BASING POINT PRICING AND THE EFFICIENCY OF CROSS-HAULING FREIGHT

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I. BASING POINT PRICE SCHEDULES

The occasional sighting of basing point price schedules has long baffled economists. Basing point prices exist if producers at several sites each quote delivered prices as prices f.o.b. a subset of the sites (called the bases of the price schedule) plus transport charges from the relevant base. A case in point was found in the steel industry until early in the present century. Pittsburgh was the original base of the price schedule used for steel. Thus, a producer in Chicago would sell steel in Chicago at the same price as steel could be got from Pittsburgh, but he delivered steel to Toledo, for example, at a price below the Chicago price (for Toledo is nearer to Pittsburgh than is Chicago), even though he had to absorb transport charges to get the steel from Chicago to Toledo.

Attacking the use of basing point prices in steel, the Federal Trade Commission asserted that the practice was anti-competitive and, also, that the practice of cross-hauling of freight inevitably accompanied use of such schedules. The alleged cross-hauling found steel produced at Pittsburgh and shipped west passing identical steel produced at Chicago, with the Chicago steel in transit to the east. It was apparent to all, without further investigation, that such cross-hauling must be inefficient, therefore costly to the economy.

Some of the most noteworthy economists of the century have approached the basing point price problem. J. M. Clark, Demsetz, Machlup, Smithies, and Stigler are each represented in the discussion. It is sufficient here to note that none of the authors mentioned argued that basing points with cross-hauling can occur in competitive markets, and most argue explicitly that some degree of monopoly power is required.

The argument I offer below is quite different: 1) Cross-hauling will sometimes occur in competitive industries because cross-hauling is sometimes efficient. For cross-hauling to be efficient, under my argument, it is necessary (but not sufficient) that some production sites have natural cost advantages over others, and that there exist economies of long-haul in transport. 2) A basing point pricing schedule will sometimes be the profit maximizing price schedule for producers at those sites less favored by nature. If a basing point schedule is to be profit maximizing, the economies of long-haul must be of significant strength within the relevant market areas, where a more precise definition of significant strength depends on demand elasticities, but is best deferred to page 14 below. 3) Even with no artificial barriers to entry, no further entry need occur at the high cost site if scale economies to producing (but not necessarily to delivering) the commodity exist through some range of outputs greater than the output produced at the high cost site. If the uniform price (f.o.b. site of production) demand curve facing the producer at the high cost site nowhere intersects his average cost curve, the price discrimination implied by basing point prices may be used to bring economic profits up to zero from below; no entry follows.

The second section of the paper presents the argument for efficient cross-hauling in a competitive industry. The cost of producing and delivering the commodity to consumers is explicitly broken into production costs and transport charges to reveal the source of the efficiency, when, in fact, it exists. In the third section I argue that, with no entry possible at the high cost site, basing point price schedules may be profit maximizing for a firm at that site. In the fourth section, I relax the barriers to entry and show that such relaxation need not negate the argument of the paper. Finally, I point out some potential directions for an empirical test of the hypothesis.

Curiously, the argument I use below leans heavily upon J. M. Clark's _The Economics of Overhead Costs_, yet Clark himself never used his earlier ideas to analyze basing point price systems. Be that as it may, the critical ideas are Clark's; my contribution, if any, is simply applying those ideas to a new area of investigation, an application which would undoubtedly have occurred to Clark eventually, had he lived.

II. ECONOMICALLY EFFICIENT CROSS-HAULING

Assume that competitive firms at two separate sites are engaged in the production of some commodity. The average cost curve facing each firm is u-shaped, f.o.b. site of production, but at one site the minimum point on each firm's average cost curve is below the minimum point on each firm's average cost curve at the other site.* Consumers

* Such differing cost curves may arise from natural differences in the environments of the two sites. For example, Pittsburgh may be a cheaper place to produce steel (neglecting transport costs) than Chicago because of the proximity of iron ore and coal, because the Pittsburgh area coal seams are thicker, less convoluted, or of a grade requiring less expense in coking, or for a variety of other reasons beyond the control of the firms.

are located around the country, not solely at the two production sites, and the consumers are sensitive to delivered price, not just the cost of producing the physical commodity. Producers at the two sites deliver to consumers, purchasing transport services as an input in the production of the delivered commodity. The transport rate schedules facing the firms reflect economies of long-haul, by which I mean if the transport charge, t, for shipping one ton m miles is

$$t = t(m)$$

then $$\frac{d\,t(m)}{d\,m} \equiv t'(m) > 0$$

but $$\frac{d^2 t(m)}{d\,m^2} \equiv t''(m) < 0^{*}$$

* Such rate schedules are, in fact, typical in modern transport industries, so the producing industry will perceive such economies of long-haul whether or not they are economically sensible. Furthermore, the schedules are probably sensible, reflecting the true (average) resource costs involved in hauls of varying

distances; longer hauls typically have available a larger number of alternative routes than do shorter hauls. From lack of alternatives, the shorter haul may be forced to utilize a temporarily clogged route, but the route of the longer haul may be chosen to minimize interference with other traffic. If transport firms deem it unprofitable to vary rates frequently in response to short-run demand fluctuations, the freight rate per ton-mile for the shorter haul will reflect the average resource cost and so will exceed that for the longer haul. Higher rates on shorter hauls occur even though, on occasion, the optimal route selected for the longer haul includes the shorter haul. So, for example, steel from Pittsburgh may sometimes move through Chicago, be put on a train carrying steel from Chicago, yet be charged a rate per ton-mile which is lower on the margin than the rate charged Chicago producers.

The situation outlined above is illustrated in figure 1 below. Figure 1a shows delivered cost along a line through the two production sites with distance along the horizontal axis; figure 1b is a map with contours showing delivered cost from each production site to various points of consumption. Figure 1a is a cross-section of figure 1b along the line ab. If prices chosen by firms induce consumers to purchase from the least costly site, considering both production and transport costs, the market boundary between the two sites will occur at e and e' in 1a, or along the locus which includes e and e' in 1b. At such points the resource costs for the delivered commodity from one site are equal to the costs from the other site. At all other points, production and delivery from one site or the other requires less resources than from the other site, and so is preferred.

Notice that the market area for firms at site I includes points to the left of e and to the right of e'. Shipments from I to points to the right of e' will sometimes be routed through II. Consequently, it will on occasion be observed that shipments from site II heading to the left toward some point x pass shipments from site I heading to the right toward some point y. In other words, cross-hauling is

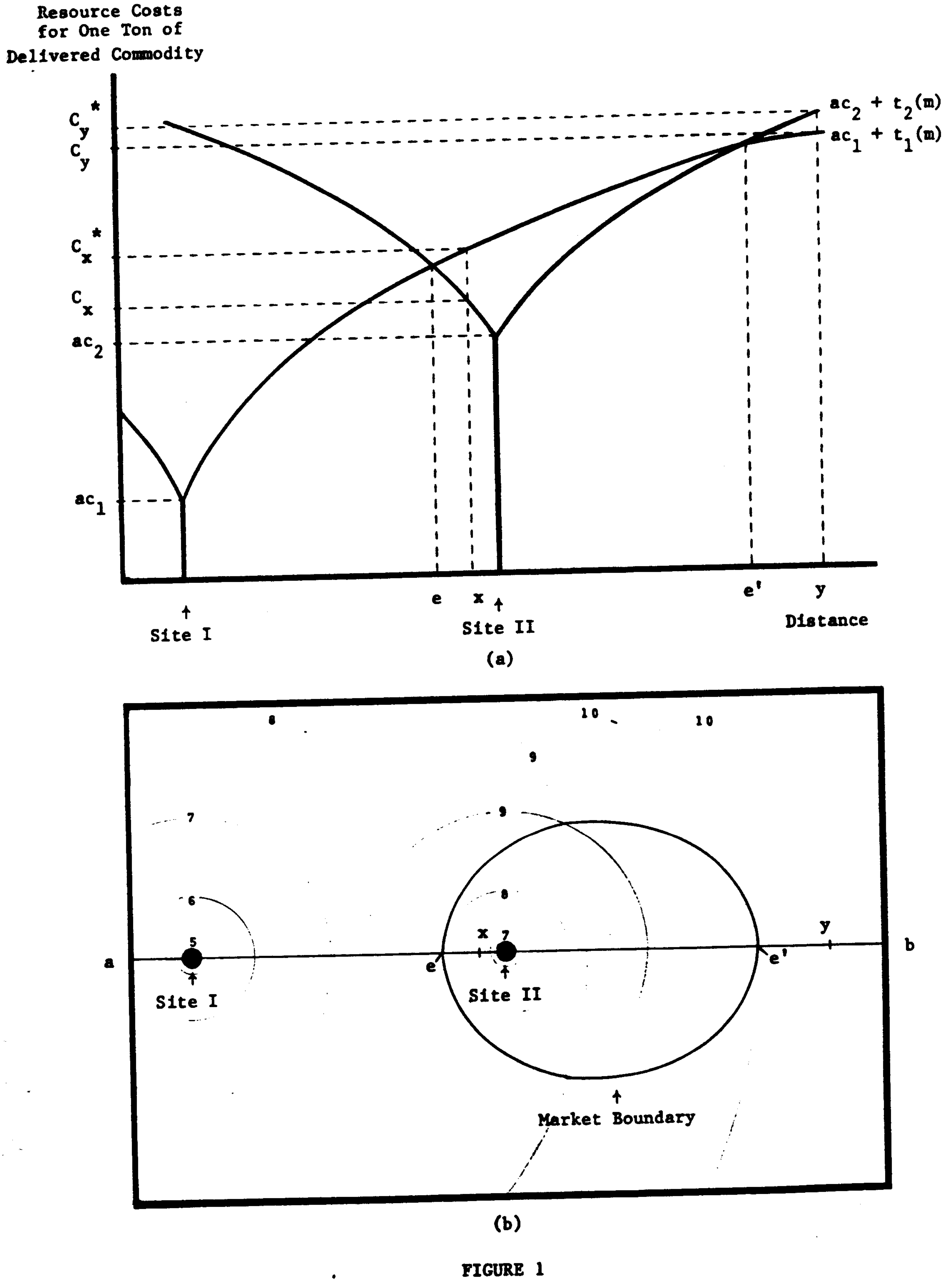
Resource Costs
for One Ton of
Delivered Commodity
C_y^*
C_y
C_x^*
C_x
ac_2
ac_1
$ac_2 + t_2(m)$
$ac_1 + t_1(m)$
e
x
e'
y
Site I
Site II
Distance
(a)
8
10
10
9
9
7
6
8
5
7
x
y
a
b
e
e'
Site I
Site II
Market Boundary
(b)

FIGURE 1

occurring and it is efficient! Suppose the shipments from site I to y were stopped at x while the shipments from site II to x were rerouted to y. Less cross-hauling would occur, but average resource costs of serving x would increase from C_x to C_x^* while resource costs of serving y increase from C_y to C_y^*.

The results above seem paradoxical, leaving one uncomfortable with the counterintuitive conclusion that one can save resources by shipping identical commodities past each other. The discomfort is reduced if the resource costs are divided explicitly into transport costs and production costs.

Consider first the transport costs. For shipments to the right of site II, that site always has an advantage over site I for transport costs; site II is closer to every point to its right and $t'(m) > 0$. However, the cost advantage site II realizes diminishes with distance; due to economies of long-haul, the marginal cost per unit distance is less from I than from II. Site I is further away, therefore engaged in a longer haul, and $t''(m) < 0$.*

* The situation is, of course, reversed to the left of site I. But, as will be seen shortly, since site I is the low-cost production site, its transport cost advantage to the left is redundant and leads to no interesting conclusions.

Let d be the distance between site I and site II. Then transport costs to some point z which is d_z miles to the right of site II is

$$t_1(z) = t(\ d + d_z\ ) \text{ from site I, and}$$

$$t_2(z) = t(\ d_z\ ) \text{ from site II.}$$

The transport cost advantage of site II is

$$t_1(z) - t_2(z) = t(\ d + d_z\ ) - t(\ d_z\ )$$

By the mean value theorem

$$\frac{t(\ d + d_z\ ) - t(\ d_z\ )}{d} = t'(\phi) \text{ for some } \phi,\ d_z \leq \phi \leq d + d_z.$$

Hence, $t(d + d_z) - t(d_z) = d \times t'(\phi)$.

Since ϕ is confined to the interval $[d_z, d + d_z]$, as d_z increases (i.e., as one moves further to the right) ϕ increases. But $t''(m)$ was assumed negative for all m, so $t'(\phi)$ falls as ϕ increases, but does not reach zero (which would imply zero marginal cost per unit distance). Hence, site II transport cost advantage falls toward some positive limit as distance increases to the right.

Transport charges per ton to various points from site I and site II are shown in figure 2a, while the difference between the two is shown in figure 2b.

Site II always has a transport cost advantage when shipping to the right, but that advantage is a positive decreasing function of distance. But in addition to resources used in transport, total resources used in producing and delivering the commodity include resources used in the production of the physical commodity. Site I has an advantage in production costs, by assumption. Moving to the right of site II, the declining transport advantage from site II <u>may</u> become insufficient to compensate for the production cost disadvantage of site II.* In

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* If production costs at site i are c_i, a market boundary will exist to the right of site II if $(c_2 - c_1) > \lim_{\phi \to \infty} t'(\phi)$.

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figure 2b, the production cost differential is shown as $(c_2 - c_1)$ and is sufficient to generate a reverse market boundary. Beyond some distance, it is worthwhile expending the small increment in transport resources for shipment from site I in order to save production resources. Cross-hauling may be efficient.

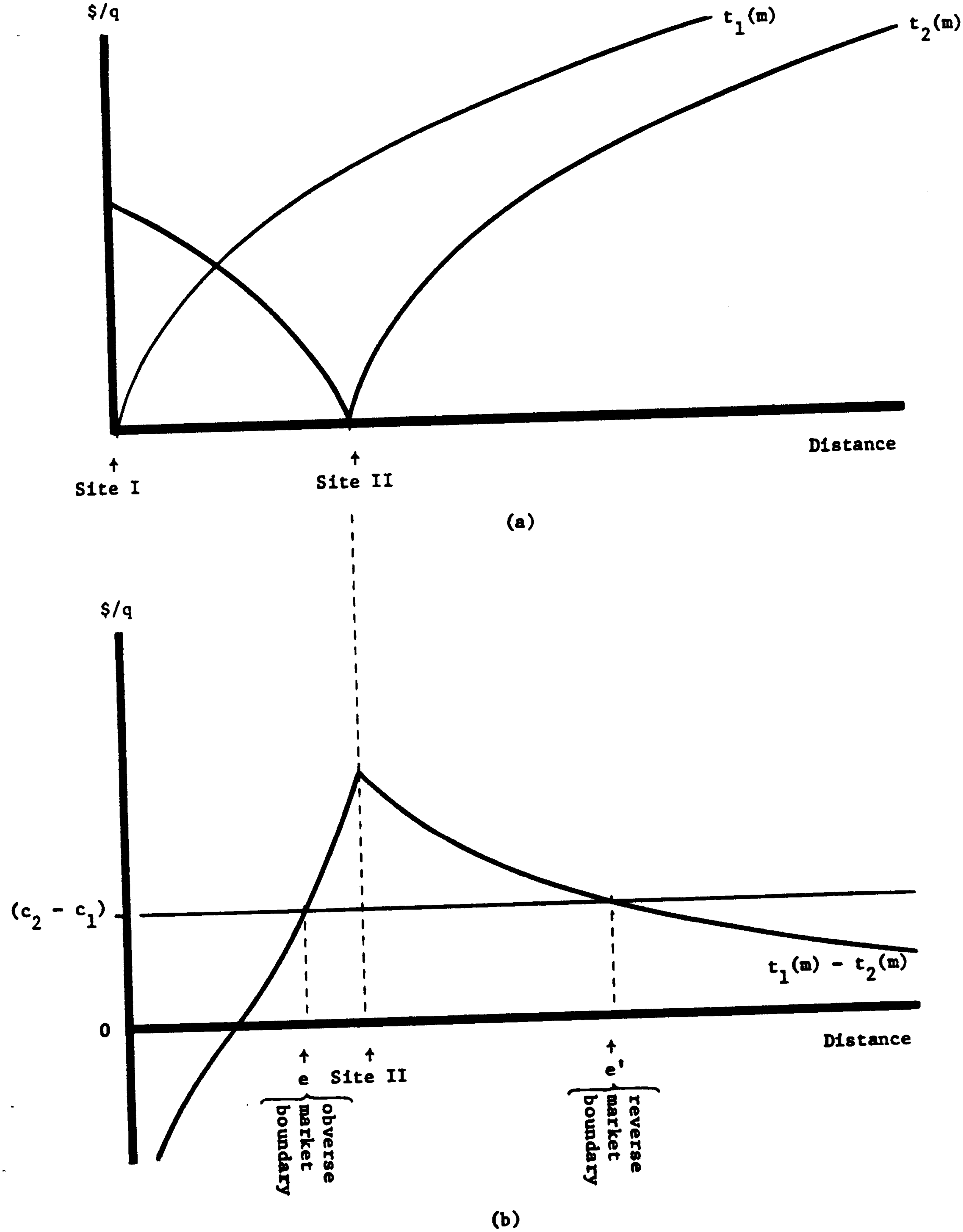
$/q
$t_1(m)$
$t_2(m)$
Distance
Site I
Site II
(a)
$/q
$(c_2 - c_1)$
0
$t_1(m) - t_2(m)$
Distance
e
Site II
e'
obverse market boundary
reverse market boundary
(b)

FIGURE 2

III. OPTIMAL PRICING SCHEMES WITH ENTRY BARRED

Suppose, for simplicity, the market is a straight line through site I and site II. There is an identical demand curve for the delivered commodity at each point. Numerous firms produce simultaneously at site I (the low-cost site), each firm producing an output q_1 (see figure 3a) and selling the commodity for p_1, f.o.b. site of production. The firms will also deliver the commodity at a price schedule of p_1 plus transport charges, as shown by the line P in figure 3b. A single firm exists at site II and further entry at that site is impossible.

What demand conditions face the firm which is at site II? At each point in the market, such as point A in figure 3b, there exists a market demand schedule such as that shown in figure 3c. However, producers at site I stand ready to supply the commodity to consumers at A at a price of p_1 plus transport, or P_a. Hence, the demand curve at point A which faces the producer who is located at II is horizontal at P_a until it cuts the market demand at a quantity q_a, then follows the market demand for larger quantities; the producer at site II cannot get a higher delivered price than is being charged for deliveries from site I, but he can have the entire market for any lower price. His demand curve has a kink at the delivered price from site I, P_a.

If the demand curve is kinked, the marginal revenue curve has a gap, as shown in figure 3c. The lower end of the gap is

$$mr(q_a) = P_a\left(1 + \frac{1}{\eta_a}\right)$$

where $\eta_a < 0$ is the elasticity of the market demand curve at a height

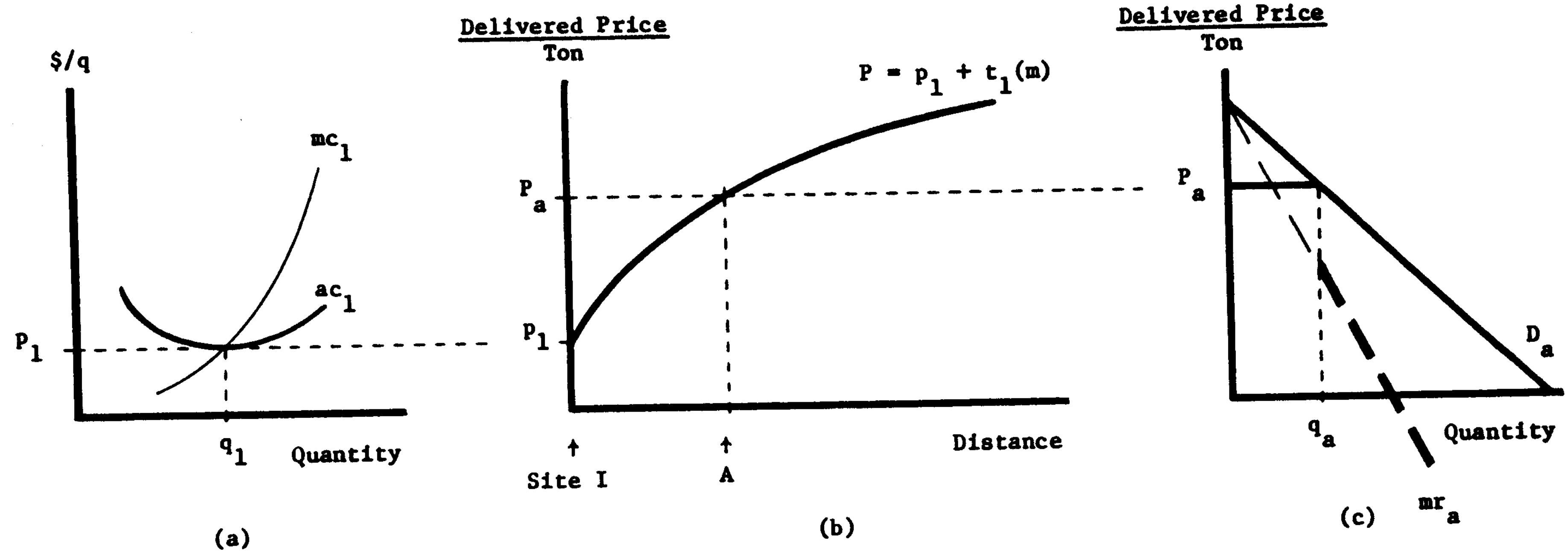
$/q
mc1
ac1
p1
q1
Quantity
(a)
Delivered Price
Ton
P = p1 + t1(m)
Pa
p1
Site I
A
Distance
(b)
Delivered Price
Ton
Pa
Da
qa
Quantity
mra
(c)

FIGURE 3

of P_a.* The upper end of the gap is P_a. If the marginal cost of

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* This well-known expression is derived as

$$tr(q) = p(q) \times q$$

$$mr(q) = \frac{d\ tr(q)}{d\ q} = p(q) + q\frac{d\ p(q)}{d\ q}$$

$$= p(q)\left(1 + \frac{q}{p(q)}\frac{d\ p(q)}{d\ q}\right)$$

$$= p(q)\left(1 + \frac{1}{\eta(q)}\right)$$

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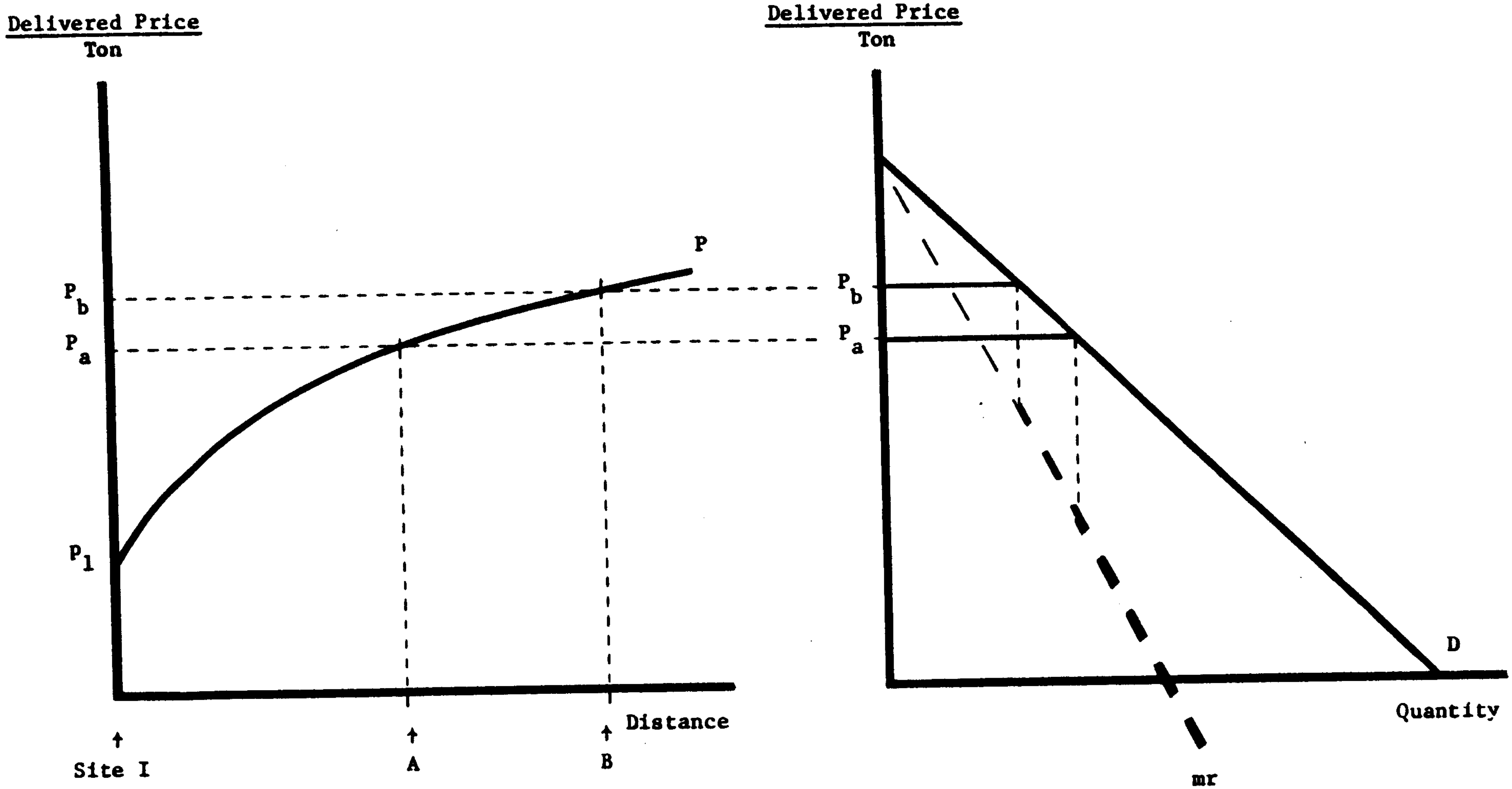
producing (mc_2) and delivering (t_2) the commodity from site II to A falls within the gap, so that

$$P_a \geq mc_2 + t_2 \geq P_a\left(1 + \frac{1}{\eta_a}\right)$$

the profit maximizing price for the site II producer to charge for delivery to A is P_a, or the delivered price from site I. In effect, for consumers at A, the producer at site II will be charging a basing point price with the base at site I.

I have not yet stated exactly where point A is; it could be any point. Suppose point A is, in fact, site II. The site II producer is charging local buyers a price for which the commodity could be got from site I, but the site II producer takes all local sales due to greater speed of delivery (since he is closer than producers at site I).

As the salesmen for the producer at site II examine demand conditions in localities to the right of site II (hence, away from site I), the delivered price from site I increases. The increase in delivered price from I causes the horizontal segment of the demand curve to move upward by the amount of the increase in transport cost from site I, as shown by the movement from P_a to P_b in figure 4b. The lower end of the gap


Delivered Price
Ton
P
P_b
P_a
P_1
Site I
A
B
Distance
Delivered Price
Ton
P_b
P_a
D
Quantity
mr

(a) (b)

FIGURE 4

in the marginal revenue curve moves up by

$$d\ mr = P_b - P_a + \frac{P_b}{\eta_b} - \frac{P_a}{\eta_a}{}^{*}$$

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* $$d\ mr = mr_b - mr_a = P_b\left(1 + \frac{1}{\eta_b}\right) - P_a\left(1 + \frac{1}{\eta_a}\right)$$
$$= P_b - P_a + \frac{P_b}{\eta_b} - \frac{P_a}{\eta_a}$$

---

which will exceed the increase in transport charges if $\frac{P_b}{\eta_b} - \frac{P_a}{\eta_a} > 0$, as it typically will be. Therefore, in order for the producer at II to maximize profits by charging consumers at B the delivered price from I (the basing point price, base I), it must be true that

$$p_1 + t_1(A) + d\ t_1 \geq mc_2 + t_2(A) + d\ t_2 \geq \left[p_1 + t_1(A) + d\ t_1\right]\left(1 + \frac{1}{\eta_b}\right).$$

The lower end of the gap in the marginal revenue curve will usually move upward more rapidly than the increase in transport charges from I. But, due to economies of long-haul, the increase in transport charges from II, and, therefore, the increase in marginal costs of producing and delivering the commodity from II, will also increase more rapidly than the increase in transport charges from I. Consequently, if economies of long-haul are strong enough, the marginal cost curve can remain in the gap in marginal revenue as one examines markets further and further to the right.* Basing

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* Supposing the marginal cost curve was at the lower end of the gap in marginal revenue at A (the most desperate case),

$$mc_2 + t_2(A) = \left[p_1 + t_1(A)\right]\left(1 + \frac{1}{\eta_a}\right). \qquad (1)$$

For marginal cost to remain in the gap as one moves to the right requires that

$$mc_2 + t_2(A) + d\ t_2 \geq \left[p_1 + t_1(A) + d\ t_1\right]\left(1 + \frac{1}{\eta_b}\right). \qquad (2)$$

Subtracting (1) from (2) yields

$$d\, t_2 \geq d\, t_1\left(1 + \frac{1}{\eta_b}\right) + \left(p_1 + t_1(A)\right)\left(\frac{1}{\eta_b} - \frac{1}{\eta_a}\right). \qquad (3)$$

For the special case of constant elasticity demand curves

$$\frac{d\, t_2}{d\, t_1} \geq \left(1 + \frac{1}{\eta}\right).$$

The left-hand term is always greater than unity with economies of long-haul, while the right-hand term is always less than 1 with downward sloping demand curves. Therefore, basing point pricing will be profit maximizing everywhere to the right of II if it is optimal at the site of production itself, if there are economies of long-haul, and if the demand curves everywhere have a common and constant elasticity.

Considering a different case, if demand curves at all points are identical and linear, the marginal revenue curve has twice the slope of the demand curve. Hence, if marginal cost cuts the gap in marginal revenue at its lower end at site II, it will remain in the gap if the marginal transport rate on the short-haul from site II is at least twice the marginal transport rate on the long-haul from site I.

In general, for <u>any</u> rate of change of elasticity along the demand curve, there will be some degree of economies of long-haul sufficient to make basing point prices profit maximizing if they are profit maximizing at the site of production itself.

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point pricing (base I) may then be the profit maximizing price schedule for the producer at II for all localities to the right of II.

As one examines demand conditions facing the producer at II as his salesmen move to the <u>left</u> toward I, the height of the horizontal segment of the demand curve facing the producer at II declines; as the distance to I falls, transport charges from I fall. The site II producer's marginal cost of producing and delivering, however, rises, for the distance from II is increasing. Therefore, if marginal cost of producing and delivering cuts the gap in marginal revenue at II, it will certainly remain in the gap to all points to the right of II until it rises above the demand curve itself. If a basing point price schedule (base I) is site II's profit maximizing price schedule to every point to the right of II, it will be the profit maximizing schedule to every point.

It may seem superficially that the cross-hauling argument of the preceeding section is unrelated to the basing point pricing argument presented here. However, it will be remembered that in order to get cross-hauling, it was necessary to suppose there exist economies of long-haul. Such a transport rate schedule is also desirable if one wishes to argue that a basing point pricing scheme is the profit maximizing system of price discrimination for the producer at II. If there are no economies of long-haul, the horizontal segment of the demand curves facing the firm at II will rise (as one moves to the right of II) at exactly the same rate as the marginal cost of the firm at II. The lower end of the gap in marginal revenue will ordinarily rise more rapidly than the kink in the demand curve. Without economies of long-haul, the marginal revenue curve is likely to overtake the marginal cost curve far to the right of site II, making prices less than delivered price from site I optimal. Hence, although the conditions needed to produce cross-hauling are not identical to those needed to produce basing point price schedules, they are related; it is not surprising that the two phenomena are frequently observed to occur simultaneously.

IV. BASING POINT PRICING WITH FREE ENTRY

I have argued above that one can sometimes generate both cross-hauling and basing point price schedules as profit maximizing behavior by firms. Furthermore, the industry was explicitly assumed to be competitive at site I, the low-cost production site and the base for the pricing schedule used by the firm at site II. However, when last seen, the firm at II was charging nearly all his customers prices in excess of marginal cost.

In the present section I will argue that it will sometimes be possible to maintain a basing point price schedule even though entry at site II is unbarred. In order for the pricing schedule to survive when entry is _possible_, it must be the view of potential entrants that entry is _undesirable_; the economic profits of the firm at II must be no more than zero even though the firm is using a basing point price schedule that leaves most delivered prices above marginal cost. In particular, the _average_ price f.o.b. site of production is above marginal cost, or

$$ar = \bar{p} > mc \tag{4}$$

where ar is average revenue,

$\bar{p}$ is the mean price f.o.b. site of production,

and mc is marginal cost of the undelivered commodity.

If economic profits are zero, average revenue must equal average cost (ac).

$$ac = ar \tag{5}$$

But combining (4) and (5) yields

$$ac = ar = \bar{p} > mc, \text{ or simply } ac > mc.$$

The firm at II must be operating in a region of increasing returns to the scale of producing the physical commodity.

Figure 5 shows the aggregate demand curve which would face the firm located at II if he charged a uniform price f.o.b. site of production. Such a demand curve has a horizontal segment at $p_1 + t_1(II)$, which is the delivered price to site II of commodities produced at site I.*

* The uniform price demand curve has the same general shape as the demand curve which faces the site II firm at each point in the market (figures 3c and 4b above). However, the curve in figure 5 is an aggregate demand curve, horizontally summing the purchases at all points, i.e., horizontally summing all the curves of which the examples in 3c and 4b are representative. The curves shown in 3c and 4b are independent of prices charged consumers at any other point, but the curve shown in figure 5 will prevail only if all consumers are charged a uniform price f.o.b. site II.

For any price $p_2 > p_1 + t_1(II)$, all consumers everywhere purchase from site I. At a price of $p_2 = p_1 + t_1(II)$, the producer at site II can capture all local sales, while at lower prices he simultaneously increases local sales (moving down the local consumers' demand curves as he reduces price) and increases his market area, displacing site I producers in localities other than site II.

By assumption, site I has natural advantages in producing the physical commodity, making minimum average cost at I less than minimum average cost at II. Since, again by assumption, the industry at I is competitive, the price charged at I, p_1, is the minimum average cost of the firms at I.

Suppose the average cost curve facing the firm at II is as shown by ac_2 in figure 5. Then there exists no uniform price f.o.b. site II which will enable the firm at II to survive. However, by price discriminating, the firm is able to obtain average revenues in excess of

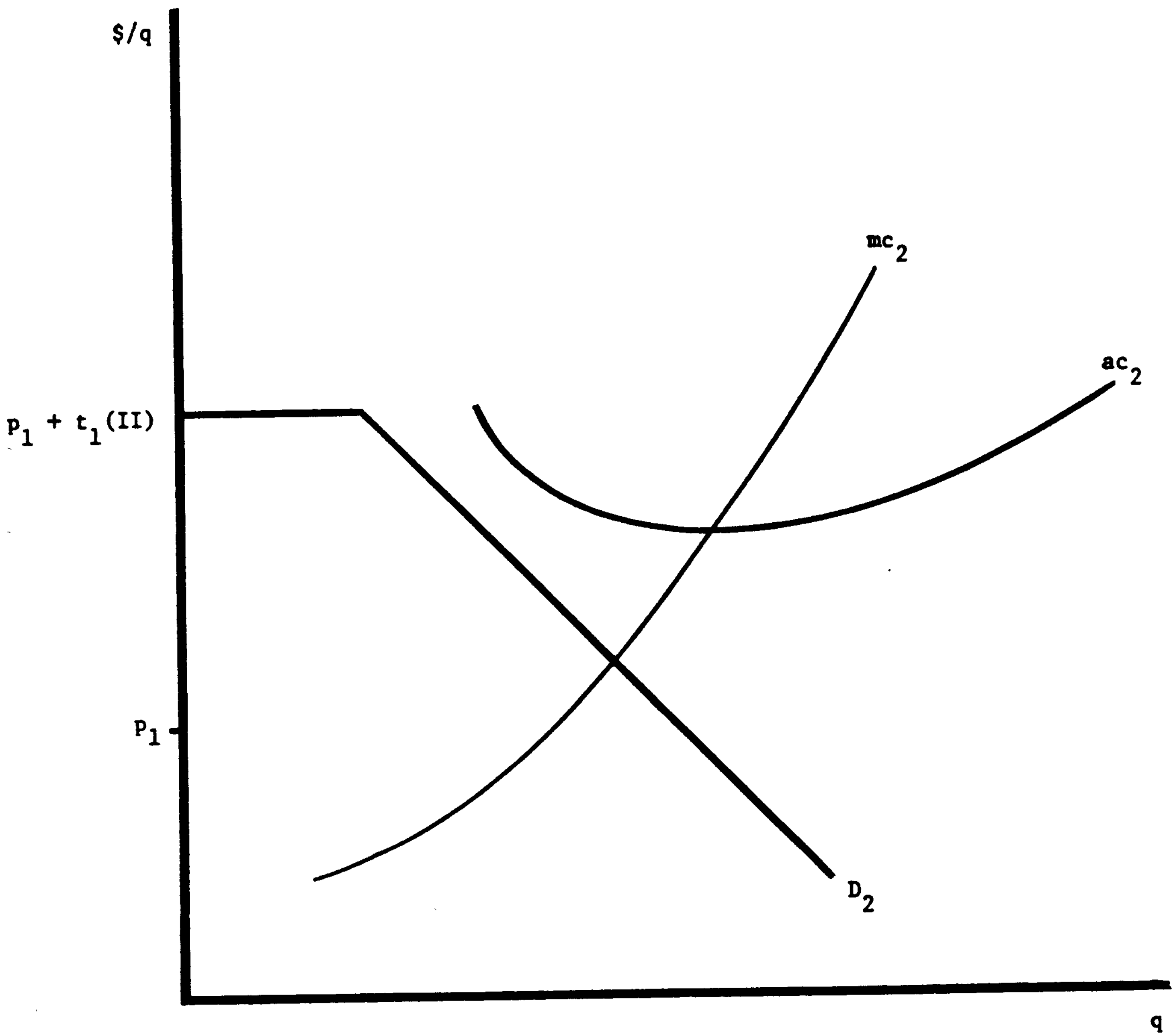

FIGURE 5

those shown by the uniform price demand curve. As shown above, given the competitors at site I, basing point price schedules may produce profit maximizing price discrimination and may enable the firm at II to bring its economic profits up to zero from below. As long as the profits are not positive, competing entrants are not attracted into production at site II.

V. THE EMPIRICAL IMPLICATIONS

If the preceeding explanation of basing point pricing schedules is accurate, certain attributes should be true of the cross-hauling which is undertaken by the industry. The shipments from the high-cost site toward the low-cost site should be destined for points less than one-half the distance to the low-cost site. The passing shipments from the low-cost site should be destined for points beyond the high-cost site, and no shipments from the high-cost site should be traveling to such distant points in that direction. In brief, there should be no intermingling of customers of site I producers with customers of the site II producer (except along market boundaries) at a point in time, although market boundaries may fluctuate over time as production costs or transport rate schedules change.

A second implication of the analysis is that when the aggregate demand seen at site II grows sufficiently to permit additional firms to produce at site II, the industry's price schedule should become a multi-based schedule with sites I and II as bases. If several existing firms at site II are quoting a discriminatory price schedule, each firm has an incentive to sell to consumers paying high prices (relative to marginal cost) and leave the low-priced consumers to the firm's competitors. Such behavior will destroy the original price schedule unless the firms at site II collude, collusions are apt to be short-lived in an industry without artificial entry barriers. It is known that the steel industry (as an example) moved from a Pittsburgh plus transport price schedule to a schedule using the nearest of Pittsburgh, Chicago, or Birmingham as base. If the shift did not occur in response to cost changes in Pittsburgh as Pennsylvania ore and coal seams were exhausted, the argument above implies that the change should have followed the opening of additional plants in Chicago and Birmingham.

One prominent attribute of basing point price systems is the tendency of producers to allow fluctuations in market boundaries to totally absorb short-run shocks to demand. Several economists have been interested in the infrequency of price changes as a tool for smoothing such shocks.*

* See Smithies, for example. Stigler made the explanation of this attribute the central concern of his paper on delivered price systems.

Several comments on such behavior suggest themselves in the context of the present argument.

At every point in the market, there exists a gap in the marginal revenue function facing the producer at II, and, for basing point prices to be profit maximizing for that firm, the marginal cost curve for delivered output for every point at which the firm sells positive quantities must cut the gap in marginal revenue. It is possible for demand to fluctuate, within bounds, while the marginal cost curve remains in the (shifting) gap. If total sales in the original market area fall, marginal costs f.o.b. production site will usually fall, and the marginal cost curve for output delivered to near-boundary locations outside the original market area drops below the horizontal segment of the demand curve, into the gap in marginal revenue. A basing point price schedule may remain the profit maximizing price schedule for the producer at II, given the competitors at I, but he will invade border areas of his rivals' market.

Since the industry is assumed to be occupied by numerous non-collusive firms at I, those firms perceive no kinks in their demand curves, which are horizontal in the neighborhood of minimum average cost. When demand there fluctuates, the firms will change prices. The site I firms are the industry's price leaders. However, the producers at I (being low-cost producers) serve a larger market than the firm at II. If regional demand fluctuations are not strongly and positively correlated, the demand as seen at I will fluctuate less violently (as a proportion of sales) than the demand as seen at II. Consequently, it should be observed that fluctuations in market boundary around II (measured in some sensible, but as yet undetermined, way) are more frequent and of greater relative strength than fluctuations in price at I.

It should be possible to identify previously unrecognized situations in which cross-hauling with basing point price schedules are likely. Such situations might be found in other industries, during other time periods, or in other economies. Likely situations are those in which the optimal scale of a plant is large relative to local demand, some sites have natural advantages in production relative to other producing sites, and transport is a significant cost to the industry and reflects economies of long-haul. Such conditions have likely been met in many industries during some early stage of their evolution. The necessary conditions are probably met today in many industries in small economies with substantial tariff barriers.

The apparent range of relevant empirical studies does not seem to be seriously confining.

VI. CONCLUDING REMARKS

Basing point price schedules and cross-hauling of freight are related in economic literature. In the present paper, I have argued that the relationship is not accidental; in both cases the phenomena arise from economies of long-haul in transport. Furthermore, neither basing point prices nor cross-hauling are inconsistent with a situation in which artificial entry barriers are absent. Such phenomena should be found only in industries for which transport costs are significant, for which cost-minimizing scale of producing (but not necessarily delivering) the commodity is large relative to local consumption, and for which some sites have natural advantages in production.

The range of potentially relevant empirical work is vast, but momentarily unexplored. Such a situation is common enough in economics; apparently the optimal time for (almost) all empirical work is the (near) future. I remain optimistic about my chances for soon replacing this conclusion with one somewhat more appealing.

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