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Chazeau & Kahn: Integration and Competition in the Petroleum Industry

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Mrs. Steiner has another suggestion which will stir the doves. She feels that in many respects the juvenile courts have outlived their day. Not that there are not good and useful courts and thoughtful, kind, and humane judges. But, too often, she feels the judges tend to hand down Olympian morality and impose punitive and, even, sadistic impulses upon the endless procession of adolescents who pass before them.

Whether her proposed remedy for this evil is indeed a remedy is another matter. But it might be worth trying. At least it could do little more damage than is being done already by the insensitive and dictatorial courts.

Her proposal is to make the judges in children's courts responsible to a jury, just as in adult courts. But she wishes the jury to be composed of parents who live in the same neighborhood as child who is being judged. She feels that such a jury would know neighborhood conditions, be able to assess causes and be watchful of probation cases.

"This jury should be given professional status in that their recommendations should be given sober consideration and investigation," she says. "This may lead into avenues which we do not wish to explore. If so, why pretend that we wish to do anything basic about delinquency?"⁴

The suggestion might be worth trying. It is not, however, without obvious drawbacks. The neighbors are not necessarily impartial, unbiased, and intelligent judges of the bad boy or girl on the block. Often, they are the most intolerant and vindictive. Too often they might well turn Johnny's day in court into a verbal lynching party. The tendency of adults to discharge their own guilt feelings through excessive punishment of the young is only too common.

Nevertheless, it is time, as Mrs. Steiner suggests, that we let a little fresh air into the delinquency discussion. The challenging thoughts which she presents are an excellent first step toward that end.

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INTEGRATION AND COMPETITION IN THE PETROLEUM INDUSTRY. By Melvin G. de Chazeau and Alfred E. Kahn. New Haven: Yale University Press, 1959. Pp. xviii, 598.

THIS book is volume three of the Petroleum Monograph Series of the Yale University Press. It contains, in four parts and almost six hundred pages, a well-documented and by no means narrow analysis of the United States petroleum industry. Part I is a review of the organization and historical development of the industry. Part II presents an analysis of the crude oil sector. Part III considers the performance and anticipated performance of the industry with regard to investment and innovation; and Part IV is con-

4. P. 193.

†Reporter, N. Y. Times.

cerned with the markets for wholesale and retail distribution of final petroleum products. In each instance an attempt is made to discuss the impact and implications of vertical integration on the part of the major refiners,¹ but de Chazeau and Kahn repeatedly find that it is state prorationing of domestic crude production combined with restriction of crude oil imports, and not vertical integration, that must bear the primary responsibility for any failure of this industry to serve satisfactorily the public interest. They argue further that with appropriate revision of governmental policies regulating production, the petroleum industry, vertically integrated "majors" and all, could be regarded as being workably competitive.² Tendencies toward collusion or monopolistic behavior on the part of the "majors" are not ignored, but state prorationing is considered the *key* factor in the effectiveness of such behavior.

The crucial role of prorationing, and the monopolistic power which the state regulatory commission marshalls [sic] in its name to bolster and effectuate industry pricing policies, stands out stark in these episodes . . . [W]ithout its sympathetic exercise there would be little room for price leadership in the domestic petroleum market.³

Import restriction is viewed as the application of prorationing to foreign oil, a restriction necessary if the power to maintain prices is not to be broken by an inflow of crude oil produced abroad.

The remedy proposed is straightforward: relaxation of crude oil import restriction on the one hand, and unitization—compulsory independent operation of each oil pool as a unified production unit—on the other.⁴ In the author's terms, "Mandatory unitization, combined with a freer import policy . . . promises enough diversity of competitive interests . . . to restore a goodly element of competition to the monitoring of industry practices."⁵ The mechanics for applying this proposal are not developed in any great detail, although the authors do discuss the question of field independence under unitization. Their feeling is that the pressure of imports and the interests of small holders would

1. The top twenty companies in terms of 1955 domestic refinery throughput are here referred to as the "majors."

2. P. 567.

3. P. 559.

4. See ROSTOW, A NATIONAL POLICY FOR THE OIL INDUSTRY 45 (1948):

The compulsory operation of all fields as units of production could be accomplished by requiring the organization of companies or cooperatives in which all surface owners would share on an equitable basis, either in proportion to their surface ownership or to the richness of underlying deposits. Oil production under such units could altogether eliminate the possible wastes associated with offset drilling and the other consequences of the rule of capture, as well as the many geologists' criticisms of the administration of prorationing laws. It would for the first time permit the number of wells to be kept to a minimum, and the flow from individual wells on the field to be determined by geological criteria rather than the accidental pattern of ownership of the land over the oil.

5. P. 567.

probably be sufficient to guarantee an acceptable degree of independent action. Antitrust is regarded as the appropriate ultimate safeguard against collusive action.⁶

De Chazeau and Kahn tie closely together their recommendations for abandonment of prorationing and abolishment of import control. It may be useful to consider for a moment these two elements separately. The geographic isolation of the United States has meant that as a general rule the competition of international trade does not provide satisfactory insurance against the impact of concentration in domestic industry. In the case of United States petroleum, however, foreign competition could become sufficiently significant so that a relaxation of import controls might well stimulate competition, and hence break the upward impact of prorationing on crude prices, even if the current domestic program of crude production control were not abolished. Unitization would be a desirable addition to a policy of freer foreign trade. But in any case, with the removal of trade barriers, given adequate supply capacity in the hands of international firms not interested in voluntary or policy restrictions on sales to the United States, the demand curve facing American producers would become elastic, the advantage of prorationing as a device for raising crude oil prices would be reduced, industry pressure on state regulating commissions for cutbacks would diminish, and, curiously enough, the incentives for voluntary unitization might be increased. Apart from the issue of political feasibility, there is ample evidence to justify both a program of mandatory unitization and a freer policy with regard to oil imports. The major effort required is, of course, the conversion of these concepts into concrete policy proposals with some reasonable prospect for adoption. The more

6. P. 244.

An interesting bit of empirical evidence relevant to unitization appears in a footnote. P. 210. Fields in the Middle East are unitized. Average production per well in 1955 in the Middle East is reported at 5090 barrels per day. The corresponding figure for the United States is shown as 13 barrels per day. Although the full meaning of these data is far from obvious, they are sufficiently striking to suggest that recent experience with unitized field operations would prove a rather interesting area for further analysis.

The impact of unitization on the expected rate of exploitation of petroleum reserves also deserves further attention. While the most compelling argument for unitization is based on the rather obvious need to circumvent the rule of capture in the exploitation of both crude petroleum and natural gas, there has perhaps been too much ready acceptance of the notion that unitization would also reconcile the public and private interests with regard to the rate of exploitation of petroleum reserves—that with unitized operation the underground storage of petroleum reserves would be feasible and indeed would represent to private owners a profitable endeavor when such behavior is also socially desirable. Such identity between the public and the private interest presupposes, among other things, equality between the rate of interest which motivates the private sector (in this case the owners of petroleum reserves) and the rate of interest which is the socially appropriate basis for these decisions. That the private rate of interest is, in this case, the appropriate rate of interest is by no means obvious, and hence it is by no means obvious on this count, though it may be argued on others, that the current rate of exploitation of petroleum reserves is too slow.

immediately promising of the two would seem to be free and nondiscriminating foreign trade.

The second major conclusion of de Chazeau and Kahn—that “the structure and practices of the petroleum industry beyond the production level are . . . workably competitive”⁷—is a little more difficult to accept, at least initially. The crucial issue in this regard is pipelines. It is not clear that the ownership of trunk pipelines by vertically integrated “majors” still does not provide a degree of monopoly power—monopoly power which is only inadequately controlled by horizontal competition among the “majors” and by public regulation of the pipelines by the Interstate Commerce Commission. Indeed, it is probably true that vertical integration has permitted the “majors” to avoid public control of pipeline earnings, *i.e.*, to use their own pipelines to ship primarily their own crude while charging themselves rates which do not result in excessive paper earnings on pipeline investment, and ultimately to realize the monopoly rent which the ownership of the pipelines provides at some other level of the vertical corporate chain.⁸ Such an arrangement requires at least the partial absence of price competition among the integrated companies. Otherwise the potential monopoly rent of pipeline facilities will disappear, as de Chazeau and Kahn do indeed argue:

The advantages conferred on the integrated refiner by construction of a pipeline in turn forces [*sic*] other refiner-marketers, who have the strongest of all possible incentives, to emulate. The process of competitive emulation itself provides an important guarantee that in time the benefits of lowest-cost transportation will be extended to the ultimate consumer.⁹

The difficulty with this conclusion is that it relies upon the “majors,” and only the “majors,” for this competitive emulation.¹⁰ These are the same “majors” which are earlier shown to have vigorously supported and lobbied for cutbacks in allowable production, and even, according to the authors, to have successfully initiated reductions in refinery runs to support the contention that such cutbacks are in order.¹¹ These are the same “majors” which later in this book are subjected to scrutiny as a consequence of the *nonprice* nature of much competition in the marketing of their refined products. While there is little doubt that there will be competitive emulation among the majors, the more

7. P. 563.

8. With the depletion allowance, this rent is most advantageously taken at the production level. This is in turn consistent with the tendency for crude prices posted by the majors to exceed the actual prices at which crude changes hands.

9. P. 344.

10. P. 333:

In pipeline transport, however, practically no one from outside the industry functions, and there are few independents except some remnants of the dismembered Standard Oil Trust The domestic oil trunk pipeline is practically the exclusive preserve of the integrated firm . . . built, owned, and operated by a refiner or group of refiners as a plant facility. . . .

11. P. 444.

pressing question is whether this emulation can be expected to extend to include active competition with respect to price among these firms—firms which can and do assert their collective interests before state conservation authorities, and which can at least be suspected of some degree of conscious parallel action with regard to refinery runs during “surplus” periods. In addition if the independents do not have significant access to pipelines, and if pipelines are, as indicated,¹² roughly one fourth as costly as rail transport, there would seem to be little basis for expecting the independent, the traditional “price cutter,” to successfully press the majors to a degree of price competition sufficient to distribute the savings of pipeline transport to ultimate users.

The authors by no means skirt this issue; on the contrary, they document it.¹³ But their position is that here too the basic control stems from the administrative regulation of crude production. It must be recognized, of course, that a relaxation of import controls would improve the position of independent marketers and refiners with regard to access to supplies. More important, such a change would also increase the incentive for the “majors” to move toward the more active price competition necessary to eliminate such monopolistic aspects of trunk pipeline transportation as may exist at present. In sum, it is not difficult to accept the case for freer foreign trade. But pending the achievement of a free import policy, or an improved domestic production program, it is wise not to lose sight of fundamentally less adequate programs which nonetheless might have merit in the interim. Improved public control of trunk pipeline facilities may fall into this category.

Turning finally to the authors’ analysis of vertical integration, those persons whom de Chazeau and Kahn typify by the term “economic purist”¹⁴ will be worried by at least two phases of this work. The first is frequently found in one form or another throughout the book.¹⁵

The outstanding economic characteristic of petroleum production, transportation, and processing is low variable and high fixed costs at each stage of operation. But as oil passes through each of its stages of processing, these costs are transmuted into a price, and therefore into a *variable* cost from the standpoint of the operator at the succeeding stage. For the vertically integrated firm *no such transmutation occurs*, except as a fiction of interdepartmental bookkeeping. But costs for the nonintegrated operator beyond the crude production stage will be weighted heavily with the variable cost of the oil or the oil product itself, a very high proportion of total costs at each individual stage of the industry. Apart from any consideration of size or financial strength, *this fact alone* (the comparative weight of out-of-pocket expense versus invested cost) limits the range of the potential price competition of the nonintegrated firm compared with its integrated rival.¹⁶

12. P. 335 n.25.

13. P. 340.

14. P. 232.

15. *E.g.*, pp. 378, 381, 412, 428, 445, 450.

16. Pp. 375-76. (Emphasis added.)

This argument, not an uncommon one, presupposes a basic irrationality on the part of the integrated firm.¹⁷ The characterization of the nonintegrated firm is correct—oil which is purchased is a part of variable costs. But even for the vertically integrated firm which produces its own crude, the value of this crude is a component of variable, not fixed, costs *as long as the vertically integrated firm has the alternative of selling*, rather than processing, this oil. If markets were perfect, so that the price at which the integrated firm at any given stage were to purchase its supplies were also the price at which that firm could sell such supplies produced by itself, there would be no difference whatever on this count between the cost structures of the two types of firms.¹⁸

To argue, then, that out-of-pocket expense limits the price reductions that a nonintegrated firm can make, but that a vertically integrated firm is not so limited because crude is acquired by production rather than purchase (again assuming equivalence between buying and selling prices), is to conclude that it is worse from a profit standpoint to operate at a net loss of a given amount than to deliberately avoid earning an attainable net income of the same amount. If there is a difference in the positions of the two types of enterprises in this regard it is perhaps a consequence of a difference in financial reserves, but not a consequence of the extent of vertical integration. The prices employed in interdepartmental bookkeeping are fictional in the sense that, as long as the vertically integrated chain is kept intact, the overall net income position of the firm is unaffected by their change, a gain at one level being offset by a loss at another. But the reason that these shadow prices are kept, the reason that firms attempt to relate them accurately (at least for planning purposes) to actual prices, is to permit the check necessary to detect the sort of irrationality which these authors suggest their "fictionality" permits.

Similarly, the following argument may be misleading:

[T]he integrated firm in fact transfers its products from stage to stage without interstage profit surcharges characteristic of the market. Wherever the nonintegrated firm must pay prices that include a monopolistic profit, the integrated one may obtain a comparative advantage. If the added cost of providing coordination and planning of material flow does not absorb this difference and if the firm operates with reasonable efficiency and volume at each level of production, it might expect to make a higher profit on investment than would its nonintegrated competitors.¹⁹

A number of issues are raised by this argument, and similar statements have been analyzed in detail elsewhere.²⁰ At this point, however, it should be noted

17. Firms, of course, need not actually be rational, but where irrationality occurs, it deserves attention.

18. In so far as selling prices do not equal buying prices, there is, of course, a difference. Buying and selling prices may not be equal in the case of petroleum, but if so, the difference between the two classes of firms is a consequence of that inequality and not the degree of vertical integration.

19. P. 265.

20. See Bork, *Vertical Integration and the Sherman Act: THE LEGAL HISTORY OF AN ECONOMIC MISCONCEPTION* 22 U. CHI. L. REV. 199-200 (1954).

that the vertically integrated firm in this example obtains its "comparative advantage" by operating at a monopolistic level of the vertical chain. If earnings (the profit rate) are abnormally high at that level, the integrated firm will, of course, share in those earnings. These earnings will, in turn, exceed those of firms operating only at more competitive levels. But this advantage stems from horizontal market power (monopoly), not, as the authors imply, from vertical integration. A nonintegrated firm operating at the monopolistic level would have the same "advantage." There is no reason to expect the profit rate of a nonintegrated firm operating at the monopolistic level to be less than the profit rate at that level of an integrated firm. Similarly there is no reason to expect a higher profit rate over all for the integrated firm if the comparison includes profit rates for nonintegrated firms at both the monopolistic and competitive levels. There is to be sure an incentive for the nonintegrated firm to integrate when confronted with a seller (or buyer) having monopolistic (or monopsonistic) power. But although the earnings of independents at the various levels of production, refining, and distribution may vary with the degree of market power found, the earnings of the vertically integrated firm will exceed the *appropriately* defined average only if there are real economies of *integration*.

These are, however, some of the frills, rather than the core, of this analysis of the petroleum industry. In general, the analysis of vertical integration is well done. Furthermore, revision along the lines indicated above would tend to support, rather than to deny, the de Chazeau-Kahn position that in petroleum as elsewhere it is not vertical integration, but rather some more basic power, which results in socially undesirable economic behavior. Vertical integration may support this power, may manipulate it, but without such power, whether it originates in simple horizontal monopoly on the one hand, or in some ill-conceived public policy on the other, vertical integration itself should cause no problem.

All in all, this will be a very useful book. That the argument is not entirely convincing in some details, and is perhaps inadequately developed in others, is largely a consequence of the sheer size of the task these authors assumed, and of the confines of a single volume. Few aspects of the petroleum industry are ignored. Treatment of the institutional setting of the industry is excellent. Coverage of secondary source material is almost encyclopaedic. De Chazeau and Kahn show care in dealing with data which can be both misleading and confusing, and indeed make a significant contribution simply in indicating where further work, both in the collection and analysis of better data, would be useful.

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