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The Conventional Wisdom About Cross-Haul

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The current contention [see Haddock, pp. 289–306] of many proponents of neoclassical solutions to problems seems to exclude the role of monopoly power as a serious explanation to real world occurrences. One such issue that has traditionally been explained, though not solely explained, as an outcome of less than perfectly competitive markets is the basing-point pricing system [Burns, pp. 477–489; Commons, pp. 505–519; Machlup; McGee, pp. 369–379; Smithies, pp. 705–726; and Stigler, pp. 213–225]. Some economists [Alchian; Haddock, pp. 289–306; and Loescher, pp. 6–35] now suggest that basing-point pricing systems represent merely an indication that sellers are unable to collude successfully and that such schema are indicative not of imperfect but of perfect competition.

We disagree with this view. In particular, we believe that the issues of cross-hauling, phantom freight, and freight absorption in basing-point pricing situations are explained better by models that assume something less than "perfectly" perfect competition. Economists have developed various models which yield cross-hauling and freight absorption; included among these models are spatial Cournot behavior, Nash-in-prices and the dominant firm models. This paper, rather than developing another model, focuses attention on the competitive model's need to rely on special assumptions or exogenous factors to justify observed behavior such as cross-hauls; whereas in an imperfectly competitive model such observed behavior becomes an implication. We, therefore, posit a simple spatial model which assumes a group of firms that receive monopoly profits due to imperfect competition. This model is offered not only as the explanation but is intended to demonstrate the greater internal robustness of an imperfectly competitive model over that of the perfectly competitive model for explaining various behaviors associated with basing-point pricing.[1]

COMPETITION AS A PREREQUISITE FOR BASING-POINT PRICING:

Haddock purports to demonstrate that basing-point pricing with cross-hauling is fully compatible with a competitive market. In our opinion, his effort is a prime example of the overly rigorous application of Pareto optimality theory or what Melvin W. Reder [p. 11] aptly calls "tight prior equilibrium." Further, we believe that effort is largely irrelevant to real world application of the antitrust laws. Haddock's conclusion generally relies on rigorous application and interpretation of profit maximization; yet, when necessary to account for an outcome, he relies on approximating behavior, such as the possible interruption of supply and imperfect information, to explain cross-hauling; these explanations somewhat belie competition [see McGee, p. 377 for an earlier discussion of supply interruption]. The approach produces a non-compelling model, at best, if not a merely self-serving model.

We focus on a model a'la Haddock of basing-point pricing in the belief that he and others fail to completely note the implications and shortcomings of that model for explaining the

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antitrust issues of basing-point prices, cross-hauling, freight absorption and phantom freight. Haddock's [pp. 294–300] model of basing-point pricing relies on the particular assumptions that firms at site I (the base) are competitive among themselves and that the site II firm is a monopoly. The assumption of competition at site I substantially eliminates the antitrust debate. The problem has been assumed away. Quite simply competition in the model restrains, at some location, the monopolist's price behavior. Surely, logic denies that pricing to meet competition is an antitrust violation. If any violation of antitrust law is buried in the model, it is how the site II monopoly is maintained. The assumption of competition eliminates such explanations for cross-hauling as freight absorption or monopolizing behavior and collusion in order to maintain economic profit; thus to explain cross-hauling, the competitive model must rely upon factors such as supply diversification. Supply diversification according to Haddock includes the following instances: the buyer intentionally cross-hauls paying a higher price to avoid becoming entirely dependent on a local supply. Alternatively, the costs of "detecting and eliminating individual instances of cross-hauling" may exceed the firm's benefits in which instances the cross-hauling is ignored. Or, some natural cost advantage of a site or strong economies of long haul transportation may induce efficient cross-hauling [Haddock, p. 292]. The reader should understand that the same motivations to reduce supply risk will typically exist even when collusive behavior accounts for the cross-haul. Thus the existence of supply diversification does not exclude the potential for antitrust violations.

Of course, with perfect communication and enforcability a cartel takes all the above into account. In collusion enforcability cannot be assumed (contracts contrary to policy have no legal force). To allocate markets as well as fix prices might require doubling the conspiracy size to include site I and II sellers, would require far more (potentially observable) negotiation, and may be overtly observable by the Antitrust Division [Hay, 1982]. As long as there are decreasing returns to scale in the non-agreed upon competitive tools (e.g., geographic scope, advertising) in the long run [short run] then price fixing will raise rents [quasi-rents]. Hence, collusive agreements generally will not act like cartels.

The competitive model explains basing-point pricing as the outcome of competitive pricing behavior coupled with transportation which spreads the competition at site I over a wide area. This is only a possible explanation for the observed behavior. In particular, the assumption of competition diverts attention from alternative explanations by implying that the behavioral pattern is innocent and to be expected; whereas, antitrust enforcement should be ever alert to behavioral and price patterns as possible indicators of an antitrust violation.

COLLUSIVE PRICING POLICIES:

The central antitrust thrust of basing-point pricing appears to be the issue of collusion (not restricted to formal agreements [Hay]) or monopolizing behavior. In particular, collusion, which reduces price competition and possibly entry, is generally considered an anti-competitive practice and hence an antitrust violation. Collusion facilitates maintenance of monopoly prices to the detriment of buyers.

In contrast to Haddock's competitive model, we present an analytical framework which demonstrates that basing-point pricing with accompanying freight absorption and cross-hauling are "naturally" consistent with the longer run profits typically assigned to imperfect competition. Let us assume therefore the existence of positive mill profits at site I due to imperfect competition. These profits result from the collective firms' ability to maintain price above marginal revenue equals marginal cost. The pricing behavior *cum* profits may be

explained by a variety of causes. For example, one or a few firms may dominate the market with each individually recognizing its mutual gain from avoiding cut-throat competition; or, differences in cost structures or accessibility to key inputs as well as other factors may account for the continued maintanence of the imperfect competition at site I. In the long run, the interaction of economies of scale and demand elasticity may make entry at site I unattractive even while existing firms generate profits.

Figure 1 illustrates our assumptions. The curves marked MC_I and MC_{II} represent the respective sites' marginal cost to prospective locations and hence the competitive price schedules. We assume that site I firms set price, inclusive of monopoly profit, along P_I. The site II basing-point price schedule is P_{II}. Site II is a basing-point for the region to the right of S with site I the base to the left. However, the two production bases can price compete throughout region R-T. Site I firms can trade-off some profit in the R-S region in order to underprice site II. Similarly, the monopoly at site II can always underprice site I firms in the S-T region if it trades-off monopoly profits. Generally then in the area R-T the sites price compete. The result is that in R-T, cross-hauls with apparent freight absorption occur and buyers potentially supply diversify at no cost to themselves. Within the R-T region the result of firms trading-off profits to price match along P_I in region R-S and P_{II} in S-T is that a buyer chooses among suppliers upon some non-price basis which encourages supply diversification cross-hauling by making it costless. The cross-hauling results from buyers choosing among geographically identifiable firms offering identical C.I.F. (cost, insurance and freight) prices. Additional cross-hauls from site I into site II's absolute base (to the right of T) result if buyers opt to pay a premium in order to diversify their sources of supply. Buyers to the left of R pay a premium if they choose to diversify supply away from the site I market to the site II monopoly. Risk avoiding cross-hauls can be economically justified provided they substitute (transportation) for a real risk (supply disruption) at a lower cost. Trading-off monopoly profits through price competition to absorb freight, which might be termed a seller initiated cross-haul, is not an antitrust violation; nor is a buyer's a'la Haddock paying a premium to reduce the risk of supply disruption, which might be termed a buyer initiated cross-haul, a violation of antitrust law. ("The good faith" defense,

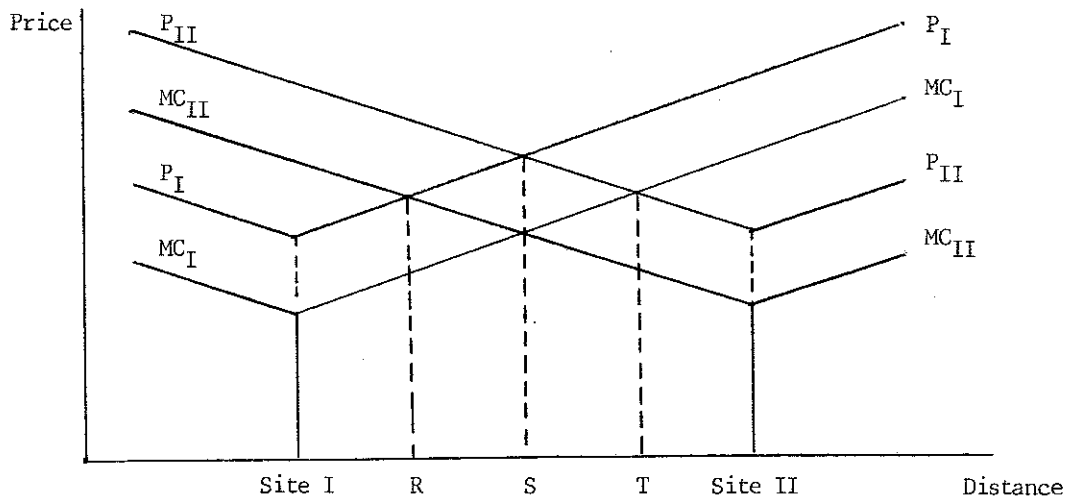

Figure 1

which while somewhat controversial, was judged by the U.S. Supreme Court to be an absolute defense in the *Standard Oil Case* [1958, 355 U.S. 396].) A major prediction of our model then is that two-way cross-hauls occur both as the outcome of seller price matching behavior—an implication absent from Haddock's model—and as the result of buyers seeking to diversify supply.

A competitive model, such as Haddock's, must rely upon extraneous factors such as supply diversification, product differentiation or time lags to explain two-way cross-hauls. These factors, however valid, must be introduced into the model rather than arising within the model. If site I is competitive, then risk avoidance is insufficient to create two-way cross-hauls. Supply diversification depends upon the presence of some monopoly supply problem to provide the incentive to buy at a higher price from site II, for example, concern over a labor union strike. On-the-other-hand, long run competitive pricing eliminates the seller's profit incentive to absorb freight.

The discussion leads directly into an examination of the phantom freight issue. A model of imperfect competition suggests a parallel relationship between phantom freight and freight absorption. In particular, phantom freight represents a monopoly profit. The profit results from the seller's need only to match or marginally lower the quoted price from a higher cost (production plus delivery) competition; for example, site II meeting site I's offer price in S-T. Freight absorption is the sacrifice of profit to match a competitor's lower opportunity cost induced by price competition. Hence, phantom freight and freight absorption respectively are consistent with pricing generally above marginal cost. In the 1981 Plywood Antitrust Case the Fifth Circuit Court of Appeals wrote [Plywood, p. 632]:

> The jury determined that defendants . . . had engaged in a conspiracy in restraint of trade . . . and that the conspiracy caused financial damages . . . equal to the amount by which 'west coast freight' (freight computed as though the product were shipped from the west coast) exceeded actual freight charges from southern shipping points (such excess being referred herein as "phantom freight").

(See our page 33 for an indication of how an economist might begin to calculate the damages. This suggests a quite different amount than that set by the Court.)

Furthermore, consider the outcome for the region R-T in the context of a duopoly or joint profit maximization. Intense price competition in this region lowers profits to all firms. There is the potential for monopoly profits to be achieved through collusion. Collusion could shift basing-point boundaries. For example, site I firms could expand their basing-point area into the site II base by threatening to begin production at site II. Such expansion increases profits accruing to site I firms provided price exceeds MC_I. The site I prices with profits included may be maintained through recognition of mutual self-interest, some form of price leadership or through illegal collusion. The site II monopoly using its regional cost advantage could maintain its market. But the monopoly could trade-off extension of its base all the way to S in order to retain its monopoly position though in a smaller market. With phantom freight measured as the surplus of price over cost, phantom freight accrues to the monopoly on sales into the extended site I base. This represents but one possible outcome. Another possibility has the site II monopolist as a potential entrant into the site I base. Were the monopoly to price compete in the site I base, price there would decline. Again a joint profit maximizing solution with collusive behavior becomes attractive.

The site I and site II mark-ups over marginal cost differ to any location in R-T (other than uniquely at S). Consider the outcome should a seller own a plant at site I and II; and suppose

that the absolute mark-up at site I is unequal to the mark-up at site II. Then the common firm will absorb freight for some sales (i.e., sell at site I plus freight, but ship out of the site II plant). If there are locations where the common firm is doing this systematically (i.e., not sporatically due to demand fluctuations), then at least site II is revealed to be non-competitive (and a minimum bound on how non-competitive can be calculated through the implied freight absorption).

An example of the above analysis might be found in the Plywood Case which Haddock references concerning price-taking [Haddock, p. 297]. Let the Pacific Northwest (PNW) be site I and the Southeast (SE) be site II; assume SE firms operate plants in the PNW; and prices quoted by SE firms to Florida buyers are PNW plus freight. In such circumstances Haddock would assert that the SE was merely price-taking. But what if the SE also shipped to an intermediate destination (D) between itself and the PNW? Begin by dividing linear transport costs (X) from the PNW to SE into transport costs between PNW and D (X′) and between SE and D (X″)

$$X = X' + X''.$$

Since the SE is competitive and price-taking, the SE price is

$$P_{SE} = MC_{SE} = P_{PNW} + X = P_{PNW} + X' + X''$$

(Given the natural resource nature of plywood, different PNW and SE marginal costs should be expected, esp. in the short run.) At D the price situation is

$$P_D = P_{PNW} + X' = P_{SE} + X''.$$

But substitution into the latter expression shows that the SE's marginal cost of supplying D is

$$P_{SE} + X'' = P_{PNW} + X + X'' = P_{PNW} + X' + 2(X'');$$

whereas, the competitive PNW actually charges only P_{PNW} plus X′. If competitive and price-taking in its local market, the SE firm(s) will not sell to D. Evidence of shipments from the SE towards the PNW is evidence that the SE is not competitive and places the damages at twice the transport costs between the SE and the intermediate location minus twice the actual transport costs.[2]

CONCLUSION

Based on legal case history and economic consideration, a major focus of antitrust policy should be concerned with the existence and maintenance of monopoly profits. An appropriate focus for antitrust investigation occurs in any situation where competing firms maintain price above cost. When geographically separated firms sell in the same area without increased price competition and consistently quote identical prices, we should question the mechanism at work suppressing price competition. Certainly situations in which firms cross-haul at a declining price even as distance increases suggests a less than perfectly competitive situation. Suppression of price competition, esp. through collusion, violates the antitrust laws. Continuation of monopoly profits presents an incentive to suppress competition. Should a situation with cross-hauls continue, an antitrust investigation would seem appropriate. A successful attack on a basing-point pricing system might be easier under Section 5 of the Federal Trade Commission Act which does not require proof of an agreement (for a careful discussion of this point see Hay, 1982).

This paper has presented a way that seller initiated cross-hauls can arise from monopolistic behavior illegal under antitrust laws. Such cross-hauls can also arise from legal behavior, like promotion of a differentiated product in a new market, supply diversification, or as the outcome of depressed sales. Thus, although a seller initiated cross-haul is not evidence that antitrust laws have been violated, the existence of such a cross-haul may serve as a flag indicating the possibility of a violation.

FOOTNOTES

1. The authors acknowledge the useful suggestions of several anonymous referees.
2. We thank an anonymous referee for this insightful example.

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