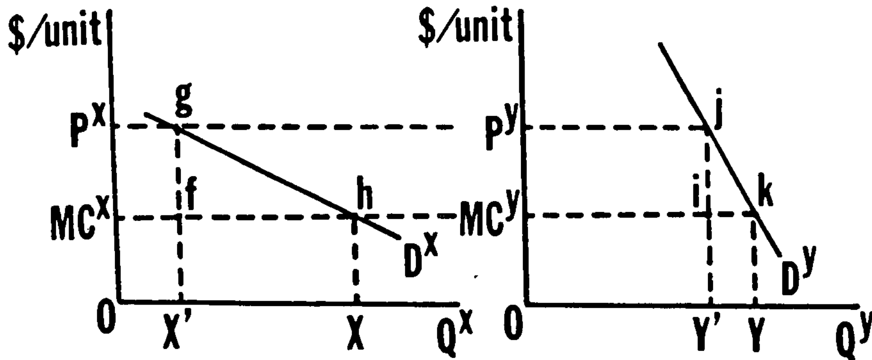

Figure 2.

good Y is more price inelastic than that for good X.[4] The adverse welfare impact of the same change in price (from $MC^X = MC^Y$ to $P^X = P^Y$) is much smaller in market Y than in market X since the change in output (from Y to Y' as opposed to X to X') and resulting deadweight welfare loss (the area of triangle ijk for market Y and of triangle fgh for market X) is smaller. If we are to charge prices above marginal costs, then, it would seem better in terms of minimizing deadweight loss (and so maximizing total surplus) to charge relatively higher prices on those commodities like Y which are relatively less responsible to price changes.

A crucial question of rate making is therefore to determine how far above marginal cost prices should rise for each commodity in order to minimize the social welfare loss of non-first-best pricing while still allowing the railroads to at least break even. This is where the theory of Ramsey pricing enters for it is precisely that question which the theory attempts to answer. If we start by defining the objective function as total surplus, or welfare, as measured by the area under the demand curves less total cost, the Ramsey price analysis solves the very problem of maximizing total surplus subject to the firm earning nonnegative profits.

The seminal work in this area was done by Baumol and Bradford in 1970 when they developed pricing rules for multiproduct monopolists.[5] Braeutigam extended the analysis to cover the situation where there exist other competitive producers or modes of transportation.[6] Janis developed a model which goes even further and allows the markets for the two

4. Price elasticity of demand is defined as the percentage change in the quantity demanded caused by a small percentage change in price. For a given percentage change in price, the larger is the percentage change in quantity, the more elastic, or less inelastic, is demand.

5. Baumol and Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 AM. ECON. REV. 265 (1970).

6. Braeutigam, *Optimal Pricing with Intermodal Competition*, 69 AM. ECON. REV. 38 (1979).

goods to be interdependent.[7] The basic result which applies to the Baumol-Bradford model as well as Braeutigam's when regulating only that firm with declining costs is that the percentage of the price which represents returns in excess of marginal cost for each good, weighted by its own-price elasticity of demand, should be equal to that for all other goods it produces:[8]

$$(1) \qquad \frac{P^a - MC^a}{P^a} \epsilon^a = \frac{P^b - MC^b}{P^b} \epsilon^b = \ldots$$

Referring back to Figure 2, since the demand for good X is more elastic than that for good Y ($\epsilon^X > \epsilon^Y$), the price for good X should be closer to marginal cost than that for good Y (or, given $MC^X = MC^Y$, $P^X < P^Y$); a result consistent with our intuition. The result of Braeutigam's other model and of Janis' models have similar effect: The relatively lower is the own-price elasticity of demand, the relatively higher should be the price when compared to marginal cost.[9]

It should be noted that these pricing rules are not definitive in and of themselves. Other considerations have been left out. For example, to the extent that the demand and cost curve fail to reflect externalities, such as the environmental or energy implication of the use of recyclable or virgin materials, the results of a Ramsey-price analysis will not lead to truly second-best prices. Perhaps a unit decrease in the use of recyclables is somehow more damaging or is more significant than a unit decrease in the use of virgin materials. Also left out of the analysis is a notion of fairness. While it may be more efficient to charge a higher price for the use of an inelastically-demanded commodity or service such as Y, is it fair, especially since it costs the same amount for both X and Y?

With this background in the welfare theory of pricing of multiproduct firms, let us now turn to an examination of how the ICC and courts traditionally have dealt with ratemaking issues. We will then turn to the specific case of rail rates for recyclable and virgin materials.

III. Traditional Standards of Rate Lawfulness

In the preceding section, a framework was developed which can be utilized to evaluate the efficiency, or welfare-maximizing tendency, of prices for a regulated multiproduct firm. This section now takes the setting of rail freight rates and holds it up to those theoretical standards. For rail freight rates to be lawful they must be both nondiscriminatory and

7. Janis, *The Sensitivity of Partially Regulated Second-Best Prices to Intercommodity Cross Elasticities of Demand*, 20 Econ. Letters 277 (1986).

8. *See* Appendix for a quick derivation of the basic results.

9. *See* Janis, *supra* note 7.

reasonable. With this in mind, the development in the case law of each criterion is described and then analyzed from the economics perspective. Significant accord is found between the case law and economic results, though also found is some misinterpretation of movement data and often a lack of intercommodity comparisons of demand sensitivities.

A. *Discrimination*

Section 2 of the Interstate Commerce Act [ICA] makes unlawful personal discrimination on "like and contemporaneous service in the transportation of like kind of traffic under substantially similar circumstances and conditions."[10] An example of this is found in *Wight v. United States*,[11] where the defendant railroad charged different rates to two shippers on movements of identical goods (beer) over the identical route. The Court ruled the rates to be in violation of § 2, despite the railroad's claim that the lower rate to one of the shippers was necessary to meet competition from another railroad.[12]

Another section in the ICA dealing with discrimination is § 3(1), which states:

> It shall be unlawful for any common carrier . . . to make, give, or cause any *undue or unreasonable preference* or advantage to any particular [carrier or commodity] . . . or to subject any particular [carrier or commodity] . . . to any *undue or unreasonable prejudice* or disadvantage in any respect whatsoever: . . .[13]

Though § 3(1) does not contain the word "discrimination," it is the provision of the ICA with the broadest application to discrimination, there being no need for the degree of similarity of conditions as required in § 2.[14] Section 3 is also cited as the source for § 10741(b) in the revised version of the ICA, which forbids common carriers from subjecting shippers to "unreasonable discrimination."[15] Read into the § 3(1) ban of undue preference or prejudice is a requirement that there exists some competitive injury flowing from the rate structure. Because of its wider breadth of application, § 3(1) discrimination will be the only type of discrimination

10. 49 U.S.C. § 2 (1982).

11. 167 U.S. 512 (1897).

12. *But cf.* Texas & Pacific Ry. v. ICC, 162 U.S. 197 (1896) where the Supreme Court allowed two different rates on identical goods and routes in order to meet competition from foreign water carriers.

13. 49 U.S.C. § 3(1) (1982) (emphasis added).

14. *See* I.L. Sharfman, The Interstate Commerce Commission, vol. III-B, 530 (1936).

15. 49 U.S.C.A. § 10741(b) (West Spec. Pamph. 1979). *See also* "Historical and Revision Notes" accompanying § 10741, where it is stated that, "The words 'subject . . . to unreasonable discrimination' are substituted for 'to make, give, or cause any undue or unreasonable preference or advantage . . . to any undue or unreasonable prejudice or disadvantage,' . . . ." *Id.*

analyzed in this section.[16]

Before going any further into the discrimination question, it is necessary to explore the definition of the very word "discrimination." Prof. F.M. Scherer states:

> No simple, all-inclusive definition of price discrimination is possible. But very tersely, price discrimination is the sale (or purchase) of different units of a good or service at price differentials not directly corresponding to differences in supply cost.[17]

Bonbright puts it this way:

> Among economists there would probably be general agreement that the practice of exacting different charges for different classes of service rendered at the same marginal costs constitutes discrimination, and equally general agreement that failure to impose higher charges for services rendered at markedly higher marginal costs is also discriminatory.[18]

A comparison of rates alone, then, is an insufficient basis upon which to determine the existence of discrimination. The essence of discrimination is not inequality of rates, but inequalities in the relationships of rate to cost. The dollar mark-up from costs, however, does not seem an appropriate candidate as a measure of discrimination, for charging eleven dollars to ship something which costs the carrier ten dollars to handle seems discriminatorily high when compared to a rate of $101 for the shipment of something costing $100: Though both rates are one dollar above costs, it would be a ten percent markup as opposed to one percent. Let us therefore initially define discrimination as the charging of rates which are different percentages above cost.[19] Bonbright notes that this definition of discrimination, "[a]s a practical, first approximation . . . is probably more widely applicable than any proposed alternative."[20]

It should be noted that a finding of discriminatory rates should *not* necessarily lead to a finding of illegality, of "undue" preference, prejudice or discrimination. We shall see that discrimination can be justified by other "transportation conditions" such as the value of service or the exist-

16. A third section of the ICA which relates to rate discrimination is § 4, which forbids charging a higher amount for shipping a good a shorter distance in a given direction, a particular type of locational discrimination. For example, if a railroad ships wheat from point A to point C, and B lies on the tracks somewhere in between, the railroad is prohibited by § 4 from charging a higher rate from B to C than A to C.

17. F.M. Scherer, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE, 253 (1st ed., 1970).

18. J. Bonbright, PRINCIPLES OF PUBLIC UTILITY RATES, 374 (1961).

19. In our welfare analysis, nondiscriminatory prices for transportation services would be those with equal price-cost margins, (P-MC)/P, or equal price-cost ratios, P/MC.

20. Bonbright, *supra* note 18, at 375. Bonbright also puts forth the definition of discrimination discussed in the preceding paragraph; that is, of differences in price not equalling differences in costs, but notes that this definition "can be given only a very limited application and is quite inapplicable to the general design of a rate structure." *Id.* at 377.

ence of carrier competition, or by other more general policy considerations. In our economic analysis, these were the demand characteristics which lead to differing price-cost ratios for various commodities, and the externalities which lead to adjustments in the results of the theoretical pricing rules.

The traditional rate discrimination test includes four steps. The Court in *Chicago & E. Ill. R.R. v. United States* gave a representative description to this test:

> To support a finding of a violation of section 3(1), it must be shown (1) that there is a disparity in rates, (2) that the complaining party is competitively injured, actually or potentially, (3) that the carriers are the common source of both the allegedly prejudicial and preferential treatment, and (4) that the disparity in rates is not justified by transportation conditions.[21]

It is also commonly held that the burden of proving the first three components of undue preference and prejudice is on the complaining shipper, and that once met, the burden shifts to the carrier to justify the rate disparity.[22] In essence, it is up to the shipper to establish the existence of discriminatory rates and injury from them, and then up to the carrier to show that the rates are not *unduly* discriminatory.[23] Let us now look in more detail at the three crucial steps in the determination of illegal rate discrimination:[24] (a) relative rate disparity, (b) competitive injury, and (c) justification of the discrimination.

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21. 384 F. Supp. 298, 300 (N.D. Ill. 1974), *aff'd mem.*, 421 U.S. 956 (1975). Similar statements can be found in Harborlite Corp. v. ICC, 613 F.2d 1088, 1091-92 (D.C. Cir. 1979) (citing *Chicago & E. Ill. R.R.* as the "leading case"); A. Lindberg & Sons v. United States, 408 F. Supp. 1032, 1037 (W.D. Mich. 1976); Baltimore & O. R.R. v. United States, 391 F. Supp. 249, 259 (E.D. Pa. 1975), *aff'd* 594 F.2d 856 (4th Cir. 1979); Increased Rates on Frozen Fruits and Vegetables, 351 I.C.C. 676, 682 (1976); and Prince Albert Pulp Co. v. Canadian National Rys., 349 I.C.C. 482, 491 (1974).

22. *Harborlite, 613 F.2d at 1092; Balt. & O. R.R.*, 391 F. Supp. at 1037; *Chicago & E. Ill. R.R.*, 384 F. Supp. at 300; Atchison, T. & S.F. Ry. v. United States, 218 F. Supp. 359, 375 (N.D. Ill. 1963) ("It thus appears that the ICC, for over twenty years, has ruled that the defendant carriers bear the burden of . . . justify[ing] a rate disparity."); *Increased Rates on Frozen Fruits*, 351 I.C.C. at 682; and Continental Steel Corp. v. N.Y., Chic. & St. L.R.R., 256 I.C.C. 167, 174 (1943).

23. *See*, New York v. United States, 331 U.S. 284, 305 (1947) ("Thus discrimination . . . [has been] established. But that is not the end of the matter. For *'mere discrimination does not render a rate illegal under § 3'* [cite]. Section 3 condemns 'any undue or unreasonable preference or advantage' and 'any undue or unreasonable prejudice or disadvantage.' ") (emphasis added) *See also Consideration and Control of Commercial Conditions in Railroad Rate Regulation*, 40 YALE L.J. 600, 604 (1931) [hereinafter cited as *Commercial Considerations*].

24. The fourth step being that the carrier is the common source of preference and prejudice. *See also* D.P. Locklin, ECONOMICS OF TRANSPORTATION, chapters 18 & 22 (1972), for a good survey of discrimination and reasonableness and for discussions of many of the cases cited below.

RELATIVE RATE DISPARITY

The language of the first step of the § 3(1) test almost invariably refers to disparities in "rates." This causes some concern since we have already shown that differences in rates without reference to costs are relatively meaningless. When we examine each case more closely, however, it becomes apparent that the Commission and courts *are* concerned with the ratio of rates to costs. Though the use of cost criteria to justify "rate" disparities is formally relegated to the fourth step, they are usually considered, at least in part, in the first step.[25] For example, before "rates" are ordered down to levels not exceeding those for competing commodities, the similarity of cost factors are often noted.[26] If costs are deemed equal, a measure of "rate" disparity also measures "ratio" disparity. Also, instead of making allegations on the basis of differences in rates, they are often made on the basis of differences in percentages of certain standard rate classes which already reflect cost.[27]

To establish a § 3(1) claim, then, a complaining shipper must first prove the existence of "rate disparity." It is typically not a showing of simple dollar-rate differences (unless costs are the same), however, but a showing of a difference of rates relative to the costs of providing the transportation service.

COMPETITIVE INJURY

The complaining shipper must then show that a competitive relationship exists with a relatively favored shipper or commodity, and that the shipper has been or might be injured in that relationship. Several factors

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25. The court in the *Harborlite* case noted that a "mere difference in the rates . . . does not alone amount to a 'disparity' under § 3(1)," 613 F.2d at 1095, but that "[a] disparity, *by definition*, involves a difference in rates, *distance and terminal costs considered*," *id.* at 1096 (some emphasis added). The *Harborlite* court makes explicit the viewing of *both* rates and costs in the first step of the discrimination test, though it left certain cost factors such as volume and regularity of movements, curves and grades of the track and frequency of washouts and snows for the fourth step of justification. *See id.* at 1100-01.

26. *See, e.g.*, the following cases cited in Locklin, *supra* note 24, at 533: Atlas Waste Material Co. v. Penn. R.R., 147 I.C.C. 740 (1928); Glidden Co. v. Ill. Cent. R.R., 109 I.C.C. 721 (1926); Abilene Flour Mills Co. v. Abilene & S. Ry., 101 I.C.C. 14 (1925); and Kellogg Toasted Corn Flake Co. v. Atchison, T. and S.F. Ry., 33 I.C.C. 534 (1915).

27. *See, e.g.*, Chicago Board of Trade v. Ill. Cent. R.R., 344 I.C.C. 818, 831 (1973), *aff'd sub nom. Chic. & E. Ill. R.R.*, *supra* note 21. Noting that class rates were based primarily on distance, adjusted by terminal expenses, the ICC stated there that "docket No. 28300 comparisons are a valid measure to determine whether a *disparity in rates* exists, ..." 344 I.C.C. at 832-33 (emphasis added), citing Cudahy Packing Co. v. Akron, C. & Y. R.R., 318 I.C.C. 229 (1962), *aff'd sub nom. Atchison, T. & S.F. Ry.*, *supra* note 22, where percentage of first class rates were also used. Percentage of first class rates was also the standard of discrimination used in *Continental Steel*, and percentage of "maximum reasonable rates" was the standard in National Cottonseed Products Ass'n v. Atlanta, B. & C.R.R., 256 I.C.C. 89 (1943).

are used in the determination of competitiveness, including similarity of use, as well as the value and the physical properties of the commodities. The Commission does not, however, require that products be perfectly substitutable to compete.[28]

Once competition is found, the complaining party must also establish some form of injury. There would seem to be a very close connection between proving competition and proving injury, since if competition exists there would automatically be someone to take advantage of, or be injured by, any rate disparity. While this connection has often been recognized by the ICC and courts,[29] cases exist where no injury is found even though there exist both rate disparities and competition.[30]

Other factors enter into the question of injury. A common type of evidence which has been offered is the effect that rates have had on the movement of the allegedly prejudiced commodity. The ICC has not, however, been consistent in dealing with this type of data.[31] Additional considerations include the profit margin of the shipper, the intensity of competition faced by the shipper, and the dependence it has on transportation.[32] By whatever means injury is proved, however, it has been held that it "need not be proved to the point of certainty."[33]

It appears, then, that in general, proof of competition and rate disparity alone, unless the competition is especially intense, is insufficient as proof of injury. Many other factors must be weighed against each other, including the history of commodity movements and existence of other determining factors.

JUSTIFICATION OF DISCRIMINATION

Once discrimination is proven by a showing of rate disparity and

28. *See* Locklin, *supra* note 24, at 532-33.

29. *See, e.g.,* Chesapeake & O. Ry. v. United States, 11 F. Supp. 588, 592 (S.D.W. Va.), *aff'd per curiam* 296 U.S. 187 (1935); *National Cottonseed Producers*, 256 I.C.C. at 94-95; Ill. Cent. R.R. v. United States, 101 F. Supp. 317, 323 (N.D. Ill. 1951); *Prince Albert Pulp*, 349 I.C.C. at 492; and New York v. United States, 331 U.S. at 310.

30. *See, e.g.,* Arvonia-Buckingham Slate Co. v. Aberdeen & R. R.R., 174 I.C.C. 767, 769 (1931) (where no injury was found even though the two commodities in question were competitive to the point of interchangeability and the choice between them "frequently" depended on their delivered priced).

31. For a discussion of the misuse of such data, *see infra* note 158 and accompanying text. For conflicting cases, *see, e.g., National Cottonseed Products Assn.*, 256 I.C.C. at 93-94 (where injury was found from high rates when shipments decreased); Atchison, T. & S.F. Ry. v. United States, 218 F. Supp. at 371 (where injury was found although shipments increased); Bronstein v. Balt. & O. R.R., 215 I.C.C. 137, 141 (1936) (where no injury was found when shipments had not decreased); and New England Grain & Feed Council v. ICC, 598 F.2d 281, 286 (D.C. Cir. 1979) (where no injury was found although production had decreased).

32. Atchison, T. & S.F. Ry. v. United States, 218 F. Supp. at 370.

33. *Harborlite*, 613 F.2d at 1098.

competitive injury, the burden of proof shifts to the carrier to justify the discrimination. The court in *Harborlite v. ICC* stated that the burden the carriers bear includes justifying "the particular disparity existing," and not just proving that *some* disparity is justified.[34] The justification is based upon "transportation conditions," under which falls many factors. It is at this step where the most interesting welfare implications arise, for it is here where the carriers and the ICC justify departures from purely cost-based pricing.

Some cost factors are still included within this step of justification. It was shown in the section on relative rate disparities that rates are typically considered side-by-side with costs in the initial step of the discrimination test either through a showing that costs are similar or through comparisons to class rates. Other elements of costs, however, also enter *after* the finding of discrimination.[35] In a theoretical sense, it may seem a bit perplexing to use costs in the first step to establish disparities, and then again in the fourth step to justify those same disparities. The practicalities of the situation, however, may be the primary cause of this apparent discrepancy. First, the costs often considered in step one are very general in nature, such as those reflected in class rates, whereas those used at the justification stage are far more specific to the particular movements involved. This detailed cost information would most often be in the hands of the carriers, who also would generally have the capability to better understand the data. By allowing comparison of class-rate percentages to suffice for the proving of disparities, the burden of showing this detailed analysis is not placed upon the shipper (unless, of course, if the class-rate percentages do not show a disparity). Second, if competitive injury is not proved by the shipper, the detailed cost analysis would be avoided altogether. This splitting of costs may blur their dual purpose in determining discrimination (as defined by different price-cost ratios) and justifying discrimination, but if applied properly and specific types of costs are not used at both stages, the end results still should come down to whether or not deviations from purely cost-based pricing are justified.

Cost, however, is not all that is included in "transportation conditions." Demand factors exist which can justify deviations from cost, as

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34. *Id.* at 1100.

35. The Commission in California Walnut Growers Assn. v. Aberdeen & R. R.R., 50 I.C.C. 558, 561 (1918), lists several of the cost-connected factors, including type of car used, extra services required, containers in which the commodity is shipped, the commodity's weight and susceptibility to damage, and the identification of who actually does the loading and unloading. Conditions in the terminals is another such factor. Atchison, T. & S.F. Ry. v. United States, 218 F. Supp. at 367. As was mentioned in note 25 above, volume and consistency of movements, the condition of the track and roadbed, and the weather are further cost factors which are considered at the fourth step. *Harborlite*, 613 F.2d at 1100-01.

was recognized very early on in *Boston Chamber of Commerce v. Lake Shore & M.S. R.R.*:

> The element of cost of service which may at one period have been recognized as controlling in fixing rates has long ceased to be regarded as the sole or most important factor for that purpose. The value of the service with respect to the articles carried, the volume of business and the conditions and force of competition are justly considered to have controlling weight in determining the charges for transportation.[36]

One of the factors listed is value of service. The general welfare notion, similar to our demand analysis in Section II above, is that the greater the value to the shipper, the greater portion of overhead costs that shipper should carry. One rough indicator of value of service is the value of the commodity itself, a standard used in many cases.[37] Another type of evidence which might indicate the value of service, and so the willingness of shippers to pay higher rates, is a showing of whether or not quantities transported dropped as rail rates rose. The evidence here would be similar to the type introduced concerning the issue of injury.[38]

Competition from other carriers is another factor listed in the *Boston Chamber of Commerce* case. This factor has been recognized in many other recent cases.[39] This, too, can be viewed in terms of demand elasticities. The greater the competition from other carriers and commodities, the more elastic will be demand, thereby justifying lower rates.

One final source of justification not often used is a direct appeal to public policy. An example of this is competition between ports. Locklin states:

> The establishment of the "port differentials" was based on the rivalry of the various ports for the export grain business [and so not on costs]. Originally these differentials were made in order to equalize the in rate to the various

36. 1 I.C.R. 754, 760-61 (1888).

37. *See* Locklin, *supra* note 24, at 159-60. In Wrigley Co. v. Aberdeen & R. R.R., the Commission said: "The difference in value alone, in our opinion, justifies the higher ratings [and so rates]." 161 I.C.C. 41, 44 (1930). *See also* other cases cited in Locklin at 535, n.104.

38. Though note that if the shippers could too easily absorb this rate increase, a finding of competitive injury in step two would seem unlikely. *See also* the recognition of profit margins as a factor in Atchison, T. & S.F. Ry. v. United States, 218 F. Supp. at 370; and *Harborlite*, 613 F.2d at 1096-97 (citing the *Atchison, T. & S.F. Ry.* case in its discussion of competitive injury). In a similar vein, note also the ICC's unwillingness to listen to complaints of the railroads that lowering rates to the allegedly prejudiced shippers would decrease railroad revenues: "A possible loss of carrier revenue is not a defense to the maintenance of unduly preferential and prejudicial rates . . . ." Brazos River Harbor Navigation District v. Abilene & S. Ry., 322 I.C.C. 529, 533 (1964), citing the *Cudahy Packing Co.* case. This argument and that of the willingness of shippers to pay high rates are actually closely related, for if the shippers were unwilling to pay higher rates, raising the rates would have decreased traffic greatly and so decreased total revenue. Lowering the rates, would, in fact, lead to increased revenues under those conditions.

39. *See, e.g.*, Atchison, T. & S.F. Ry. v. United States, 218 F. Supp. at 367; *Brazos River Harbor*, 322 I.C.C. at 531; *Continental Steel Corp.*, 256 I.C.C. at 173.

ports with the out rates, i.e., the ocean rates from the port to European ports.[40]

So the Commission in *Boston Chamber of Commerce* equated the export traffic rates to Boston with those to New York, but did not do that for local traffic.[41]

In sum, after a showing by complaining shippers of relative rate disparities and competitive injury, it is up to the carriers to show that any existing preference or prejudice is not undue, as explained by transportation conditions. Although costs were considered in the first step of the analysis, they are often considered again here, and at times the cost analysis for both steps may even merge into one. Once costs are determined, variances from purely cost-based pricing can be justified by evidence of such things as carrier competition, the value of service, or occasionally by direct reference to public policy.

B. Reasonableness

It has been shown that a rate may be found illegally discriminatory in relation to the rate for a competitive commodity, shipper, or location. We shall now examine when a rate may be deemed unlawfully high or low in itself. Though no necessity exists in such a case for providing competitive injury, we shall see that the reasonableness of a rate is not considered in isolation from other rates.

The basic provision of the ICA which forbids unreasonable rates is § 1. Section 1(5) has traditionally stated that "[a]ll charges made . . . shall be just and reasonable." Section 1(6) mandates "just and reasonable" rate classifications.[42] The language in the updated version of the ICA reads: "A rate, classification, rule or practice related to transportation or service provided by a carrier . . . must be reasonable."[43]

Cost-Imposed Limits on Rates

In Section II we noted that marginal costs are crucial in rate-making decisions. It was claimed that only when prices (or rates) equalled marginal costs was society's welfare maximized. Nevertheless, any rate exceeding marginal cost, though decreasing welfare, would at least serve

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40. Locklin, *supra* note 24, at 84.

41. 1 I.C.R. at 761. The ICC in *Chicago Board of Trade* was also concerned with export competition between Chicago and the Gulf ports. Another example of public policy entering directly into the rate-making process was in the early case of Howell v. N.Y., L.E. & W. R.R. The Commission there approved a uniform rate for shipments of milk to New York City for movements starting within 200 miles of the city, in part upon the recognized public interest in an adequate milk supply. 2 I.C.R. 162, 176 (1888).

42. 49 U.S.C. §§ 1(5) & (6) (1982).

43. 49 U.S.C.A. § 10701(a) (Supp. 1986).

the purpose of contributing to the recovery of fixed or overhead costs. For the firm to break even, all of these fixed costs must somehow be covered. One way to do this would be to spread these costs evenly over all commodities shipped. This is the notion incorporated into "fully allocated" or "fully distributed" costs. It was pointed out, however, that the uniform allocation of fixed costs would not lead to a maximum level of social welfare.[44] In order to maximize welfare, price-cost ratios must vary according to demand factors. With some rates falling below fully allocated costs, however, there must also be rates which exceed fully allocated costs in order to have the firm break even.

The ICC has generally held that rates cannot reasonably fall below variable or out-of-pocket costs (approximating the economist's definition of marginal costs).[45] Not only would the railroad sustain a loss in carrying a commodity at that rate, but the rates on other commodities would have to be increased in order to cover the extra loss. It is important that only the "variable" portions of cost be included within the definition of marginal cost to be used as a rate floor, and the more recent cases stress this:

> Variable costs are the direct costs of labor, material, equipment, supervision, interest and the like incurred solely by the service rendered. They do not include constant costs, which are the expenses incurred on behalf of the operation as a whole, or such items as cost of capital.[46]

The ICC also recognizes that for carrier viability, not only must many rates exceed marginal costs,[47] but others must also exceed fully allo-

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44. *See supra* text accompanying Figure 2.

45. Lumber Rates from the Southwest to Points North, 29 I.C.C. 1, 15 (1914). *See also* United States v. Chicago, M., St. P. & P. R.R., 294 U.S. 499, 506-07 (1935). Note that it is not clear how accurate an approximation out-of-pocket cost is of marginal cost. Bonbright notes that out-of-pocket costs "sometimes" underestimate marginal costs, leaving out "noncash costs (such as depreciation due to wear and tear of equipment) attributable to an increase in the rate of output." Bonbright, *supra* note 18, at 317 n.1. Friedlaender gives a more dismal view: "At most, ICC cost data can be used to describe general cost behavior of railroads . . . [, and] in no way should be used to assess the relative costs of a specific point-to-point commodity movement." Friedlaender, THE DILEMMA OF FREIGHT TRANSPORT REGULATION, 34 (1969). *See also id.*, Appendix A, pp. 191-94.

46. Transit Charge on Soybeans at Points in the South, 351 I.C.C. 366, 377 (1975). *Accord*, Atchison, T. & S.F. Ry. v. United States, 606 F.2d 442, 446 (4th Cir. 1979). This is also explicitly required in the 1978 counterpart of § 1(5): "The Commission may not include in variable costs an expense that does not vary directly with the level of transportation provided. . . ." 49 U.S.C.A. § 10701(b)(2)(B).

47. The ICC has put it in these terms:

> If a carrier were to limit all its rates to variable costs it would incur operating deficits, erode its capital and eventually starve itself to the point of financial extinction . . . . [I]t must make up other costs by increasing the burden on other traffic . . . .
>
> Thus, we could permit but we may not compel the respondents [railroads] to limit line-haul rates to variable costs.

Transit Charges on Soybeans at Points in the South, 351 I.C.C. at 377. *See also* In re Investigation & Suspension of Advances in Rates, 22 I.C.C. 604, 624 (1912); and Central of Georgia R.R.

cated costs.[48] A rate which is above the lower limit may still therefore be found to be unreasonably low.[49] It should be recalled at this point, however, that given the impact of demand factors, increasing rates does not always lead to increased revenues,[50] and so would not always benefit the carrier.

JUSTIFICATION OF INDIVIDUAL RATES

In a manner similar to that used in dealing with discrimination, the ICC first examines costs to establish a starting point for determining the reasonableness of a rate, and then looks to demand characteristics to justify deviations from cost. We will now briefly examine how the costs are determined by the ICC, and then look in more detail how deviations from costs are justified in a reasonableness analysis.

There are many elements to the cost of transporting a commodity.[51] A detailed determination of costs, however, is not typically undertaken. As Locklin states:

> Although cost allocations sometimes figure prominently in rate cases, there are hundreds of cases decided each year without any attempt to find the cost of service in the absolute sense of the word. The usual method of determining the reasonableness of rates on a particular commodity is to compare the rate with rates on commodities which have similar transportation characteristics . . . .
>
> Rate cases can be found by the thousands which illustrate the general rule that analogous articles should normally take the same rate.[52]

As the Court of Appeals, D.C. Circuit, recently put it: "By the doctrine of 'relative unreasonableness,' the unreasonableness of a rate may be demonstrated by showing a significant disparity between that rate and a rate for substantially the same service in a comparable area."[53]

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v. United States, 379 F. Supp. 976, 983-84 (D.D.C. 1974), *aff'd sub nom.* U.S. Clay Producers Traffic Assn. v. Central of Ga. R.R., 421 U.S. 957 (1975).

48. The Court of Appeals, D.C. Circuit, recognized this when it sustained the Commissioner's approval of a rate exceeding variable costs by 63 percent and fully allocated costs by 21 percent. Houston Lighting & Power Co. v. United States, 606 F.2d 1131, 1148 (D.C. Cir. 1979), *cert. denied*, 100 S. Ct. 1019:

> [This pricing scheme] is pertinent to the objective of providing an adequate overall level of earnings. If [the traffic involved here] is viewed in isolation it bears a heavy burden. Yet all shippers ultimately benefit when the rail carriers are able to generate revenues needed for survival.

Id.

49. *See*, Banton v. Belt Line Ry., 268 U.S. 413, 422-23 (1925); Northern Pac. Ry. v. N. Dakota, 236 U.S. 585, 596-97 (1915).

50. *See supra* note 38.

51. *See* Locklin, *supra* note 24, at 426-33.

52. *Id.* at 425.

53. New England Grain & Feed Council v. ICC, 598 F.2d 281, 284 (D.C. Cir. 1979). *See also Commercial Considerations, supra*, note 23, at 611-12; Aluminum Co. of America v. ICC,

In effect, then, this first cost-based step in testing for reasonableness relates closely to our original definition of discrimination, and the first step of the discrimination test: comparing the ratios of rates to costs.[54] The next step of the analysis must then be to justify differences in these rates. Just as demand characteristics are used to justify differences in rate-cost ratios in discrimination cases, they are used for the same purpose in judging the reasonableness of rates. These demand justifications relate closely to notions of the value of service, sometimes put in terms of "what the traffic will bear." As we noted in the discrimination section, the value of the commodity shipped is often used as one measure of value of service.[55] Also, evidence concerning history of movement of traffic is sometimes introduced to illustrate how well shippers of a commodity can bear the rate, though again this evidence is also not always controlling.[56]

Besides demand considerations, public policy can sometimes be directly used to justify departures from purely cost-based pricing. While there are sometimes general references to "public needs" made,[57] typically the public interest must be one in an effective transportation network and its overall role in stimulating the economy.[58] In such cases where general non-transportation related policy issues are brought to the foreground, the ICC often defers the problem to Congress, claiming it beyond its own current authority to handle, and several commentators have stated that a change in policy must be Congressionally authorized. Sharfman writes:

> If reforms . . . are sought, it is not obvious that the regulation of railroad rates is the best method of achieving them; and even if it were, administrative regulation along lines possessing such far-reaching implications should hardly

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581 F.2d 1004, 1008 (D.C. Cir. 1978), *cert. denied* (according to Shepard's reporting service, though no verification in the U.S. Reports could be found), 439 U.S. 980; Louisville & N. R.R. v. United States, 238 U.S. 1, 11-12 (1915); Middlewest Motor Freight Bureau v. United States, 234 F. Supp. 151, 154 (D. Minn. 1964); and Usen Canning Co. v. Atlanta & W.P. R.R., 293 I.C.C. 679, 683 (1954).

54. The court in the *Aluminum Co. of America* case explicitly used ratios, *supra* note 75, as did the same court that year in Potomac Electric Power Co. v. United States, 584 F.2d 1058, 1065 (D.C. Cir. 1978).

55. *See, e.g.,* National Assn. of Employing Lithographers v. Atchison, T. & S.F. Ry., 136 I.C.C. 201, 203-04 (1927), where the Commission stated that it had "uniformly held that where two commodities are similar except for a difference in value the difference in rates may and should be more than an amount just sufficient to provide insurance against loss or damage in transit." *See also* Locklin, *supra* note 24, at 434-38 and cases cited therein.

56. *Central of Ga. R.R.*, 379 F. Supp. at 979. *See also* Darling & Co. v. Alton & S. R.R., 299 I.C.C. 393, 398 (1958), where the ICC refused to lower rates on fertilizer even though evidence had been introduced that traffic had dropped, noting that "there is no positive indication that any of that decline may be ascribed to the rates assailed."

57. *See, e.g.,* Baltimore & O. R.R. v. United States, 345 U.S. at 150.

58. *See* Locklin, *supra* note 24, at 445-447 for a good discussion of public policy justification.

be undertaken without statutory authorization.[59]

Locklin summarizes the cases on public policy in the following manner:

> The general conclusion to be drawn . . . is that although the Commission sometimes recognizes the economic and social effects of certain rates, it is on insecure ground if it modifies rates otherwise reasonable out of deference to these consequences. To give weight to considerations of welfare, economic policy, and the like would hardly be consistent with the statement of the Supreme Court that the standards set up by the Interstate Commerce Act are "transportation standards, not criteria of general welfare."[60]

C. *Summary of Traditional Standards*

We have now examined the standards for testing both the reasonableness and discriminatory nature of rates. A finding of one, however, does not preclude the other. The ICC has often found, for example, that reasonable rates are unduly discriminatory.[61]

Both tests do have certain similarities. Though the Commission seldom puts it in these specific terms, their starting point in both tests typically is a comparison of rate-to-cost relationships. The final step for both is the justification of any rate (or ratio) disparity. This justification typically entails demand considerations, though direct appeals to public policy occasionally are made, and cost factors often have a way of re-entering the analysis as well.

Between the first and last step in a discrimination analysis comes the requirement of showing competitive injury, a step not necessary in a reasonableness analysis. This is because a discrimination analysis tends to focus much more specifically on the relation between the assailed rates and those for competitive commodities or locations. In the reasonableness analysis, the assailed rates can be compared to many more rates; all those with similar transportation characteristics. This distinction is due to the difference in the nature of the complainants' claims. Allegations of discrimination are relatively narrow; just that the movement of a commodity in a market is unduly hampered by a more favorable rate accorded a competing commodity. A claim of unreasonableness naturally brings in a wider spectrum of issues including the viability of the carrier system as a whole and not just specific effects on specific commodities. A system of reasonable rates should ensure a sufficient, though not excessive, amount of revenues to keep the railroads operating. Discrimination

59. Sharfman, *supra* note 14, at 521. *See also Recent Cases*, 101 U. PENN. L. REV. 1226, 1231 (1953).

60. Locklin, *supra* note 24, at 447, quoting from Texas & Pac. Ry. v. United States, 289 U.S. 627, 638 (1933).

61. "[A] rate 'may be perfectly reasonable . . . and yet may create an unjust discrimination or an unreasonable preference . . .,' " *Harborlite*, 613 F.2d at 1091, quoting ICC v. Baltimore & O. R.R., 145 U.S. 263, 277 (1892).

against any specific commodity tends to be of smaller consequence to the carrier overall.

It is necessary then to compare these standards to the ICC to the pricing rules developed in Section II. In that more theoretical analysis, we started with price-cost ratios, and then set various prices above marginal costs based on elasticities of demand. Prices were allowed to rise to the relatively highest level for those commodities with the lowest demand elasticities (i.e. which were least sensitive to price changes), and overall prices were allowed to rise enough to cover the total cost of supplying all transportation services.[62]

This seems to be very similar to what the ICC does when it justifies rate-cost relationships based on the ability to pay or the value of service in both discrimination and reasonableness cases. Though the exactness of numbers which appear in our theoretical analysis is not used, and confusion exists in the handling of movement data, the Commission still approaches the same end.

It is important to note, though, that the examination of the inelasticity of demand for shipping a commodity, or its ability to bear the burden of a rate, is typically viewed in isolation by the ICC. That is, inelasticity is used as a justification of a high rate, but *relative* inelasticity between commodities is not examined. In essence, the traditional standard states that commodities with low transport elasticities can be assigned high rates, whereas our theoretical standard would provide a greater continuum of choices: The lower the elasticity is, the higher the rate (relative to cost) can be. This shortcoming will be highlighted in the next section when we see how the ICC first applied traditional standards to the rates for recyclable and virgin materials.

The final element of the theoretical analysis was the adjustment of the cost and demand-based prices because of factors such as environmental externalities or some abstract notion of fairness. Consideration of these factors by the ICC, analogous to appeals to public policy, may, however, be limited by the scope of the authority given to it by Congress through enabling legislation. The complexities of dealing with this element are also brought out through an examination of the controversy over freight rates on recyclable and virgin materials.

We shall now, therefore, turn to the recyclable-virgin-material controversy. We will have to examine what Congress intended when it passed legislation dealing with the issue. As we shall see, Congress eventually did clearly switch the burden of proof to the carriers in the discrimination analysis, but did it act to change substantive law to allow non-traditional

62. Note that our simple theoretical analysis made no distinction between discriminatory rates and unreasonable ones.

considerations to enter into the ICC's analysis? Or to limit consideration of certain traditional factors? It will also be important to examine how well and to what degree welfare considerations explicitly entered into Congress' formulation of the Acts. The analysis of congressional intent to follow, along with our background in more traditional case law and in the theory of welfare pricing, will then be used to examine and evaluate the handling of the controversy by the ICC and courts.

IV. The Case of Recyclable and Virgin Materials

The previous section described how the ICC has generally dealt with questions of the legality of rates and rate structures. After identifying the related proceedings, this section first examines an initial attempt by Congress in 1973 to affect freight rates on recyclable materials. The poor reception given to it by the ICC is then discussed. An analysis of subsequent legislative, administrative and judicial action follows. It is found that a change in the traditional standards is initiated by Congress, due at least in part to environmental considerations, and then expanded upon by decisions of both the ICC and the District of Columbia Court of Appeals. The first ICC decision applies relatively traditional standards, though it makes the use of rate-cost ratios more explicit. It fails, however, to shift the burden of proof as called for by Congress, and creates exceedingly strict standards of competition. The second decision of the ICC continues to use rate-cost ratios but largely ignores demand considerations, apparently to satisfy the court's reading of congressional intent.

This analysis of the controversy over rates on recyclable and virgin materials is important for several reasons. First, it highlights the inadequacies of traditional analysis in its general unwillingness to make pairwise comparisons of elasticities, and its inconsistent reading of evidence such as movement data. Second, this proceeding continues the trend, good from a welfare point of view, of explicitly using comparisons of rate-cost ratios instead of just rates. Finally, this case illustrates the potentially perverse effects which can be reached when trying to attain a specific goal if the welfare underpinnings of pricing are ignored.

A. Overview of Relevant Proceedings

The problem of the possibly negative effect that rail rates can have on the movement of recyclable materials reached the United States Supreme Court in 1973 in the case of *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*.[63] A student group challenged the inclusion of recyclable rates in a general rate hike approved by the ICC on the theory that rail rates which discriminate against recyclables have a

63. 412 U.S. 669 (1973).

deleterious environmental impact. Though recyclable rates were not ordered down, the Court held here that the students had made a sufficient allegation of injury upon which to base standing.

This issue was addressed by Congress in the same year when the Regional Rail Reorganization Act[64] was passed. Section 603 of the "3-R Act" directed the ICC to "eliminate discrimination against the shipment of recyclable materials in rate structures . . . ."[65] Congress again dealt with the issue in § 204 of the Railroad Revitalization and Regulatory Reform Act of 1976 (the "Quad-R Act") which, in subsection (a), directs the ICC to investigate the rate structure for recyclable and virgin materials, place the burden of proof on the carriers to justify the rate structure, and remove any unreasonableness or unjust discrimination.[66]

In response to § 204, the ICC faced the question of the relationship between rates on recyclables and on virgin material to Ex Parte 319, *Investigation of Freight Rates for the Transportation of Recyclable and Recycled Materials*.[67] Major decisions in Ex Parte 319 were made in February of 1977 (Ex Parte 319-I)[68] and April of 1979 (Ex Parte 319-II).[69]

The appeal from the February 1977 order was heard in *National Association of Recycling Industries v. I.C.C. (NARI-I)*,[70] where the U.S. Court of Appeals sent the case back to the ICC. An appeal was also taken from the latter ICC order, and was decided by the same court in *National Association of Recycling Industries v. ICC. (NARI-II)*.[71]

B. The Early 1970s

Prior to the passage of the 3-R Act, many congressional committees received testimony on recyclable freight rates. In 1971, the Joint Economic Committee heard allegations of discriminatory rates,[72] as did sev-

64. 45 U.S.C. § 701 (1982) (*amended by* 49 U.S.C.A. § 10710 (West 1986)).

65. Pub. L. 93-236, 87 Stat. 985, 1023 (1973). (A revised version can be found at 49 U.S.C.A. § 10710 (West 1986)).

66. Pub. L. 94-210, § 204, 90 Stat. 40 (1976) (*repealed by* Pub. L. 95-473, § 4(b), 92 Stat. 1466, October 17, 1978). (A revised version can be found at 49 U.S.C.A. § 10731 (West 1986)).

67. The ICC earlier responded to § 603 of the 3-R Act in a largely procedural manner in Implementation of the Public Law 93-236—Freight Rates for Recyclables, 346 I.C.C. 408 (1974). The Commission has also allowed rate increases on recyclables in at least twelve general freight rate hearings. *See* National Association of Recycling Industries v. I.C.C., 585 F.2d 522, 526 n.14 (D.C. Cir., 1978), *cert. denied*, 440 U.S. 929 (1979).

68. 356 I.C.C. 114 (1977).

69. 361 I.C.C. 238 (1979).

70. 585 F.2d 522 (D.C. Cir., 1978), *cert. denied*, 440 U.S. 929 (1979).

71. 627 F.2d 1328 (D.C. Cir., 1980), *modified sub no.*, Consolidated Rail Corp. v. National Association of Recycling Industries, 449 U.S. 609 (1981). The U.S. Court of Appeals dealt with certain issues even further in National Association of Recycling Industries v. I.C.C., 660 F.2d 795 (D.C. Cir. 1981).

72. *The Economics of Recycling Waste Materials: Hearings Before the Subcomm. on Fiscal*

eral other House and Senate Committees.[73] Similar claims were made in 1973,[74] and a federal Environmental Protection Agency [EPA] official testified to the existence of probable discrimination, based on differing rate-to-cost relationships.[75] The Chairs of the Federal Maritime Commission [FMC] and the ICC, however, testified that any comprehensive study of rates would take excessive amount of time,[76] and that existing laws were already sufficient to handle the allegations of illegal rates.[77] Senator Frank Moss, an early proponent of instituting an investigation, testified that he felt that discrimination against recyclables existed, stating, "Although the Interstate Commerce Commission has authority to review freight rates to assure nondiscrimination between competing products, it has not chosen to [d]o so with respect to recycled materials.[78]

From this background, § 603 of the 3-R Act was developed. In its final form it reads:

> The [ICC] shall, by expedited proceedings, adopt appropriate rules under the [ICA] which will eliminate discrimination against the shipment of recyclable materials in rate structures and in other Commission practices where such discrimination exists.[79]

Though § 603 certainly showed concern by Congress in the question of freight rates for recyclables, gone from earlier Senate versions were shifted burdens of proof, investigations of rate structures, presumptions of competitiveness, civil penalties, and any policy statement asking for "lowest possible lawful rates."[80] Congress here asked only for the expedited adoption of "appropriate rules" to eliminate discrimination.

The ICC quickly took up the issue posed by the 3-R Act. Rules were proposed in February of that year, 1973, and the final order was out in

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Policy of the Joint Economic Comm., 92d Cong., 1st Sess. 5, 10-61, 118, 120 (Nov. 8, 1971) [hereafter cited as *The Economics of Recycling*].

73. *Transportation Act of 1972: Hearings before the Subcomm. on Transp. and Aeronautics of the Comm. on Interstate and Foreign Commerce on H.R. 11824, H.R. 11826, and H.R. 11207*, 92nd Cong., 2nd Sess., 1201-1228 (May 9, 1972); *Surface Transp. Legislation: Hearings before the Subcomm. on Surface Transp. of the Comm. on Commerce on S. 2362 Surface Transp. Act of 1971 and S. 1092, S. 1914, S. 2635, S. 2841, S. 2842, and S. Con. Res. 56*, 92nd Cong., 2nd Sess., 963-993, 1001-1018 (May 12, 1972).

74. *Resource Conservation and Recycling: Hearings before the Subcomm. on Env't of the Comm. on Commerce on S. 1122, S. 1593, S. 1816, S. 1879, and S. 2753*, 93rd Cong., 1st Sess., 111, 113, 446-494, 507-515 (June 11, July 20 and 26, 1973).

75. *Id.* at 108.

76. *Id.* at 102, 105.

77. *Id.* at 105.

78. *The Economics of Recycling*, *supra* note 72, at 5.

79. 45 U.S.C. § 793 (1974), restated in 49 U.S.C. § 10710 (1982).

80. *See* R. Janis, The Promotion of Welfare Goals through Rate Regulation: The Case of the Rate Relationship of Recyclable and Virgin Materials, 49-57 (Aug. 14, 1980) (unpublished paper, Northwestern University School of Law) [hereinafter cited as Janis (1980)] for further discussion of earlier proposals.

July in Ex Parte 306, *Implementation of Public Law 93-236—Freight Rates for Recyclables*.[81] The terse seven paragraph order merely laid out a fairly standard procedure for the filing and handling of complaints alleging discrimination against recyclable materials. It defined discrimination as:

> encompass[ing], but not . . . limited to, situations in which carriers charge different rates and/or charges for substantially similar transportation services on recyclable materials which are competitive, in whole or in part, with virgin natural resource materials.[82]

It went on to say that the "discrimination" referred to in the 3-R Act would be presumed to be the same as the "unjust discrimination" barred by § 2 of the ICA. It would be up to the complaining party to show otherwise. It will be recalled that the discrimination of § 2 is very narrowly defined, pertaining to "like and contemporaneous service" for transporting "like kind of traffic under substantially similar circumstances and conditions."[83] It is interesting to note here that the Commission was not setting up a rebuttable presumption of fact (e.g. discrimination or no discrimination) but of procedure—of which standard to use to determine fact.

Many adverse comments on the proposed rules (which were nearly identical to the final order) were made, but the ICC rejected all of these arguments. As to its definition of discrimination, it chose not to go beyond § 2 of the ICA since it was thought that the 3-R Act did not authorize it to do so.[84] In ambiguous language, the Commission seemed to reject the broader § 3 discrimination, and nowhere made mention of § 1 reasonableness.[85] The ICC also turned down suggestions of investigations or rebuttable presumptions of competition by noting that such provisions in the Senate version were not included in the final act, and so concluded that it was not Congress' wish to have those aspects required.[86]

The Commission did not consider, however, that it had yet completely fulfilled its obligations under § 603, stating that it believed that the order was "a positive step toward implementation of the requirements of section 603."[87] It is not apparent, however, how it would complete the implementation other than by simply hearing and adjudicating complaints.

There were two dissenting Commissioners; only one with a written

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81. 346 I.C.C. 408 (1974).

82. *Id.* at 416.

83. *See supra* text accompanying notes 10, 11, and 12.

84. *Cf.* Ex Parte 319-I, 356 I.C.C. at 158 n.22: "The use of section 2 alone would be futile in an investigation of the rate structure of recyclable and virgin commodities . . . ." *See* 346 I.C.C. at 409-11 for adverse comments on the definition of discrimination.

85. An example of the ICC's ambiguousness: "We read section 603 to comprehend prohibitions against discrimination contained in the act as it is not written," 346 I.C.C. at 412.

86. *Id.* at 411-13. *See, id.* at 410-11 for comments on investigations and rebuttable presumptions.

87. *Id.* at 413.

opinion. Commissioner O'Neal felt the role chosen by the ICC was "too passive," and that the passage of § 603 "suggests to me that Congress wanted the Commission to do something more than merely reaffirm that upon the filing of a formal complaint a remedy for discrimination exists at the ICC." A broad investigation of the rate structure was the one of "several other courses of action . . . open to the Commission" that O'Neal proposed.[88]

Responding to § 603 of the 3-R Act, though, the ICC simply set up a procedure to hear discrimination complaints. In effect, the ICC said that authority already existed in the ICA to remedy the situation, and that it was willing to hear relevant complaints to be judged under traditional (or stricter than traditional?) standards. Congress therefore accomplished very little, if anything, by the enactment of § 603. This may have been due, however, to the relatively weak language it chose to use in the statute.

C. *The Quad-R Act of 1976*

The enactment of § 603 of the 3-R Act did not quiet the proponents of further legislation on recyclable rates. Even before the ICC had a chance to respond to § 603, new bills were being proposed and old bills reconsidered. Perhaps these advocates foresaw that stronger language would be necessary to further what they saw congressional goals to be. All of this activity led to the passage of § 204 of the Quad-R Act.[89]

It did not take long for the Quad-R Act to make it through Congress. The originating bill was first reported from committee on November 26, 1975, and was signed into law on February 5, 1976. No hearings were held regarding recyclable rates during the consideration of this particular piece of legislation, but as Senator Hartke stated, "This bill represents the culmination of literally years of work . . . ."[90]

Section 204(a) of the Act had its roots in § 105 of Senate Bill 2718.[91] Both versions had five subsections, the first of which is the most important for our purposes.

The final version of subsection (a) of the Act required the ICC to (1) conduct an investigation to determine the legality of rates, (2) place the burden of proof to show the lawfulness of the rates, during the public hearing to be held, upon the carriers,[92] (3) issue orders correcting any

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88. *Id.* at 414.

89. *See* Janis (1980), *supra* note 80, at 59-62 for discussion of congressional debate between Acts.

90. 121 *Cong. Rec.* 38118 (Dec. 2, 1975).

91. *Rail Services Act of 1975*, S. Rep. No. 499, 94th Cong., 1st Sess. 216 (Nov. 26, 1975).

92. Subsection (2), which was not in the original Senate version, came about as an amendment on the floor of the Senate proposed by Senator Tunney. In offering the amendment, Tunney

illegalities, and (4) report annually to the President and Congress on its progress.[93]

Subsection (b) provided for intervention by the EPA. Subsection (c) called for a research, development and demonstration program in the processing, handling and transporting of recyclable materials. Subsection (d) placed ICC orders in this matter subject to judicial review and enforcement. The final subsection, (e), gave definitions of recyclable and virgin materials.

It is important to note the goal attributed to this section by the Senate Commerce Committee. They stated that "it is the intent of the Committee that, consistent with the existing rules of rate-making, *there be no unlawful impediments to the movement of recycled and scrap material.*"[94] (emphasis added) The Committee made clear its intent to encourage the use of recycled materials.

Before we try to assess the intent and meaning of § 204, it will be useful to examine how Congress had dealt with a similar situation in the 1920s, and how the Commission and courts read Congress' actions then. In 1925, Congress passed the Hoch-Smith Resolution[95] in an apparent attempt to lower rail freight rates on products of the then depressed agricultural industry.

Throughout its legislative history,[96] the resolution was seen by the legislators as a general means to aid those industries suffering from depressed times, and as a specific means to aid agriculture. Congress

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expressed his belief that discrimination against recyclables existed, and that significant gains could be made in saving energy and the environment by rectifying the situation. He continued: "[W]hat my amendment simply does is to require that the [ICC] review the situation and that the railroads assume a burden of proof to demonstrate the just, reasonable, nondiscriminatory nature of their own rate structure." 121 *Cong. Rec.* 38450 (Dec. 4, 1975). *See also* Senator Hartke's comments: "In substance what this [amendment] does is shift the burden of proof on the investigation of rates for recyclables for railroads from the present situation where it is in the hands of the claimants and makes the railroads prove that as far as their rates are concerned they are just and reasonable." *Id.* at 38451.

93. Another difference between § 204 of the Act and several prior proposals is that besides investigating the current rate structure, the ICC was also directed to investigate "the manner in which that rate structure has been affected by successive general rate increase . . . ." This was most likely in response to arguments that discrimination between two rates is exaggerated (in dollar terms) by uniform percentage increases in both rates. *See, e.g.*, Senator Moss's comment that percentage increases "aggravat[e] and increase the discrimination already firmly imbedded in the basic rate structure," 119 *Cong. Rec.* 40724 (Dec. 11, 1973).

This question was also discussed at the time of the Hoch-Smith Resolution. *See, e.g., H. Rept. No. 735*, 68th Cong., 1st Sess. 2 (May 13, 1924) and comments at 65 *Cong. Rec.* 11019, 11023 (June 6, 1924).

94. *S. Rept. 94-499, supra* note 91, at 51 (emphasis added).

95. S.J. Res. 107, 43 Stat. 801 and 802 (Jan. 30, 1925).

96. For a summary of the legislative history of the Hoch-Smith Resolution and of the *Ann Arbor R.R.* case, *see* Janis (1980), *supra* note 80, at 64-69.

chose, however, to leave the specific task of correcting rates to the ICC. Though there were differing opinions expressed as to how low agricultural rates would be allowed to go, it seems clear that the consensus of Congress was that the existing rates were too high, and that the ICC should correct the situation. Though stronger language was possible, Congress was fairly direct in calling for "the lowest possible lawful rates."

The Hoch-Smith Resolution was challenged in a case dealing with the shipment of deciduous fruits from California to eastern points. Though the ICC had found these same rates to be lawful in a proceeding two years earlier,[97] it held in 1927 that they were unlawfully high.[98] The district court upheld the Commission's finding,[99] but the Supreme Court reversed it in *Ann Arbor R.R. v. United States*.[100]

The Court found that the ICC had relied upon the resolution in its decision, and that the Commission felt the resolution had effected a change 'in basic law.' "[101] The Court, however, noting that the resolution called only for "lawful changes" in rates, held that its provisions did "not purport to make any change in the existing law, but on the contrary requires that the law be given effect," and that the resolution's call for "the lowest possible lawful rates" was "more in the nature of a hopeful characterization of an object deemed desirable . . . ."[102] The Court here never faced the question of whether or not Congress simply meant that within any lawful zone of reasonableness, the ICC should choose the lowest rate. Rather, it held that the resolution did not "make unlawful any rate which under the existing law is a lawful rate."[103] Nor did the Court ever mention any significance in the fact that they were dealing with a joint resolution and not a fully enacted law.

In summary, even though Congress asked the ICC in very specific language to set the "lowest possible lawful rates" for the movement of a particular group of commodities, the Supreme Court held that the resolution "work[ed] no substantial change in the meaning or operation . . . of the existing law."[104] In this light, let us now go back and interpret the congressional mandate behind the enactment of § 204 of the Quad-R Act

97. California Growers' & Shippers' Protective League v. Southern Pac. Co., 100 I.C.C. 79 (1925).

98. *Id.* 129 I.C.C. 25 (1927).

99. Ann Arbor R. Co. v. United States, 30 F.2d 940 (N.D. Cal. 1928) (per curiam).

100. 281 U.S. 658 (1930).

101. *Id.* at 665.

102. *Id.* at 668-69.

103. *Id.* at 668. For cases recognizing a "zone of reasonableness," *see* United States v. Chicago, Milwaukee, St. Paul & Pac., R. Co., 294 U.S. 499, 506 (1935); Atchison, T. & S.F. Ry. v. Wichita Board of Trade, 412 U.S. 800, 814 (1973). *See also Commercial Considerations, supra* note 23, at 602.

104. 281 U.S. at 669.

of 1976. Was Congress merely making a "hopeful characterization of an object deemed desirable," or was it saying something more?

At first blush, it appears that Congress acted to aid a particular industry in much the same fashion as it had in 1925. Just as with the Hoch-Smith experience, there was a general feeling that rates had gone awry.[105] Also as with Hoch-Smith, there were indications that Congress intended there to be no change in substantive law. Proponents spoke only of ridding the system of existing discrimination.[106] Only traditional terms such as "reasonableness" and "unjust discrimination" were used in § 204.[107] A significant change in traditional standards, though, was that existing rates would be presumed unlawful, leaving it to the carriers to prove otherwise.

It is interesting to note that the Hoch-Smith Resolution was not forgotten by the more recent Congress. In its historical review of the regulation of railroads, the Senate Commerce Committee did make mention of the resolution (though it made no reference of its fate in the *Ann Arbor R.R.* case).[108] It should also be noted that the language of several of the earlier proposals was almost identical to that of the third paragraph of the Hoch-Smith Resolution.[109]

From all of this, should it be concluded that § 204 of the Quad-R Act of 1976 was meant to accomplish, and would be interpreted as accomplishing, nothing more than the Hoch-Smith Resolution of 1925? There are several differences that would seem to lead to a negative response. First, § 204 calls for direct inclusion of environmental considerations by specifically requiring participation of the Administrator of the EPA and compliance with NEPA, highlighting a change that had occurred in background environmental legislation since the 1920s. Second, § 204 mandates an important change in decision-making procedure by specifically

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105. Senator Tunney stated that he believed that the ICC had "allowed a situation to develop which gives a substantial freight rate preference to virgin ores . . . ," and that there was "discrimination, substantial discrimination, against recyclable materials." He went on to say that the ICC "allowed [that discrimination] to develop and it is up to them now to eliminate it." 121 *Cong. Rec.* 38450-51. In a similar vein, Senator Moss, commenting on his views on whether or not the current rates discriminated against recyclables, stated: "[T]hey certainly appear that way to me." 94th Cong., 2d Sess., 122 *Cong. Rec.* 1340 (Jan. 28, 1976).

106. *See supra* note 92.

107. Further support for the following existing standards can also be found in the Senate Commerce Committee's section-by-section analysis of S. 2718 when they stated that '*consistent with the existing rules of rate-making*, there be *no unlawful* impediments" to recyclable traffic, *S. Rept. 94-99, supra* note 91, at 51 (emphasis added). It should be noted, however, that the amendment shifting the burden of proof to the carriers came after this Senate report.

108. *Id.* at 13.

109. *See, e.g.*, § 703(a) of S. 2767, 93d Cong., 1st Sess., 119 *Cong. Rec.* 40723 (Dec. 11, 1973), and § 4(a) of *Resource Conservation and Energy Recovery Act of 1974, Working Paper No. 1, Senate Comm. on Commerce* (Feb. 1974).

placing the burden of justifying the rates on the carriers. Third, though the Supreme Court in the *Ann Arbor* case never dealt with this distinction (and so may have had little or no effect on its interpretation), § 204 has been fully enacted into law instead of merely being a part of a joint resolution.

Congress chose not to use the strongest language it could have, leaving out, for example, any provision specifically defining presumptions of competition. It did not use the seemingly stronger language of earlier proposals or of the Hoch-Smith Resolution itself calling for the "lowest possible lawful rates." Yet is appears that it did accomplish more than it had in 1925. By force of law, Congress was now calling upon the ICC to follow a new procedural rule presuming the unlawfulness of current rates, with NEPA and the EPA in the background, which could well lead to a substantial change in the result, though applying otherwise unchanged substantive law. Let us therefore turn to an examination of what the ICC did to implement § 204, and how the courts read both the congressional mandate and the ICC's response.

D. Ex Parte 319-I

Through § 204 of the Quad-R Act, the ICC was called upon to hold hearings to consider the legality of the recyclable rate structure, and was given twelve months to accomplish this. Extensive testimony was taken in the Ex Parte 319-I proceedings. Three weeks of hearings were held, and 95 verified statements and numerous briefs were submitted.[110] All in all, the record consists of about 13,000 pages.

The parties tended to fall into two groups. One side consisted of shipper trade associations whose members dealt in recyclable commodities, and several shippers which used large quantities of the recyclables, such as non-integrated steel companies and some paper companies. They in large part argued that virgin and recyclable commodities competed, both as inputs and through the final products they produced, that the quantities of recyclables shipped were highly dependent on the freight rates, that freight rates discriminated against the recyclable materials and were unreasonably high,that the situation was aggravated by percentage general increases, and that the rates were not justified by cost and demand considerations. Perhaps, as well, rates should be tilted to favor recyclables because of the energy and environmental benefits to be reaped.[111]

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110. 356 I.C.C. at 117.

111. Some potential environmental injuries include the following: increased accumulations of non-recycled "junk," despoiling the landscape and taking up valuable space in sanitary landfills; increased mining activities which do their share in damaging the environment and depleting non-renewable mineral resources; and increased consumption of energy by encouraging the use of the more energy-intensive technologies necessary to convert virgin materials into useful prod-

On the other side were the respondent railroads, who were supported by certain shippers which depended greatly upon and had large ownership interests in virgin materials, such as integrated steel companies and a paper-making trade group. Their basic arguments were that virgin and recyclable materials were not competitive, competition between outputs being insufficient and irrelevant, that shipments of recyclable materials were not significantly dependent upon or deterred by increases in their transport rates, and that rate differences were justified by costs and other transportation characteristics.

One interest did exist which fell between the two above groups. This was the aluminum producers, consumers of large quantities of both recyclable and virgin materials. They argued that, because of non-interchangeability, no competition between virgin and recyclable materials existed (and so no discrimination was present), but that the rates on aluminum scrap were nevertheless unreasonably high.[112]

The final decision and order of Ex Parte 319-I opened with a discussion of the controversy and of the seven categories of evidence called for as they applied to all of the commodities in general.[113] It then briefly laid out some ground rules for judging reasonableness and discrimination,[114] and launched into a commodity-by-commodity analysis.[115] A short summary and presentation of ultimate findings followed.[116]

Discrimination

Unlike their response to the 3-R Act,[117] the ICC chose to consider discrimination in the § 3(1) sense, and to apply what they termed a "traditional" four-step approach, which was based on: (1) whether there was a disparity in revenue- (or "rate-") to-variable cost ratios, (2) if so, whether there was competition "*in fact*" [emphasis theirs], (3) if so, whether recyclable shippers were thereby injured, and (4) if so, whether the ratio disparities could be justified by transportation characteristics.[118] It will be

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ucts. This latter effect can have long-term effects on production, as when it must be decided whether to invest in energy-intensive, virgin-material-consuming basic oxygen furnaces for the production of steel, or more energy-efficient, scrap-intensive electric furnaces. Relative increase in rail rates can also cause more scrap to be shipped by truck, a less environmentally attractive substitute to rail service.

112. One might speculate that because aluminum producers use significant quantities of both virgin and recyclable materials, they would have an interest in keeping both rates as low as possible. This is different from the other groups who would be more concerned about keeping their one rate down.

113. 356 I.C.C. at 116-56.

114. *Id.* at 156-60.

115. *Id.* at 160-427.

116. *Id.* at 427-31.

117. Ex Parte 306, 346 I.C.C. 408 (1974).

118. 356 I.C.C. at 159.

recalled that in our earlier discussion of the case law, we also referred to the established four-step test of discrimination: (1) whether there was a disparity in rates, (2) whether there was competitive injury, actually or potentially, (3) whether the carriers were the common source of the rates causing the alleged problem, and (4) whether the disparity in rates could be justified by transportation characteristics.[119]

There are three basic changes the ICC made to the earlier test. First, the ICC chose to deal with disparities in *ratios* instead of in *rates*. Second, the Commission was concerned with competition in fact rather than actual or *potential* competitive injury. Third, it dropped the requirement of having a common source of rates. The ICC set out the earlier test in a footnote, citing it to the ICC decision which was affirmed in *Chicago & E. Ill. R.R.*, and recognized two of its changes.[120] It first attributed its use of ratios to the scope of its investigation in order to avoid reference to the multitude of specific rates. It secondly recognized that the common-source requirement of the earlier test was automatically met since the respondents included all railroads. The Commission also pointed out that, unlike the traditional standards, the burden here fell entirely on the railroads to prove rate legality. It failed, however, to explain why it chose to use the more stringent requirement of competition in fact.

In qualifying its four-part test further, the ICC said that it would "heed the expressed intent of Congress,"[121] which showed concern that "the Commission may not be taking into account the full competitive relationship between recyclable . . . and virgin materials . . . ."[122] The ICC also stated that when dealing with competitive injury, the historical trend of shipments would be the "significant data" used to determine whether freight rates had discouraged recyclable shipments and encouraged virgin material shipments. Questions of justifications of disparities in ratios and of the environment would be considered in the commodity-by-commodity analysis.[123] The Commission also pointed out that the "maintenance of adequate revenue levels for railroads" (as required by § 205 of the Quad-R Act) would have to be considered in all the rate decisions.[124] Let us now, however, examine how the ICC applied its four-step test of discrimination to the evidence.

The first step of the test was whether the ratio of freight rate to variable costs was greater for virgin or recyclable materials. If that ratio were higher for the virgin material, the conclusion immediately followed that no

119. *See* quote from *Chicago & E. Ill. R.R.* and text accompanying note 21, *supra*.
120. 356 I.C.C. at 159 n.23.
121. *Id.* at 159.
122. *Id.*, quoting *S. Rep. 94-499, supra* note 91, at 47.
123. 356 I.C.C. at 160.
124. *Id.*

discrimination existed, regardless of whether or not the recyclable rate were higher.[125] If the recyclable ratio were higher, the ICC proceeded to the second step of the test.

The second step, competition in fact, was hotly contested. It was typically decided in terms of interchangeability of virgin and recyclable materials, and supplemented by historical evidence of recyclable commodity movements and by their relation to sales of the final product. The narrowness of the Commission's definition of competition can perhaps best be seen in cases where the materials were technologically interchangeable (though direct substitution was not observed in practice), but found not to compete.[126] It might seem that these cases would at least fall within "potential" competition, if not competition in fact, though the ICC often classified these relationships as "complementary" instead.[127] The Commission also refused to impute competition between inputs, such as iron ore and ferrous scrap, from competition between outputs made from different technologies, such as finished steel from integrated and nonintegrated steel mills.[128]

If ratios were unfavorable to recyclable materials and if competition existed, or was assumed to exist for the sake of argument,[129] the issue of injury to recyclable shippers became crucial to the question of unlawful rate discrimination. Having refused to accept the estimates of freight rate elasticities of a study submitted by the railroads,[130] the principal evidence

125. *See, e.g., id.* at 186, 382.

126. For example, no competition was found between iron ore and scrap iron and steel in spite of the range of input mixes possible in the various steel-making technologies. *Id.* at 188-89. The ICC also accepted the fact that aluminum scrap could be substituted for virgin ingot, and that glass cullet could be substituted for industrial sand, but found that they were not in fact competitive because it would be "difficult and uneconomical" to substitute, *id.* at 268 (aluminum scrap), or because "its economic feasibility has not been established." *Id.* at 395 (glass cullet). Also, it refused to consider certain nonferrous scrap to be competitive with copper ore because the ore must first undergo a concentration process which the scrap did not. *Id.* at 296.

127. *See, e.g., id.* at 267, 344.

128. *Id.* at 204: The ICC here gave no basis for this decision, other than that it had "studied and analyzed [the record] as carefully as possible."

129. *See, e.g.*, the ICC's discussion of ferrous scrap where, after holding that no competition existed, stated: "However, viewed realistically, we are certain that this finding [of non-competitiveness] will not end the controversy. Accordingly, the following discussion is based on the premise that iron ore and scrap iron and steel compete." *Id.* at 204. *See also id.* at 345.

130. The study was done by W. Bruce Allen and James R. Nelson of Gellman Research Associates [hereinafter referred to as the Gellman study]. The study gave arguments as to why most of the recyclable and virgin materials did not compete with each other, and empirical estimations of many of the freight rate elasticities for recyclables, alleging them to be inelastic. A freight rate elasticity shows the percentage change in quantity shipped caused by a percentage change in the transport rate. No such estimates were given for virgin materials in the Gellman study. The ICC, however, refused to accept these elasticity estimates because they were too inexact to be useful, citing, for example, their short-term nature, the high level of commodity aggregation, and the ignoring of intermodal competition. 356 I.C.C. at 149-51.

used was showings that the quantities of recyclables shipped either increased over time,[131] or were highly correlated with the sales of the final product.[132] The conclusion was therefore reached that increasing rail rates had little or no effect on recyclable traffic.[133]

If disparate rates were found to cause competitive injury, transportation characteristics could be used to justify the rates. Though competitive injury was never explicitly found, the ICC did occasionally examine these justifications. As earlier noted, both cost and demand factors are traditionally used to justify rate disparities.[134] When ratios of rates to costs (as opposed to just rates) are to be justified, presumably the costs should already have been included in the first step. Even though the ICC considered many cost factors to be "transportation characteristics,"[135] it made an attempt to include them within their estimates of variable costs.[136] Costs still were occasionally discussed separately as justifications.[137] If all cost factors were, however, handled in step one, then only demand factors such as the value of service, value of commodity, and intermodal competition remained to justify ratio differences.[138]

In order to estimate these demand factors, evidence such as how large rates were relative to delivered price,[139] and comparisons of delivered prices[140] were used to justify higher ratios for recyclables. Also used to justify a low rate for virgin copper ore was the threat of diversion to private carriage.[141] Loss of recyclable traffic to other modes, however, was not used to justify their lower rates, such as when the ICC felt that trucks often dominated the movement of wastepaper because of the short distance hauled and of textile wastes because of the quickness of motor transport. The Commission seemed unwilling to find that lower rail rates would increase rail traffic of these commodities.[142]

REASONABLENESS

With none of the rates investigated found to be unlawfully discriminatory, the question of legality rested on their reasonableness. The relation-

131. *See, e.g.*, 356 I.C.C. at 205, 269, 351.
132. *See, e.g.*, *id.* at 204.
133. *See infra* note 158 and accompanying text as to some shortcomings of this type of data.
134. *See supra* text accompanying notes 34-39.
135. *See, e.g.*, 356 I.C.C. at 239-40, 284-85, 317-18, 390, 406.
136. *See, e.g.*, *id.* at 137, 243, 255.
137. *See, e.g.*, *id.* at 349-50.
138. *See, e.g.*, *id.* at 243.
139. *See, e.g.*, *id.* at 206, 349.
140. *See, e.g.*, *id.* at 268, 297.
141. *Id.* at 297.
142. *See, e.g.*, *id.* at 351, 383.

ship of recyclables to virgin materials was no longer at issue here, since competition is not a prerequisite for unreasonableness.

The ICC singled out two types of evidence as "the best indicators of reasonableness": the historical trend of recyclable shipments, and the comparison of freight rates on recyclables to their delivered prices. It then stated that it was "especially concerned" about situations with high rate-to-variable cost ratios, and when those ratios varied widely between territories and between similar types of recyclables.[143] The suggestion of a maximum rate-cost ratio equalling the national average of 131.8 percent was ruled out, noting that a public interest in viable railroads existed as well as a public interest in recycling.[144]

The consideration of the reasonableness of individual rates seemed somewhat unsystematic. As was stated at the outset, the relationship of quantities shipped to transportation rates was an important consideration throughout, and was typically used to demonstrate that the quantity of recyclable traffic was related far more to the output of final products than to transport rates.[145] The ratio of freight rate to value of the commodity did not seem to play as great a role. For example, it was noted that the freight rate on scrap iron and steel may be "significant," but the high rates on them were reasonable nevertheless.[146]

Great weight was often attached to the rate-to-variable cost ratios, but no sharp cut-off between legal and illegal rates was evident. "Legal" ratios ranged up to 226 percent,[147] and "unlawful" ratios down to 183 percent,[148] with little support given to many of their decisions.[149] Even when rates were held to be unreasonably high, there often appeared to

143. *Id.* at 157.

144. *Id.* at 157-58.

145. *See, e.g., id.* at 184, 331, 414.

146. *Id.* at 184.

147. *Id.* at 333.

148. *Id.* at 272.

149. For example, a 189% ratio on the recyclable copper matte was held lawful even though "no data has been provided as to the value of the commodity or the amount of tonnage moving annually over a period of years," and noting it "therefore difficult to determine if the commodity can bear this ratio and still move." *Id.* at 299. It should be noted that the probable revenue impact would have been minimal. Though no revenue figures were given for the affected region, the ICC reported that for three western railroads with similar quantities of carloads shipped, the revenue from "copper matte, etc." ranged from 0.010 to 0.032 of a percent of their total revenue. *Id.* at 293. A ratio of 177% was also deemed within an undefined "zone of reasonableness," and ratios of 184% and 161% to be less than a level of "maximum reasonableness." *Id.* at 271. The Commission went to the extent of allowing seemingly non-compensatory ratios of 55, 64 and 69% on returnable bottles, stating that these rates were "not above the maximum level of reasonableness[!]" *Id.* at 424. The Commission noted that the Southern carriers had indicated that some bottles were returned free. *Id.* at 424. This could in part explain these low ratios, but the Commission made no other comment.

be no pattern to the amounts of ordered reductions.[150] Far too often, conclusions were apparently made on little or no evidence.

CONCLUSIONS AND ULTIMATE FINDINGS OF THE ICC

As to all commodities, the Commission found either no competition or no injury. It therefore held all rates to be nondiscriminatory.

Several rates were found to be unreasonably high, and percentage reductions ranging from 5 to 20 percent were ordered. According to the Commission, these reductions were based on "all the evidence of record including the revenue-cost ratio, the value of the commodity, and the financial impact of the reduction on the railroad respondents."[151]

Though much weight was put on rate-to-variable cost ratios, the Commission tried to downplay their role. The final paragraph of the decision spoke to this point:

> In closing, we would like to emphasize that the ratio of revenue to variable cost resulting from the reductions ordered herein are not to be construed, in and of themselves, as standards of maximum reasonableness. We have ordered reductions not based simply on the ratios, but based on consideration of all evidence of record, in light of the special character of this investigation under the 4R Act and the statutorily imposed burden of proof on the railroads. *We have continually rejected the notion that we should declare a particular revenue to cost ratio to be the sole criterion for determining maximum reasonableness* [citations omitted]. The ratios were a useful and appropriate tool in this investigation; however, their value does not extend beyond their use in making the considered determinations and ordering relief herein.[152]

It should be noted, however, that the Commission in Ex Parte 319-I was to establish a level of maximum reasonableness solely on these very ratios.[153]

Three commissioners dissented from the Ex Parte 319-I decision. Commissioner Christian, joined by O'Neil, felt that the decision failed to comply with § 204 of the Quad-R Act. They thought that the burden of

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150. Reductions of 20% were ordered for ratios of 210, 213, 214, 319 and 343%; 15% reductions on ratios of 272 and 431%; 10% reductions on ratios of 183 and 237%; and 5% reductions on ratios of 193, 198, 210 and 227%. The 15% reduction on the ratio of 431%, for example, would bring the figure down to 366% (= 431 × 0.85), still higher than any of the others *before* reduction. Comparisons to other territories were occasionally made to justify a finding of unreasonableness, *see, e.g., id.* at 333-34, or because of high freight rates relative to low value, *see, e.g., id.* at 394-96, but unfortunately that was not the standard case.

151. *Id.* at 429. There were also several commodities for which the ICC found that insufficient evidence had been submitted upon which to base a decision of legality (regardless of the burden of proof). Rather than order rate reductions, the ICC chose to order further investigations into them. *Id.* at 431.

152. *Id.* at 430 (emphasis added).

153. *See* text accompanying notes 207-216 *infra*, and 361 I.C.C. at 244.

proof had not adequately shifted to the railroads. All three dissenters also said that the decision used the issues of competition and injury to avoid confronting the task of justifying rate disparities.[154]

ANALYSIS OF THE DECISION

The ICC made little reference to the intent of Congress behind the passage of § 204 of the Quad-R Act. It was noted that Congress required a shifting of the burden of proof, but the Commission seemed to ignore this. The most frequent occurrences of this appeared when it stated that the carriers failed to prove some element of lawfulness, but then held that the rate was lawful regardless.[155] It seems that the burden of proof, if shifted to the carriers, might be a very difficult one to carry, for it is generally easier to prove the existence of something than the lack thereof. Whereas a shipper might be able to establish injury, subject to rebuttal, by a showing of fierce competition, a precarious profit level, or a loss in sales, a carrier faced with the burden of proving *no* injury would seem to have to deal with all of those issues. If the carriers failed to carry this burden of proof, the ICC would then have to set new rates, presumably equating the rate-cost ratios for recyclable and virgin materials (assuming sufficient evidence on costs were provided). The Ex Parte 319-I Commission never addressed these questions because it never shifted the burden of proof to the carriers.

A major type of evidence relied upon by the ICC was the strong relationship of scrap movements and prices to the sales of finished products, or the lack of it between scrap movements and their price. In dealing with scrap iron and steel for example, the Commission stated that according to the data:

> The movement of scrap is a function of the level of activity in the steel industry, and that while freight rates have increased steadily, the amount of tonnage carried by the railroads, as well as the price of scrap has fluctuated in accordance with steel production.[156]

They also noted that:

> There seems to be no correlation between the amount of tonnage originated and the price of scrap. An increase in price does not seem to cause a de-

154. 356 I.C.C. at 432-34.

155. An example where the railroads were thus relieved of their burden of proof occurred in situations where the railroads had produced very few movements upon which to base the rate-cost ratio, but the shippers were not allowed to object "since they offered no evidence of additional movements." 356 I.C.C. at 127. The ICC also once noted that though there was "some indication" of competition, it was held not to exist since "the degree of this competition . . . is not known." *Id.* at 268. The Commission "reprimand[ed] the respondents for now showing the specific amount [of recyclable traffic] moving," yet found the rate in question to be reasonable. *Id.* at 271. *See also id.* at 333, 298.

156. *Id.* at 184.

crease in tonnage; in fact, in 1974 the price of scrap was the highest for the years shown, and the tonnage originated was the highest.[157]

These statements were made to illustrate the lack of effect that transport rates had upon the movement of recyclable materials. These comments, however, show the lack of understanding by the Commission of the interplay between the supply and demand for scrap iron and steel. The sales of finished steel products may, indeed, be the largest single determinant of recyclable traffic, for when the demand for steel is high, more inputs are needed to produce the steel to meet that new demand. Under the law of supply and demand, in order to induce more shipments of scrap iron and steel, its price will rise. It is therefore not at all surprising that shipments of scrap peak when its price is highest: High demand leads to high prices as well as increased purchases. This does not imply, however, that freight rates have no effect on the movement of recyclables. An even higher level of traffic may have been reached with lower rates, both because of a lower market price for scrap, and a lower price relative to that for iron ore (assuming they compete). If the magnitude of these effects is relatively small, any changes in shipments caused by higher rates may well have been concealed by the larger fluctuations in demand caused by changes in the final steel market. Without more sophisticated analysis, however, the Commission would not be able to separate out the two effects. And with the burden of proof on the railroads, a lack of showing that lower rates would not have led to an even larger increase in recycled traffic would seem to lead to the conclusion that higher rates did discourage traffic.[158]

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157. *Id.* at 178.

158. The *NARI-I* court was to deal with this point. *See infra* text accompanying notes 179-181. In terms of supply and demand curves, this issue can be illustrated as follows:

Figure A shows a supply and a demand curve for ferrous scrap. The price where supply equals demand is P^A, and the quantity shipped is Q^A. Point A represents that combination. The demand for scrap iron and steel exists basically because it is used to produce finished steel. If, for some reason, it is decided that more steel will be produced, such as due to an increase in demand for steel products, the demand curve for ferrous scrap will shift up (D' in Figure B).

All of the relationships noted by the ICC can be seen here: the price and quantity of scrap increased with the level of steel production, and the quantity of scrap shipped peaked simultaneously with its price.

This can also be true when transport rates have entered the picture. If scrap suppliers pay the freight, which appears to be true, an increase in the transport rate will shift the supply curve up (to S' in Figure C); that is, to induce it to ship the same amount as before, it would need a higher price to cover the increased cost of shipment. (If purchasers pay the freight, the demand curve would shift down by the amount of the rate increase. The same conclusions, however, would still follow.) If the increase in freight rates occurred during the period that steel production increased, the scrap market would move from point A to point C.

Once again, we would see a simultaneous increase in scrap shipments and prices along with increased steel production. Even though the transport rates had risen, all that would be directly observable would be the movement from A to C, leading the ICC to conclude that freight rates had no effect on their movement. This conclusion would be false, however, for the increase

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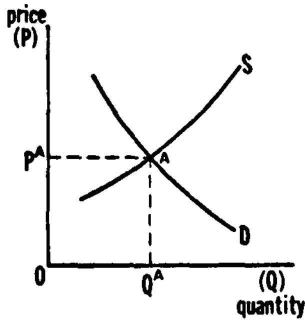

Figure A

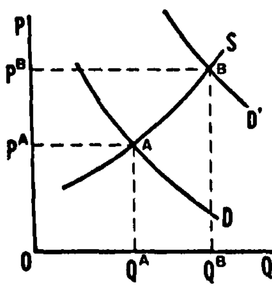

Figure B

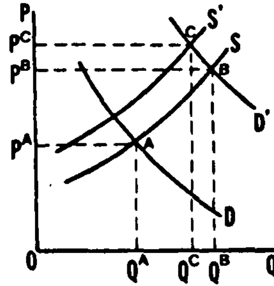

Figure C

In Section II, we developed a theory of pricing to enhance welfare. Let us now see if the ICC has taken any recognition of the implications of that theory. First, we can note that its concern for railroad revenues is consistent with the requirement in our model that the railroads break even. Total revenues must cover costs.

We have noted that the Commission used price-to-variable cost ratios instead of prices to measure disparities. This is an important improvement over the more traditional approach in two respects: First, it formalized the importance of the price-to-cost relationship instead of looking at price alone, and then costs.[159] Second, they specifically rejected a ratio of price to fully allocated cost. This is beneficial, since efficiency depends on marginal costs and not total or average total costs.[160]

Our theory found that a comparison of demand characteristics was crucial. The more inelastic demand is for one commodity relative to another, the higher the rate that commodity should carry, all other things being equal. While the ICC looked to rate-cost ratios for both virgin and recyclable materials and sometimes looked at comparisons of delivered prices, other estimates of demand characteristics and elasticities were presented for recyclable commodities only. For example, there was often evidence that the demand for recyclables was inelastic with respect to freight rates, but no evidence was discussed as to the demand for virgin materials. This is a serious error, for if the demand for virgin materials is

in freight rates held the quantity of recyclable shipped down to Q^C instead of Q^B. It would therefore seem that the railroads would have to prove that no B-to-C movement took place.

159. It is not clear that the ICC recognized the importance of this distinction completely. While commenting on the importance of demand factors, it stated: "A rate reduction based on a revenue to variable cost ratio alone, is as unfounded as a rate reduction based on a mere disparity in rates." 356 I.C.C. at 428. Though correct in citing the importance of demand considerations, a judgment based on ratios is clearly superior to one based solely on rates (and is a judgment the Commission was to make in Ex Parte 319-II).

160. *Id.* at 156. *See also* related discussion in Section II, *supra*.

more inelastic than that for recyclables, then the rate-cost ratios should be higher for virgin materials in order to attain a higher level of welfare.

It should be noted that, as we recognized earlier, pricing rules based solely on cost and demand factors are not everything, and that other elements can and should enter the analysis, such as environmental considerations. Environmental factors were not deemed crucial, however, since the conclusions of the Final Environmental Impact Statement (FEIS) filed were basically that since the demand for recyclables was so little affected by transport rates, few environmental consequences would follow. The ICC did, however, face the question of the environment squarely at least once, when considering the shipment of used steel drums. The shipping characteristics of new and used drums were noted to be quite similar, their transport rates the same, and the FEIS recognized that reusing drums was environmentally beneficial. The shipper requested a lower rate for used drums than new ones, and offered "as justification for the differentiation only environmental concerns." If the ICC had thought Congress intended to put any extra weight on environmental considerations which would change the traditional measure of lawfulness, this would have seemed to be the case to show it by lowering the recyclable rate. The Commission, however, refused to lower the rate on used steel drums.[161]

E. NARI-I

The Decision

Appeals from Ex Parte 319-I were made by the two trade groups, NARI and the Institute of Scrap Iron and Steel (ISIS), and by the United States on behalf of the EPA and the Federal Energy Administration. The case was heard before a three-judge panel, and the decision, *NARI-I*, was delivered by J. Skelly Wright, Chief Judge.[162] The court held that the ICC had not complied with the congressional mandate of § 204 of the Quad-R Act, and it bluntly expressed its displeasure with the Commission.[163]

The court faulted the ICC's handling of the burden of proof, its application of the standard of competition, and its undue emphasis on certain kinds of evidence. The Commission, it concluded, thereby failed to "meaningfully address the focal question presented by its investigation, namely whether the substantial rate disparities between recyclable and

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161. *Id.* at 424-25.

162. Note 70 *supra.*

163. For example, the court referred to the "finessing" of issues, 585 F.2d at 534, and the conducting of "a shell game." *Id.* at 534 n.64. It stated that it was "unimpressed with the Commission's attempt to excuse its failure to comply with its mandate by repeated reference to the expedited nature of this investigation," referring to the excuse as "untenable." *Id.* at 541.

virgin products are justified, in whole or in part, by the transportation characteristics of the products involved."[164] The court's analysis of the legislative mandate was crucial to these conclusions.

The court characterized § 204 as an extension of earlier laws and federal reports which dealt with recycling,[165] and as "not differ[ing] materially . . . from the bills considered and rejected by Congress" which dealt with freight rates on recyclables.[166] It recognized that, as in the *Ann Arbor R.R.* case, § 204 did not "purport to change or modify substantive standards relating to the lawfulness of rates,"[167] but viewed the burden of proof which had been placed on the railroads as having "erected an evidentiary presumption against the lawfulness of the rate structures,"[168] "tilt[ing] the scales against existing structures."[169]

The court felt that this shifting of the burden of proof was crucial, especially in view of the light burden the railroads faced when instituting general rate increases, having only to show need for increased revenues. This shifted burden, the court held, would prevent the ICC from "assuming or otherwise deferring to, asserted revenue needs," and so fulfill the congressional mandate to "identify and remove disparities in the rate structures based on an in-depth examination of the transportation characteristics involved."[170]

Besides the reaching of an "in-depth examination" of transportation characteristics, the second key goal which th court attributed to Congress was the "removal of rate structures which impeded or discouraged development of industrial recycling."[171] It should be noted that the legislative history upon which these conclusions were based was not extensive.[172]

The court held that the ICC had failed to carry out the specifically enumerated requirement of placing the burden of proving the legality of rates on the railroads. It was noted, for example, that the Commission "did not require the railroads to adduce proof on the subject of potential competitive injury . . .,"[173] and was consciously aware of deficiencies in the railroads' evidence,[174] but nevertheless decided on the railroads' side.[175] The Court, however, never delineated what standard the railroads

164. *Id.* at 534.
165. *Id.* at 531 n.45.
166. *Id.* at 532.
167. *Id.*
168. *Id.* at 533.
169. *Id.* at 534.
170. *Id.* at 533.
171. *Id.* at 539.
172. *See supra* text accompanying notes 89-94.
173. 585 F.2d at 534 n.64.
174. *Id.* at 529 n.33.
175. The section on scrap iron and steel in Ex Parte 319-I also had incorporated a study done

would have to meet in order to carry this burden.

The ICC also was held to have erred in the weight it accorded railroad revenue needs and data on commodity movements. As to revenue needs, the court stated that the Commission should not give "greater weight to concerns for railroad profitability than to the environmental and energy goals underlying the investigation."[176] In a footnote, it also said: "Section 204, in our view, directed the Commission to order removal of unlawful rate structures, regardless of their effect on the railroads' revenue levels."[177] It should be noted that while revenue needs traditionally have not always been an important factor in discrimination cases,[178] it is essential for railroad viability that reasonable rates allow for adequate revenues. Nor is it clear that Congress actually did ask that revenue needs be totally left out of the analysis.

The court frequently questioned the weight given to shipment data and elasticity studies. It noted that even if the quantities of recyclables shipped had been rising, the evidence did not "account for increases in recyclable traffic that may have occurred absent the effects of the rate structures."[179] The lack of evidence on intermodal competition was also noted.[180] Because of the multitude of effects which could be occurring simultaneously, the court recognized that some sort of multivariate analysis would be necessary to separate all of the effects.[181] Even a detailed elasticity study which took account of many variables could run into serious problems. The greatest degree of explanatory power which an elasticity estimate has is within the range of data upon which it is based. With the burden of proof on the carriers, unless it can affirmatively be shown that those past rates were lawful, any study presented would be presumed to be based on unlawful rates, and so limited in its ability to describe what demand conditions would be like under a lawful rate structure.[182] Though the court may perhaps have been overzealous in its attack of the ICC's use of elasticity studies,[183] it nevertheless felt that the weight accorded the movement data was undue.

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on those commodities only a short time before in Ex Parte 270. *See* 356 I.C.C. at 163. The court cited that incorporation of the earlier report as support of the ICC's failure adequately to shift the burden of proof to the railroads. 585 F.2d at 529 n.31.

176. 585 F.2d at 534.

177. *Id.* at 534 n.62 (emphasis added).

178. *See supra* note 38.

179. 585 F.2d at 540. *See also id.* at 535.

180. *Id.* at 536.

181. *Id.* at 535 n.71. *See also supra* note 158 and accompanying text.

182. *See* 585 F.2d at 535-36 and 536 n.72.

183. For example, the court referred to the great reliance on the "so-called Gellman elasticity study." 585 F.2d at 530 n.39. The ICC, however, while accepting evidence from the study as to market structure and competition, explicitly refused to accept its elasticity estimates for many of the same reasons the court lays out as shortcomings of such studies. Also, while chiding the ICC

As to the Commission's discrimination analysis, while accepting the use of a § 3(1) standard, the court disapproved of the "novel element" of requiring a showing of competition in fact instead of the traditional actual or potential competitive injury.[184] It held that "the Commission was not entitled to apply a competition standard so narrow in scope as to obviate the statutory purpose of its investigation," the statutory purpose being the "removal of unlawful rate structures found to discourage industrial recycling."[185] In noting the substitutability standard used by the ICC, the court cited Senator Tunney's preference for the functional equivalence test of competition.[186] The court also cited back to the Senate Commerce Committee's concern over the standard of competition applied by the ICC:

> The record before the Committee indicates that the Commission may not be taking into account the full competitive relationship between recyclable and recycled commodities, on the one hand, and virgin materials on the other hand. A reexamination of that relationship will be necessary if this investigation is to achieve its goal.[187]

The court, however, did not require that the functional equivalence test for competition be used, noting that it was not in the language of § 204 or adopted by the Senate Commerce Committee.[188] Rather, the court stated that "to warrant dispositive findings of no competition the Commission was required to find that the various products were neither actually nor potentially competitive for transportation purposes."[189] The court also cast aside in just one paragraph the Commission's handling of the question of injury. It felt that the finding of injury was erroneously based on the shipment and elasticity data discussed above.[190]

The basic fault in the ICC's handling of the reasonableness issue was what the court characterized as its undue reliance on the movement data, supplemented only by evidence of ability to "absorb current rates." The court claimed that "no other standard of reasonableness" had been applied, listing in footnote "the many variables," both cost and demand factors, which could also have been considered.[191] It also stated that rates

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for the "impressionist weight" it gave to elasticity studies, 585 F.2d at 536, the court listed some commodities in the footnote where no such studies had been made. *Id.* at 536 n.74.

184. 585 F.2d at 538 n.80, citing the Chicago Board of Trade v. Ill. Cent. R.R. standard.

185. *Id.* at 540.

186. *Id.* at 539 n.82. Those remarks were made when Tunney introduced the amendment to shift the burden of proof to the railroads. 121 *Cong. Rec.* 38451.

187. *S. Rep. 94-499, supra* note 91, at 51 (emphasis added).

188. 585 F.2d at 539 n.83.

189. *Id.* at 540.

190. *Id.* at 540.

191. *Id.* at 535 and n.66. Included therein were: "cost of service, value of service, the existence *vel non* of competition, the transportation characteristics of the commodity (weight, size, density), the anticipated volume of shipments, the distance of the haul, the availability of return

could not be approved without reference to the transportation characteristics of the commodities,[192] and noted that no standards of maximum reasonableness were set out by the Commission, though such standards were not absolutely required.[193]

It should be noted that perhaps the court painted too bleak a picture. For example, in its use of comparisons of the rate-to-variable cost ratios, the Commission included what traditionally falls under the cost side of transportation characteristics. Comparisons were also made by the ICC between commodities and regions. The consideration given to the relation between transport rate and market price of the commodity also reflected certain demand factors such as values of commodity and service and the ability to pay. The costs and demand factors used by the ICC do not exhaust the court's list of the "many variables" available and may not have received sufficient weight by the Commission, but the court was not correct in asserting that none were ever taken into consideration. Perhaps part of this was due to confusion between the rate disparities of traditional analysis and the ratio analysis of Ex Parte 319-I where costs are automatically considered.[194]

ANALYSIS OF THE DECISION

There are three crucial elements to the welfare analysis we have developed: the price-marginal cost ratio, the elasticity of demand and other considerations such as the environment. The criticism by the court in *NARI-I* can be viewed in light of the great amount of emphasis placed on the second element, and the ignoring of the third, as well as its erroneous view that the ICC had ignored costs.

As noted above, the court made some astute observations concerning demand elasticities and the weight placed on them.[195] The court also brought up a crucial point not clearly enunciated before when it noted that all, or nearly all, transport rate elasticities were inelastic.[196] This is impor-

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loads, the economic status of the industry, the rate level required to move the traffic, the threat of intermodal competition, and comparisons with established rates for comparable shipments in the territory involved."

192. *Id.* at 535, 537. *See also Commercial Considerations, supra* note 23, at 600-601, on the required consideration of transportation conditions.

193. 585 F.2d at 537.

194. *See also id.* at 537 n.78, where the court incorrectly asserts that the ICC ignored "any consideration of costs," in a note discussing the use of cost factors to establish a measure of maximum reasonableness.

195. *See supra* text accompanying notes 182-183.

196. 585 F.2d at 536-37. Note that an unrestrained monopolist would never choose to price on the inelastic portion of a demand curve. Profits could always be increased by raising price and lowering output. *See, e.g.,* F.M. Scherer, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 242 (2d ed. 1980).

tant because when determining which of any given pair of commodities should bear a higher percentage markup above costs to minimize efficiency loss, it must be determined which commodity is less elastic (or more inelastic). The absolute level of the elasticity is not as important as the relative elasticity. For example, the rate elasticity for a recyclable may be low and so able to support a high rate, but the rate elasticity for the related virgin material may be lower, and better able to support the higher rate (compared to cost). In Ex Parte 319-I, as well as in the traditional case law we have examined, almost all of the discussion of elasticities, ability to pay, competitive injury, and the like, has been focused on only one of the commodities. In order to maximize welfare, both commodities must be examined.

As to the other aspects of welfare analysis, the court placed substantial weight on what it read to be a congressional intent to enhance the environment through recycling, and faulted the ICC for subverting these goals. Though traditionally the ICC has been hesitant to alter decisions on public policy grounds not directly related to transportation, the NARI-I court viewed this as a case where the legislature authorized and directed the Commission to take it (in the form of removing obstacles to recycling) into consideration.

In sum, the court held that the ICC failed to meet its mandate under § 204 of the Quad-R Act. The Commission's order was vacated and the case remanded for further proceedings consistent with the court's decision. The Commission was given six months in which to complete the new proceedings.[197]

F. Ex Parte 319-II

In response to the decision in *NARI-I*, the ICC reopened the Ex Parte proceeding. In April of 1979, it issued its revised report, Ex Parte 319-II,[198] which set out new standards of judging discrimination and reasonableness in freight rates for recyclables.

Because of time constraints, little new data were accepted by the Commission. There were some updates on costs and rate-cost ratios of Ex Partes 319-I. The Commission took the opportunity to point out that, as in the earlier proceeding, included within the variable cost data (and so ratios) were cost components traditionally classified as transportation characteristics.[199]

A significant addition to the evidence in the record was results of surveys of shippers and receivers of recyclable materials in the South.

197. 585 F.2d at 543.
198. *See supra* note 69.
199. 361 I.C.C. at 240.

This survey was undoubtedly undertaken due to a footnote in the *NARI-I* case calling for such a study.[200] Perhaps because of the seemingly self-serving nature of such a survey, it is not surprising to find that about two-thirds of each of the shippers and receivers responding stated that their shipments and purchases of recyclables would increase if rail rates dropped. The ICC concluded that "it becomes apparent that rail freight rates do have an effect on the movement of recyclables."[201]

The Commission stated that, as in Ex Parte 319-I, "we will base our investigation on the revenue-to-variable cost ratios developed for each commodity."[202] We shall see that those ratios were now to reach a higher level of importance.

STANDARDS OF DISCRIMINATION AND REASONABLENESS USED

Once again, the ICC chose to use the "framework of the traditional section 3(1) criteria" in judging discrimination.[203] The same four-step test would be used as before,[204] but with extensive modifications to their standards of competition and injury.

Besides the substitutability test they had used in Ex Parte 319-I, the Commission decided to look also to competition of manufactured products in order to examine the "full competitive relationship."[205] They thereby expanded their earlier requirement of competition in fact to one including potential competition as well, and so responded to the court's reading of the congressional mandate and conformed to more traditional case law. The Commission set no formal limits to its definition of potential competition (ultimately finding all paired commodities examined to be competitive). As to proof of injury, it recognized the inconclusiveness of their earlier movement data, and so decided that now once competition had been established, injury could be inferred,[206] whether the competition was actual or potential.

Apparently taking its cue from the court's suggestion of setting a standard of maximum reasonableness,[207] the ICC decided to judge reasonableness solely on the basis of the rate-to-variable cost ratios.

200. "In order to meet their burden of proof on this issue, the railroads should at a minimum be required to survey existing and potential users of recyclables to determine whether reductions in rates would encourage them to purchase more or make additional use of recyclable materials." 585 F.2d at 540 n.87.

201. 361 I.C.C. at 241-42.

202. *Id.* at 239.

203. *Id.* at 242.

204. *See supra* text accompanying note 118.

205. 361 I.C.C. at 242-43.

206. *Id.* at 243, citing New York v. United States, 331 U.S. at 310. *See also supra* notes 29-30 and accompanying text.

207. *See supra* note 193 and accompanying text.

Though preferring to make the determination of reasonableness on a broader consideration of the evidence, it stated:

> Given the mandate of the court to make a determination of the reasonableness of all railroad rates on recyclables and given the short time constraints placed on the investigation, the Commission is employing in the unique situation presented by this case a standard of maximum rate reasonableness expressed solely as a ratio of revenue-to-variable cost.[208]

In so doing, they explicity discounted the following five traditional factors: (1) "Rate levels required to move the traffic," since the concern is to increase the traffic; (2) "Rate comparisons," since many like shipments are grouped together to compute the rate and cost figures, and because comparisons to other rates presume their legality; (3) "Revenue need," citing the court's criticism of earlier reliance on revenues, and so stating that they would "not place *any* emphasis on rail revenue need" [emphasis added]; (4) "Market and modal competition," since they viewed their mandate as centering on rail rates; and (5) "Value of service," because of their view that "we should not and will not let the high value of some recyclable commodities and their apparent ability to bear higher freight rates influence our decision in this case."[209]

A level of reasonableness based on rate-to-variable cost ratios was therefore required. The ICC limited its search for such a ratio to only three choices, 127 percent, 160 percent, and 180 percent, apparently because these three had "played a significant role in Commission proceedings."[210] The 127 percent level was the national average of all rail rates. This choice was ruled out since by definition, the Commission pointed out, half of the railroads' revenues accrue from ratios above the average, and half from ratios below. The conclusion was therefore reached that by setting the maximum ratio for recyclables at the national average, recyclable traffic would "not pay their own way" and would "have to be subsidized by the rates on other rail traffic."[211] No further explanation was given.

The ratio of 160 percent was the level where a rebuttable presumption of market dominance was set. The Commission pointed out that in the past, a finding of market dominance did not automatically lead to a finding of unreasonableness, and so chose not to accept 160 percent as a level of maximum reasonableness here.[212] Again, no further elaboration was given.

The third ratio, 180 percent, was the ratio the ICC chose as its reasonableness standard. It has been used as a level upon which to institute

208. 361 I.C.C. at 244.
209. *Id.* at 244-45.
210. *Id.* at 245.
211. *Id.* at 246.
212. *Id.*

investigations into unreasonableness in general rate increase proceedings. There seemed to be two reasons for selecting 180 percent as their rule. First, the ICC was concerned that it might appear inconsistent to declare as unreasonable a ratio below 180 percent when they would normally not even bother to investigate such a rate.[213] Second, it was noted that:

> The standard of 160 percent . . . allows the railroads to earn a sufficient return on their investment . . . . A standard of 180 percent allows the railroads an even greater opportunity to earn an adequate return on the investment devoted to the transportation of recyclable commodities.[214]

Neither of their reasons justifying the 180 percent level, however, seems compelling. First, as they repeatedly stated, the case of recyclables is special.[215] It would therefore not seem inconsistent to set a level of maximum reasonableness of less than 180 percent for recyclables and still apply the 180 percent rule in general rate increases when dealing with other sorts of commodities. Second, if a rate which is 160 percent of variable costs allowed a "sufficient return" on investment, why is it necessary to go any higher? And why even as high as 160 percent? In these terms, as long as rates exceed variable costs and so are not confiscatory, the ICC would seemingly be treading on thin ice to rely on revenue needs alone in justifying any specific level of maximum reasonableness, especially one which allows for more than "sufficient" returns. Also, recall the court's warnings of reliance on revenue arguments and the Commission's pledge to place no emphasis on them.[216]

Given that the ICC found competitive injury in all relevant cases, the standards of discrimination and reasonableness in Ex Parte 319-II seem then to be purely cost-based. The only potentially major role demand considerations can play would seem to be in the fourth step of the discrimination analysis where disparities in ratios can be justified. In light of the emphasis the court placed on reaching an examination of transportation characteristics,[217] it is questionable whether or not the Commission truly answered the court's concerns. The court also emphasized the importance of increasing the movement of recyclable materials; a goal which apparently was served by the ignoring of demand factors.

Application of Standards to the Commodities

Ratios for recyclables which were found to be less than those for

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213. *Id.*

214. *Id.* at 247.

215. *See, e.g., id.* at 244, 248.

216. *See supra* text accompanying notes 176, 177 and 209.

217. *See supra* text accompanying note 170.

virgin materials were immediately declared nondiscriminatory.[218] If the recyclable ratios exceeded the virgin ratios, the establishment of competition was the second step in the analysis. Competition between the outputs of the commodities (a functional equivalence standard) was accepted as establishing competition between the commodities. For example, competition between iron ore and ferrous scrap was found because of competition between integrated and nonintegrated steel mills.[219] Direct substitutability was occasionally found as well,[220] even if the technology to prepare the recyclable material was not quite developed as yet.[221]

Injury was the third step of the test. Though seldom mentioned at all, it was presumed to flow from the existence of competition.[222] The Commission never indicated what evidence a carrier could submit to overcome this presumption.

The final step was where the railroads could justify the ratio disparity based on transportation characteristics. The ICC had to remind the carriers that cost elements were typically already included in the variable cost figures,[223] and when the railroads alleged that these cost figures did not adequately represent costs, the Commission held that they failed their burden of proving so.[224] Demand considerations were introduced, but never held to justify changes in the rates, whether it was the shippers or carriers introducing the data.[225]

The reasonableness determinations hinged solely on whether or not the ratios on recyclables exceeded 180 percent. Where they did, they were held to be unreasonably high.[226] Where they were below 180 percent, they were held to be reasonable, even if the ratios on the recyclables varied widely between territories.[227]

Only once, with chemical or petroleum wastes, were transportation characteristics introduced to justify ratios exceeding 180 percent. The

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218. *See* 361 I.C.C. at 250, 255, 258, 260, 264, 266, 269. It should also be noted, however, that if demand elasticities for recyclables exceed those for virgin materials, our theoretical pricing rules would call for a lower price-cost ratio for recyclables.

219. *Id.* at 250. *See also id.* at 255, 259, 260, 261, 262-63, 268-69.

220. *See, e.g., id.* at 258, 259, 268.

221. *Id.* at 267 (technology to separate glass cullet).

222. *See, e.g., id.* at 250, 259.

223. *See, e.g., id.* at 251, 255, 259, 263.

224. *See, e.g., id.* at 251, 252, 261.

225. For example, the fact that recyclable glass cullet was worth three times virgin sand, *id.* at 267, *see also id.* at 259, 263, or that the rate-to-price ratio was several times lower for aluminum scrap than for virgin bauxite ore, *id.* at 255-56, *see also id.* at 263, 267, was not held sufficient to justify a higher rate-to-variable cost ratio for recyclables.

226. *Id.* at 257, 260, 261, 268, 269, 271, 272, 273, 274.

227. *See, e.g., id.* at 261 (ratios ranging from 78% to 155%), and 264 (ranging from 129% to 163%).

carriers alleged that though the rate-to-price ratio was high for one such commodity in this classification, the fact that these shipments would be made regardless of transport rates justified a higher rate. The ICC held, however, that the railroads had failed to prove that reasonable rates would have to exceed 180 percent, and so ordered them down.[228] It is also interesting to note that rates on recyclables which fell below cost were declared not unreasonably low, with no further explanation.[229]

In effect, the test actually applied by the ICC was a three-part test it had earlier enumerated.[230] First, it looked for disparities in the revenue-to-variable cost ratios of the virgin and recyclable materials. Second, if such a disparity existed which was unjustified, the ratios were ordered to be equalized.[231] Third, in no case would a recyclable ratio be allowed to exceed 180 percent.[232] Though it was conceivably possible for the railroads to get outside of these rules by proving lack of competition or injury or by justifying the rates by transportation characteristics, the ICC never found them to have met their burden to do so.

Analysis of the Decision

The most notable departure in the Ex Parte 319-II decision from traditional handling of rate cases is the striking de-emphasis of demand considerations. The *NARI-I* court had questioned the validity of the reliance on movement data, but more on the grounds that all the effects of changes in traffic had not been separated out and that the concern was to increase traffic instead of simply maintaining the status quo. The court had also challenged the use of elasticity studies, first on the grounds that most transport demands are inelastic, so looking at just one will not be conclusive, and second because those studies were based only on data of past rates, rates of limited range and of presumed illegality. The court had not totally ruled out the use of demand evidence, but was only concerned that the Commission in Ex Parte 319-I had used it in the early

228. *Id.* at 274.

229. *Id.* at 261 (a ratio of 78%), and 270 (ratios of 55%, 64%, and 69%).

230. *Id.* at 248-49.

231. There was one instance where this did not occur, which was with nonferrous ashes or miscellaneous residues. The ICC stated that "no evidence of record" was submitted by anyone including recyclable shippers that there was any competition whatsoever with "any form of bauxite or in the production of aluminum." The finding of no competition was therefore reached, and the recyclable ratios were not ordered to be equalized. *Id.* at 255.

232. Oddly, the ICC described this as "the traditional discrimination evaluation." *Id.* at 248. It did not appear to be traditional since the steps of proving competition and injury were missing, though these elements were subsequently discussed in the specific case, and since only the first two steps seem related to discrimination, the third being their test of reasonableness. Even though this three-step test was outlined in the general discussion of discrimination and reasonableness, the four-step test of discrimination as enumerated in Ex Parte 319-I was the one actually applied in a straightforward fashion in Ex Parte 319-II.

stages of its analysis improperly to avoid getting into a detailed examination of justifying the rate disparities.

The Commission apparently construed the court's meaning as allowing it to ignore demand considerations and look only to costs. This downplaying of demand factors belittled an important element in welfare maximization. The element of price-cost ratios, however, was still considered (though taking a more singular role than welfare maximization would call for), as was the congressionally-imposed concern for the environment which lead to the ignoring of demand in this case. Somewhat ironically, these new standards were promulgated in order to carry out these environmental goals, even though the Commission itself still found there to be no significant effect on the environment because of the small role it found rail rates play in the use of recyclable rates.[233]

G. *NARI-II*

Most of the parties appealed from the Ex Parte 319-II decision, including the railroads, shippers and users of recyclable materials. The court in *NARI-II*[234] upheld the ICC's findings of competition and discrimination as well as their use of a standard of maximum reasonableness. The court vacated both the 180 percent standard of reasonableness and some of the remedies provided in the discrimination section, referring to them as "beyond [the ICC's] authority or without support in the record."[235]

DISCRIMINATION

The court accepted the use of the four-step test of discrimination, and then examined its application by the Commission. It accepted the use of disparities in revenue-to-variable cost ratios as opposed to disparities in rates for the first step. It recognized that variable costs were components of transportation characteristics, and also stated that "[w]here rate disparities are matched by proportionate differences in variable costs, [that is, when rate-to-variable cost ratios are equal] there is no unjust discrimination." This supported the Commission's practice of declaring as nondiscriminatory to recyclables all rates where the virgin ratios exceeded recyclable ratios, without having to consider demand characteristics.[236]

Though the ICC never clearly defined its conception of potential com-

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233. *Id.* at 277.
234. *See supra* note 71.
235. *Id.*, 627 F.2d at 1331. In a per curiam decision, the Supreme Court upheld the lower court's power to send the 180% standard back to the ICC, but held that the court erred as to the specific remedy ordered. *Consolidated Rail Corp.*, 449 U.S. at 612. *See also infra* notes 242 and 248.
236. 627 F.2d at 1334.

petition, its use of competition between final products was viewed by the court as a long-run test of potential competition between the recyclable and virgin inputs. The court accepted this long-run test as a valid definition of competition, especially in light of the congressional intent to encourage recyclable traffic.[237] Once competition had been shown, the inference of injury was accepted by the court, noting that railroads had again failed their burden of proving otherwise.[238]

The court also held that even though little evidence of transportation characteristics had been provided, "[t]he Commission has now complied with *NARI-I*'s directive to . . . determine whether rate disparities are justified by transportation characteristics submitted into evidence."[239] Other than the cost factors already included within variable costs, minimal evidence pertaining to transportation characteristics had been submitted; but since much of this evidence was available to the railroads, and since the burden of proof was on them to justify the rates, the presumption of unlawful discrimination remained.[240]

Where the court faulted the ICC's discrimination analysis was in its remedy. To alleviate discrimination, the ICC had allowed the railroads to increase both recyclable and virgin ratios to parity if it so chose, and as long as it remained under the 180 percent level. This, the court held, ran counter to the congressional intent to remove barriers from increased levels of recycling.[241] In remedying discrimination against recyclables, it was held that the recyclable rates could not be increased.[242] In its appeal to the Supreme Court, this was the only aspect of the *NARI-II* decision which the railroads challenged. In a *per curiam* decision, the Court held that even though the lower court had the authority to remand the issue of the appropriateness of the 180 percent standard, it could not order the revocation of the rates.[243]

REASONABLENESS

The two key questions in the ICC's handling of reasonableness were the use of the rate-cost ratios as the test, and the choice of its critical value. As to the first point, the court noted that "unlike other ICC investi-

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237. *Id.* at 1335.

238. *Id.* at 1336: "Since a finding of competition can logically and theoretically support an inference that shippers are potentially injured by discriminatory rates, it was up to the railroads to show that injury does not in fact occur."

239. *Id.* at 1337.

240. *Id.*

241. *Id.* at 1338-39.

242. Also cited was American Express Co. v. Caldwell, 244 U.S. 617 (1917), which similarly forbade the increasing of both rates to achieve equality. 627 F.2d at 1338.

243. *Consolidated Rail Corp.*, 449 U.S. at 612. It should be noted that the issue of the propriety of using rate-cost ratios was not raised to the Court.

gations into reasonableness of rates, the Commission established a standard based solely on the factor of variable cost."[244] This method was accepted:

> The Commission chose a simplified approach in this proceeding due to the complexity of and time constraints on its investigation. In light of these factors, we find it reasonable and within the Commission's discretion to use such a simplified standard based on revenue-cost ratio.[245]

It should be noted that through the acceptance of this test, the court at this point seemed to be indicating that demand considerations could be ignored entirely.

Though approving of a maximum reasonableness standard, the court did not take so kindly to the choice of the 180 percent level. They found a "disturbing lack of support and explanation" for it on the record.[246] They pointed out that the Commission had made no attempt to either "predict the profit margin which would result," or "analyze the fairness of that level of profit." The court went on to say that a "reasonable" profit could be made at the ratio level eventually decided upon, and that this reasonable profit could even conceivably exceed the "average" level of profit.[247] But the court then did an interesting thing. After seemingly ruling them out, it brought demand considerations back into the picture:

> [W]e require that the ICC must first examine the profit level that results from its prescribed standard of reasonableness for rates, and then justify higher than normal profitability levels by traditional standards such as, for instance, a relatively high value of commodities shipped . . . .[248]

Apparently, demand considerations have not been totally ruled out in reasonableness analysis in this case.

ANALYSIS OF THE DECISION

More explicity than seen before, the use of revenue-to-variable cost ratios in helping to judge discrimination and reasonableness was endorsed. The court approved of its use in the first step of "traditional" discrimination analysis, and as possibly the only step in reasonableness analysis. The use of ratios was endorsed even in the face of overall percentage increases in rates as a means to keep up with inflation.[249]

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244. 627 F.2d at 1339.
245. *Id.* (footnote omitted).
246. *Id.*
247. *Id.* at 1340.
248. *Id.* (all original emphasis removed, other added).
249. *Id.* at 1341. The basic remanded issues for nonferrous recycled materials have been resolved as a consequence of the Staggers Rail Act (where the maximum allowable revenue-to-variable-cost ratio is to be the average "that rail carriers would be required to realize, under honest, economical, and efficient management, in order to cover total operating expenses . . . plus a reasonable and economic profit or return . . . .") 49 U.S.C. § 10731(e); the Ex Parte 394 proceedings (which found the necessary average revenue-to-variable-cost ratio to be 146% in

The importance of demand considerations was eroded even further. In discrimination analysis, it still could be used to justify ratio disparities, but the shifted burden of proof makes this somewhat harder. Its use in reasonableness analysis now seems limited to perhaps helping set the overall level of maximum reasonableness or possibly in justifying rates exceeding it. It seems apparent, though, that one could go through a whole reasonableness analysis without ever considering demand factors.

As to other elements, the concern for the environment by Congress is again invoked to justify departures from traditional standards. Citing back to the *NARI-I* decision and to the legislative history of § 204 for its reading of the congressional mandate, the court found that the "clear congressional intent behind § 204 was to remove barriers to increased levels of recycling, if such barriers should be found to exist."[250]

V. CONCLUSION

A basic goal of price regulation is to promote a higher level of social well-being, or welfare, than is attainable absent regulation. In economic theory, the highest level of welfare, measured in terms of total surplus, is achieved only when the prices of goods are equal to their respective marginal costs of production. In an industry where marginal costs are less than average total cost, setting prices equal to marginal cost would lead to financial losses, since the firm's full costs would not be covered. The specific task that a regulator of such an industry would have, therefore, assuming a desire to keep the industry financially solvent without subsidization, is to maximize total welfare subject to full cost recovery by firms through user revenues.

The key variable our regulator must manipulate is how far above marginal costs the price of each commodity should be allowed to rise. That is, the price of each commodity should at least cover marginal cost, and then some or all of the prices must make contributions above marginal cost so that the firm can break even. The second crucial variable in welfare maximization, the demand characteristics for each commodity, provides the rationale for just how high the price, or rate, should be. According to the Ramsey-price analysis above, the less price elastic is demand, the smaller is the negative effect on the quantity demanded that a given rise in the price will cause, and so the higher the price should be

364 I.C.C. 425 (1980)); and NARI v. ICC, 660 F.2d 795 (D.C. Cir. 1981), and NARI v. ICC, 704 F.2d 638 (D.C. Cir. 1983) (where rates were ordered to drop immediately to the 146% level). For ferrous scrap, issues such as the proper standard of discrimination and the appropriate ratio, if any, for maximum reasonableness were still pending as of March 1984 in Ex Parte 319, reopened in 364 I.C.C. 874 (1981).

250. 627 F.2d at 1338, citing *NARI-I*, 585 F.2d at 532, 535; and *S. Rep. 94-499, supra* note 91.

allowed to rise above marginal cost. There may also exist certain externalities, such as environmental impact and general notions of equity and fairness. To have prices lead to a social optimum, adjustments beyond those based solely on internal cost and demand factors may have to be made.

The traditional handling of rate reasonableness and discrimination takes into account the two crucial elements of our economic model of welfare maximization. Cases typically refer to rate disparities, but the costs associated with those rates are often presented in the same breath. The ICC and courts are initially concerned with whether rates exist which are in some manner justified by costs.

Demand characteristics also traditionally enter the decision. If commodities are found not to be competitively injured by these disparities, or if it appears that the traffic in question can bear the burden, high rates (relative to costs) are often thereby justified. There is a theoretical flaw in the typical demand analysis in that the demand characteristics of a commodity are largely viewed in isolation rather than in relation to those for other commodities.

When it comes to the nonmarket externalities, the Commission is often hesitant to allow the outcome of a proceeding to be affected by them. Consideration of these factors, especially when not directly related to transportation concerns, is not traditionally viewed as being within its authority.

The case of virgin and recyclable materials is a case where traditional standards of rate lawfulness seemed not to reach a desired end. The results did not somehow seem "right" to Congress, all things considered. The traditional analysis had left out consideration of important factors such as the environment. In this instance Congress decided that in welfare terms, these factors would justify a movement away from the result of applying traditional standards, or at least the result the ICC had reached. Congress first made an effort in this direction in § 603 of the 3-R Act of 1973 by calling upon the Commission to adopt rules to "eliminate discrimination against the shipment of recyclable materials." Apparently still not satisfied with the response it received, Congress passed § 204 of the Quad-R Act of 1976 and made known its concern for the environment and its feelings that recyclables therefore required special treatment. Rather than approaching this directly, Congress chose to accomplish this purpose by shifting the traditional burden of proving rate lawfulness from shippers to the carriers, thereby carrying with it a presumption that existing rates were unlawful.

During the course of the Commission and judicial proceedings which followed, the importance in welfare terms of rate-to-variable-cost ratios was enlarge upon, while the role played by demand factors in justifying

disparities in rate-cost ratios diminished. Those ratios became the explicitly approved means of judging rate disparities, and seemingly of reasonableness itself. The environmental concerns underlying the directive from Congress were never directly quantified in the decision-making process by Congress, the courts or the Commission. Instead, the traditional consideration of demand factors (which are also essential in a Ramsey analysis) was weakened by the ICC and courts, apparently to facilitate the preferred result.

Regardless of the result in this instance, however, this approach can set a dangerous precedent, because demand considerations are crucial in reaching a maximum level of social welfare. That is, applying purely cost-based pricing to recyclable and virgin materials may improve the level of social welfare because of the environmental impact, but if extended to all commodities in general,[251] where environmental, demand and other factors are different, society could pay dearly in terms of welfare. If the end reached by the traditional standards is not viewed as optimal, then an adjustment should be made; but the emphasis should be on creating a process which consistently reaches desirable ends, such as through a system incorporating both Ramsey pricing and the internalization of externalities. The emphasis should not be on searching for any process which reaches the particular end desired in only the one case. It seems to be dangerous precedent here to make large alterations in the established and important ratemaking criteria of cost and demand factors solely to effect a change in the rate structure of recyclable and virgin materials.

APPENDIX

DERIVATION OF THE RAMSEY PRICING RULE ACCOMPANYING NOTE (8) ABOVE

Let us deal with a two-commodity case where the output (or quantity shipped) of each is denoted by X^a and X^b. Let the inverse demand function for each be denoted by $P^a(X^a)$ and $P^b(X^b)$; that is, the price of a good depends upon the amount of it sold or shipped (which is just the flip side of saying that output depends on price). The area under the demand curve at any level of output is simply the integral of the inverse demand

251. It is important to note that the Staggers Act has incorporated revenue-variable cost ratios as a standard for such things as market dominance, 49 U.S.C. § 10709(d) (1980), zones of unreasonableness, 49 U.S.C. § 10701(a), and when surcharges can be assessed, 49 U.S.C. § 10705(a). *See* Thoms, *Clear Track for Deregulation—American Railroads, 1970-1980*, 12 TRANSP. L.J. 183, 214-215 (1982).

function taken out to that output. Assume that the demand for each commodity is independent of the other (an assumption relaxed in Janis (1984)) and that there are no income effects. Finally, let the total cost to the producer or railroad of making or shipping X^a and X^b be $C(X^a, X^b)$. Total Welfare, T, as measured by the area under the demand curves less total cost, therefore is:

$$\text{(a)} \quad T = \int_O^{X^a} P^a(w)dw + \int_O^{X^b} P^b(w)dw - C(X^a, X^b).$$

This, plus the requirement that profits be non-negative, can then be put in terms of the following Lagrangian equation:

$$\text{(b)} \quad L = \int_O^{X^a} P^a(w)dw + \int_O^{X^b} P^b(w)dw - C(X^a, X^b) + \lambda[P^a(X^a)X^a + P^b(X^b)X^b - C(X^a, X^b)].$$

To solve this Lagrangian, first derivatives with respect to X^a, X^b, and λ (the so-called Lagrangian multiplier) must be taken and set equal to zero. The result with respect to X^a would be:

$$\text{(c)} \quad L_a = P^a - \frac{\partial C}{\partial X^a} + \lambda\left(P^a + X^a \frac{\partial P^a}{\partial X^a} - \frac{\partial C}{\partial X^a}\right) \equiv 0.$$

Rearranging (c), and dividing both sides of the equation by P^a, we get:

$$\text{(d)} \quad \frac{P^a - \frac{\partial C}{\partial X^a}}{P^a} = -\frac{\lambda}{1 + \lambda}\left(\frac{X^a}{P^a} \frac{\partial P^a}{\partial X^a}\right).$$

By dividing both sides by the bracketed term on the right, and noting that $\frac{1}{\partial P^a / \partial X^a} = \frac{\partial X^a}{\partial P^a}$ in the absence of income effects and cross elasticities, that $\frac{P^a}{X^a} \frac{\partial X^a}{\partial P^a}$ is the own price elasticity of demand for good a, ϵ^a, and that $\frac{\partial C}{\partial X^a}$ is the marginal cost of producing or shipping a, MC^a, we get:

$$\text{(e)} \quad \frac{P^a - MC^a}{P^a} \epsilon^a = -\frac{\lambda}{1 + \lambda}.$$

A similar result is reached when we differentiate the Lagrangian (b) with respect to X^b:

$$\text{(f)} \quad \frac{P^b - MC^b}{P^b} \epsilon^b = -\frac{\lambda}{1 + \lambda}.$$

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Equations (e) and (f) lead directly to the Ramsey-pricing rule of equation (1) in the text.

Differentiating the Lagrangian with respect to λ simply leads to the non-negative-profits constraint.

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