

Basing Point Pricing and Regional Development. By George W. Stocking. Chapel Hill: University of North Carolina Press, 1954. Pp. 274. \$6.50.

In a study undertaken to assess the effect of basing-point pricing on the economic growth of the South, Professor Stocking has limited himself to a single industry—steel—in which basing-point pricing practice is analyzed as a part of the structure and ownership pattern in that industry. Professor Stocking concludes that both the ownership pattern and the basing-point pricing system have retarded the expansion of steel production in the South.

The fundamental characteristics of the steel industry—large units, concentration of production, few sellers, high fixed costs, joint costs, and a relatively inelastic demand greatly affected by cyclical changes—provide great incentive for avoidance of price competition; and the basing-point system was devised as and continues to be a means for eliminating price competition. The system eliminates price competition irrespective of whether it arises from collusion or from leadership. Stocking's characterization of basing-point pricing in steel is "a pricing formula designed along with price leadership and uniform pricing of extras to prevent the forces of unrestrained competition from eroding the steel price structure, particularly in periods of slack demand."¹

Against this "essential background" Stocking tests the regional significance of basing-point pricing. Stocking finds that Pittsburgh plus (the single basing-point system with the base at Pittsburgh) retarded the expansion of steel plants located away from Pittsburgh by making it easy for Pittsburgh plants to invade outside markets. Stocking also finds that the system restricts the size of these markets. To reach such a conclusion he assumed² that plants away from Pittsburgh *with adequate markets* could produce steel as cheaply as Pittsburgh producers. Thus, by a restriction of non-Pittsburgh markets, non-Pittsburgh producers are prevented from reaching their full-scale economies. Pittsburgh plus, according to Stocking, restricted markets away from Pittsburgh in two ways—"(1) by encouraging plants which bought steel and converted it into durable consumers' goods to locate near the basing point; and (2) by increasing the cost of fabricated steel to the ultimate consumer."³

Not only does Stocking believe that basing-point pricing leads to mislocation of steel production and steel fabrication facilities, but he also feels that mislocation is aggravated when the production facilities in the non-base area are owned by a dominant firm in the base area. Thus, if the Tennessee Coal, Iron and Railroad Company, the major southern steel producer located in Birmingham, had not been owned by the U.S. Steel Corporation, the development of new facilities at Birmingham (and greater steel output there) would have taken place. There are two reasons for this conclusion: (1) the over-all interests of

¹ P. 60.

² P. 62, n. 3.

³ P. 62.

U.S. Steel required decisions which would (might?) have been different had the decision-maker not had to weigh adverse effects of new capacity in the light of available existing facilities (often not fully utilized) in older areas; and (2) the large and inefficient U.S. Steel Corporation⁴ made mistakes unfavorable to Birmingham's steel development.

I

Stocking says, "[t]he influence of basing point pricing in retarding steel-consuming industries in the South is clearly revealed during the period when Pittsburgh was the industry's sole basing point."⁵ He goes on to say—"Although Birmingham was a low cost producing area, under Pittsburgh Plus . . . southern consumers of steel, whether they bought it from Birmingham or Pittsburgh, initially paid the Pittsburgh price plus rail freight to the point of delivery."⁶ Thus, the "too high price" at Birmingham makes it possible to give examples⁷ showing that southern fabricators of steel⁸ would have been in a better position had the price of their steel been as low, for example, as if they had been located in Pittsburgh.

Elsewhere Birmingham's "natural market" is defined in terms which assume a pricing arrangement based on costs "as low as Pittsburgh" and proportionately low prices.⁹

What is not available, unfortunately, from Stocking's study is a basis for the conclusion that absent a basing-point system lower steel prices would have existed in the South. Also, what Stocking's producers do under a basing-point system and why they do it is most puzzling. He indicates, for example, that prices at Birmingham were substantially higher than competitive levels, and also that the cost-price spread was much wider for products made at Birmingham and sold in the South than for the same products made in the North (for example, in Pittsburgh) and sold in the South. If, under these circumstances, ownership of Birmingham facilities by the U.S. Steel Corporation prevented steel expansion in the South, U.S. Steel must have been shipping its own "coals" to its own "Newcastle."

Stocking's analysis does not provide a basis for evaluating the locational effects of a basing-point system with or without independent ownership except by introducing irrational pricing behavior.

In his theoretical note on the relationship between basing-point pricing and

⁴ Citing the Ford, Bacon, and Davis Report, an engineering study for United States Steel

⁵ P. 63.

⁶ *Ibid.*

⁷ Ch. 4.

⁸ Such as Vulcan Rivet Corporation, Harriman Manufacturing Company (plows), Steel Products Company (boilers), and also other specifically mentioned steel fabricators.

⁹ Detailed material in Appendix B. See, for example, the map on p. 88, and the corroboratory shipments data from TNEC, chapter 5.

the location of steel plants,¹⁰ Stocking criticizes the conclusion reached in a study by Isard and Capron,¹¹ that regardless of the pricing system used, producers will locate where costs, including delivery charges to the market, will be at a minimum. Thus, by implication, they deny, according to Stocking, that the pricing system may affect directly the distribution of demand and hence the distribution of capacity. A conclusion that pricing systems do not affect plant location is valid only for competition, in Stocking's view, and a basing-point system is inconsistent with competition.

Of course, any departure from competition will alter outputs; and insofar as monopoly power can be exercised, whether by use of a basing-point system or any alternative system, it is reasonable to expect that over-all market prices will be higher and production less. Stocking's conclusion, however, is not that production has been impeded in the South in the same way as it has been in other areas. Rather, he concludes that there is a positive mislocation of production to the disadvantage of the South because of the basing-point system. Stocking considers two cases: single base pricing and multiple base pricing, and concludes that southern development was retarded in each case.

Stocking does not establish a convincing case for the proposition that steel production has been retarded in the South by the use of either a single or a multiple basing-point system. His conclusion in this respect rests on uneasy assumptions, and his empirical data are consistent with other assumptions which are more compatible with accepted notions of profit-maximization. His examples indicate the nature of this difficulty.

II

Stocking sets up the following hypothetical situation: A non-base mill at A (with average cost at optimum output of \$50 per ton) located in a freightless (for mill A) consuming area which would take all this output at a price of \$60. This is the price set by the base price at B plus freight from B. The base mill at B has identical average costs at the same optimum production as has A. (Average cost \$50 per ton.) B also is located in a freightless (for mill B) consuming area which would take all of B's output at \$50 a ton, the base price at B.

Stocking now assumes an equal distribution of customers between mill A and mill B (in proportion to their optimum outputs). Each mill, however, sells half its production in the area of the other so that the combined mill net returns of both are far less than those which would have been received had each mill concentrated its sales in its own market.

If the mill at B owned the mill at A (as in the real example of Birmingham), the cross-hauling of products seems preposterous. The same difficulty is present if mill A and mill B are in a collusive arrangement: cross-hauling is costly to

¹⁰ P. 195, Appendix A.

¹¹ Isard and Capron, *The Future Locational Pattern of Iron and Steel Production in the United States*, 57 *Journal of Political Economy* 118-31 (1949).

the parties. If cross-haul characterizes a collusive system, other advantages must be such as to give a better net result than other available pricing alternatives. Mills A and B can do better in Stocking's hypothetical example than his solution indicates. A division of the market between mills A and B clearly is to be preferred to Stocking's assumed single basing-point price, since in such a case great advantage would accrue to A with no detriment to B. Stocking's solution can be improved upon even without collusion, however. Suppose mill A, as an alternative, were independently to set a price of \$59.00 at A. Under the conditions given, \$59.00 at A would be below B's marginal cost of reaching that market, so that mill A would minimize the risk of setting off a costly price war; and mill B would be no worse off than before. In addition, mill A increases its net revenue by \$9.00 a ton over the Stocking solution.

Now, if a third consuming point C is added, the situation is not changed. Mill A, with no disadvantage to itself, merely exercises its right to meet the equally low price (base price plus freight) quoted by B.

A single basing-point system, however, was long used in the steel industry. It has also been used in a number of other industries including cast iron soil pipe, maple flooring, Douglas fir plywood, and glucose. In each of these cases, as in the case of steel, the single basing point was located in the dominant producing region which produced much more of the product in relation to the demand of its immediate area than did any producer in a non-base region. A single basing-point system has been explained, as Stocking stresses, as an administrative device to avoid price competition. A single base price facilitates "leadership" so as to avoid misunderstandings about the "proper" price. "Errors" might arise if each plant in the major producing area set its own F.O.B. plant price. The system does not necessarily involve any unique effect on production in outlying (non-base) areas.

The locational effects under Stocking's analysis arise because the non-base producers do not establish prices at their plants which are lower than base prices plus freight from the base plants. He does not discuss the conditions which irrespective of the pricing system in force prevent lower prices in outlying areas. The very reasons he has given which make avoidance of competition in steel desirable may explain why prices in Birmingham have been substantially higher than prices at Pittsburgh, particularly in the early period when the single basing-point system was in force in the steel industry.

If a single producer, or one of a few producers, in an outlying area is faced with a going price yielding higher than competitive returns, a decision to cut this price will depend upon the nature of the demand and cost conditions faced by this outlying producer. Price-cutting is not a rational course of action if it is confidently expected that rivals can and will meet the cut in price so as to leave all producers with less revenue. This is a reasonable expectation in the steel industry, which is characterized by relatively inelastic demand and high overhead costs (with wide disparity between marginal cost and price for major pro-

ducers). If, in addition, outlying (non-base) producers are faced with the necessity of increasing sales greatly in a widely diversified market in order to equal the scale economies enjoyed by the producers in the major producing area, then, irrespective of low assembly costs, in order to make a low price policy attractive to the outlying producer, it must be assumed that the lower price will greatly expand sales. This, in turn, assumes either a high elasticity of demand or an ability to price so low as to exclude former rivals from the market and at the same time realize more revenue from these low-price sales (with less participation by rivals) than at the former higher price (with more participation by rivals).

Assumptions like those just described do lead to Stocking's conclusion that much is to be gained by the avoidance of price competition in the steel industry. A basing-point system, however, is only a method of attempting to stabilize prices, and it need involve no special advantage to particular areas. Stocking concludes that southern production was retarded, but he does not show how it would be different absent the system, nor does he provide the rationale for its retardation.

His empirical data are consistent with higher costs in Birmingham than those derived from costs of assembly. The shipment data presented indicate that much steel was shipped into Birmingham's "natural" market and little was shipped out. Had Stocking defined Birmingham's pig-iron market in the same way as he did the steel market, he would have found the opposite result—much shipped out and little or none shipped in. The simplest explanation of this phenomenon is that pig-iron costs are relatively low in Birmingham (economies of scale are less marked here than in steel), but that other cost factors (arising from a limited market restricting production below optimum scale on many products) increased costs for Birmingham steel production more than low assembly costs reduced them. Even if alternatives to a basing-point system could be shown to improve competition somewhat and, therefore, to lead to lower prices everywhere, it does not follow that production would therefore be *relatively* greater in the outlying areas.

III

The case of mislocation under a multiple basing-point system, according to Stocking, arises when low-cost primary mills forgo their cost advantage by accepting a base price designed to protect the interests of the high-cost mills, thus checking the expansion of fabrication in non-base areas with a consequent effect upon primary steel production. The assumption seems implausible. Why should a low cost producer submit? The advantage of a basing-point system (price stability) is not lost by setting the proper (maximizing) base prices. A basing-point system does not require that weaker producers force stronger producers into irrational pricing patterns under which the participants are in a worse position than before.

Any departure from competition is likely to retard expansion of production in the South and everywhere else. Basing-point systems have been used in industries (including steel) where competition departs widely from conditions of "purity." The elimination of basing-point pricing or any other formula scheme is consistent with legal prohibitions against price-fixing arrangements, as is the elimination of any number of alternative arrangements. Professor Stocking is convincing when he shows that the characteristics of the steel industry are such that the avoidance of price competition is especially desirable to steel producers and that the basing-point system has been a useful device for creating price stability. He does not recommend any specific alternative though he particularly points up dangers of compulsory F.O.B. pricing. The principal conclusion, however—that basing-point pricing has encouraged the utilization of steel-producing resources in the older producing regions at the expense of the newer regions—is not convincing in the terms he has chosen. The evidence presented is consistent with alternative conclusions. The relevant variables for an evaluation of plant location are numerous and complex. The empirical data on production in and shipments into the South are consistent with conditions explained without recourse to basing-point pricing. It is necessary, therefore, to depend heavily on Professor Stocking's hypothetical examples to evaluate his conclusion about the effect of basing-point practices on location. These examples do not provide an explanation of how a basing-point system is a rational device for maximizing returns, either by a single firm or by firms in collusion.

Professor Stocking has taken a very complex economic problem and attempted to treat it in such a manner that economists will not find it too elementary, and that laymen will not find it too obscure. The result is that the obscurity Stocking has attempted to spare the layman he has created for the economist.

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