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Are Mergers a Fitting Response?**

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Economic Efficiency and Concentration: Are Mergers a Fitting Response?

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Abstract: Public policy toward mergers and joint ventures is increasingly based on the belief that the consequences of such activities for market performance are largely positive. A review of the theoretical and empirical literature on mergers shows that there is little supporting evidence for this belief.

I. Introduction

Public policy in most developed economies maintains the position that market structure matters for market performance and that it is in the public interest to prevent mergers that worsen market performance. This is true of the United States, which has the world's most active antitrust tradition.¹ It is true of Japan, which inherited an antimonopoly law as part of the legacy of post-World War II occupation. It is true of the European Community, which has recently enhanced the merger control powers of the European Commission.

But enforcement of these policies falls short of the underlying principles. This has always been the case for Japan, where the importance of consensus and coordinated development of market structure have been honoured much more than the desirability of maintaining competitive market structure. It is true of the United States, where the Reagan Administration essentially withdrew the Government from the business of enforcing merger control legislation. And the thresholds for application of the new EC merger law are set at a comfortably high level.²

Increasingly, the enforcement of public policy toward mergers is guided by a belief in the importance of economies of large scale, which can be realized through mergers, and in the desirability of creating or reinforcing national champions to maintain a presence in an imperfectly competitive world markets. Despite the formal framework of competition policy, policymakers in practice seem to distrust the market as a resource allocation mechanism.

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1. Although not the oldest; that distinction belongs to Canada.
 2. Thresholds are, however, expected to be reduced.

Policymakers' beliefs in the favourable effects of mergers on market performance are unsupported by economic theory, which suggests that endogenous mergers are likely to increase market power and leave consumers worse off. They are unsupported by empirical studies, which do not suggest the existence of widespread economies of scale or of efficiencies flowing from mergers. They have the logical implication that if merger policy is to be permissive, home markets should be open to foreign competition, to ensure that benefits flowing from post-merger efficiencies are, as much as possible, passed on to consumers.

II. Public Policy Toward Mergers

A. United States

Under U.S. antitrust law, mergers by dominant firms are subject to the Sherman Act Section 2 prohibition of monopolization.³ But the encompassing statement of U.S. policy toward mergers is Section 7 of the Clayton Act, as amended by the Celler-Kefauver Act of 1950. This legislation lays down a severe policy toward horizontal, vertical, and conglomerate mergers. It prohibits mergers which will probably lessen competition; no actual or certain lessening of competition is necessary to run afoul of the law's prohibitions.⁴

The U.S. Department of Justice periodically issues Merger Guidelines to inform the business community. The most recent such guidelines were issued in 1984, and contain statements of federal

3. See *Standard Oil Co. of New Jersey et al. v. U.S.* 221 U.S. 1 (1911), *U.S. v. American Tobacco Co.* 221 U.S. 106 (1911), *U.S. v. United States Steel Corp. et al.* 251 U.S. 417 (1920), and *U.S. v. Aluminum Company of America* 148 F.2d 416 (2d Cir. 1945).

4. Leading interpretations are *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294 (1962) and *U.S. v. Philadelphia National Bank* 374 U.S. 321 (1963).

authorities' policy toward horizontal, vertical, and conglomerate mergers.⁵

Horizontal Mergers

The 1984 Guidelines emphasize the efficiencies that are alleged to flow from mergers:⁶

The primary benefit of mergers to the economy is their efficiency-enhancing potential, which can increase the competitiveness of firms and result in lower prices to consumers. Because the antitrust laws, and thus the Guidelines, are designed to proscribe only mergers that present a significant danger to competition, they do not present an obstacle to most mergers. As a consequence, in the majority of cases, the Guidelines will allow firms to achieve available efficiencies through mergers without interference from the Department.

Some mergers that the Department might otherwise challenge may be reasonably necessary to achieve significant net efficiencies. If the parties to the merger establish by clear and convincing evidence that a merger will achieve such efficiencies, the Department will consider those efficiencies in deciding whether to challenge the merger.

Cognizable efficiencies include, but are not limited to, achieving economies of scale, better integration of production facilities, plant specialization, lower transportation costs, and similar efficiencies relating to specific manufacturing, servicing, or distribution operations of the merging firms....the Department will reject claims of efficiencies if equivalent or comparable savings can reasonably be achieved by the parties through other means.

Under these guidelines, the Justice Department will challenge only mergers that represent a "significant" danger to competition. It is difficult to reconcile this with the Supreme Court's statement that

5. For a comparison with the 1968 and 1982 Guidelines, see Martin [1988].

6. Department of Justice, 1984 Guidelines, pp. 35-36. A quite different policy position is presented in the 1987 Horizontal Merger Guidelines of the National Association of Attorneys General. National Association of Attorneys General, Horizontal Merger Guidelines of the National Association of Attorneys General, Washington, D.C., March 10, 1987.

Congress intended the Clayton Act to be applied to probable incipient lessening of competition.⁷

In numerous decisions, the Supreme Court has indicated that efficiencies will not save an otherwise illegal merger. The 1984 Guidelines indicate that the Justice Department will consider efficiencies when it decides whether or not to challenge a merger. Once again, it is difficult to reconcile the Guidelines with interpretations of the law that have never been overruled.

Nonhorizontal Mergers

The 1982 and 1984 Guidelines combine vertical and conglomerate mergers under the general heading of "nonhorizontal" mergers.⁸

By definition, non-horizontal mergers involve firms that do not operate in the same market. It necessarily follows that such mergers produce no immediate change in the level of concentration in any relevant market.... Although non-horizontal mergers are less likely than horizontal mergers to create competitive problems, they are not invariably innocuous.

The Guidelines indicate a willingness to challenge non-horizontal mergers that eliminate potential competitors, vertical mergers that create barriers to entry (if one of the markets is highly concentrated), and vertical mergers that aid collusion.

7. *Brown Shoe Co., Inc. v. United States*, 370 U.S. 294 (1962)

8. Department of Justice, 1982 Guidelines, p. 29; 1984 Guidelines, pp. 36-37.

B. European Community

An economist could hardly wish for a more articulate statement of the merits of competition and the need for competition policy than that contained in the European Commission's First Report on Competition Policy [1972, p. 11].⁹

Competition is the best stimulant of economic activity since it guarantees the widest possible freedom of action to all. An active competition policy ... makes it easier for the supply and demand structures continually to adjust to technological development. ...Through the interplay of decentralized decision-making machinery, competition enables enterprises continuously to improve their efficiency... competition policy is an essential means for satisfying ...the individual and collective needs of our society.

The explicit reference to decentralized decision making implies a certain public interest in the nature of market concentration. But the cornerstones of Community competition policy, Articles 85 and 86 of the EC Treaty, are at best imperfect tools for merger control.¹⁰ These provisions, which prohibit restrictive agreements and concerted practices (Article 85) and abuse of a dominant position (Article 86) are designed to regulate conduct rather than structure. This has not prevented applications to merger,¹¹ but from the point of view of competition policy the results were far from first-best.

9. See also the Fourteenth Report on Competition Policy, p. 11 and the Fifteenth Report on Competition Policy, p. 15.

10. This contrasts with Article 66 of the ECSC Treaty.

11. The leading application of Article 86 to mergers is the Continental Can case (Commission Decision 72/21/EEC of 9 December 1971 Re Continental Can Company Incorporated JO L L7/25 8 January 1972 [1972] CMLR D11; Europemballage & Continental Can Co v. EC Commission, Case 6/72, Judgment of 21 February 1973; (1973) ECR 215; (1973) CMLR 219. As regards Article 85, see Philip Morris (British American Tobacco Company Limited and R.J. Reynolds Industries Inc. v. E.C. Commission (Philip Morris Inc. and Rembrandt Group Limited intervening) Cases 142 and 156/84 [1988] 4 CMLR 24.

The failure to include a specific merger control measure in the E.C. Treaty was deliberate (Banks [1988, p. 375]):

...omission of a merger control provision from the Treaty is not surprising, given European economic thinking at that time. One of the main objectives of the EEC was to bring about the economies of scale made possible by an enlarged European market. Mergers--and especially mergers across national boundaries--were seen as part of the process of European integration and as necessary in order to enable European industry to adapt to the new dimensions of the Common Market and to compete effectively against large foreign (notably American) enterprises. ...the Member States clearly did not wish to include in the Treaty any provision which might inhibit such developments.

Nonetheless, remarks on the desirability of "more systematic supervision arrangements for mergers reaching a certain scale" appear in the Second Report on Competition Policy (E.C. Commission [1973, pp. 27-28]), and regularly thereafter. It was not until 17 years later, in the Nineteenth Report on Competition Policy, that the Commission was able to describe the provisions of a Council Regulation for the control of mergers¹² The regulation makes a distinction between strictly national mergers and mergers that affect market structure at the Community level (E.C. Commission [1990b, pp. 11-12]):

The basic concept underlying the Regulation is to establish a clear distinction between mergers having a Community dimension, for which the Commission will be responsible and those whose main impact is at national level, which will come under the responsibility of the national authorities.

Its field of application is defined on the basis of quantitative criteria reflecting the overall economic and financial power of the undertakings concerned, their level of activity within the Community and the transnational nature of the operation. The current thresholds for intervention by the Commission have been set at a fairly high level...The Commission intends to propose that the thresholds be revised downwards.

12. Council Regulation (EEC) No 4064/89 OJ L 395/1 30.12.89; for a useful compendium, see E.C. Commission [1990a]. See also Overbury [1991].

For mergers that are subject to Community control, the critical issue is the impact of the merger on effective competition (E.C.

Commission [1990b, p. 35]):¹³

All mergers falling within the scope of the Regulation will be assessed on the basis of clearly defined criteria. The basic concept is that of 'dominant position'. The creation or strengthening of a dominant position will be declared incompatible with the common market if effective competition is impeded to a significant extent, whether within the common market as a whole, or in a substantial part thereof; conversely, a merger which does not impede effective competition will be declared compatible with the common market. The assessment process will take various aspects of competition into account. These will include the structure of markets concerned, actual and potential competition (from inside and outside the Community), the market position of the undertakings concerned, the scope for choice on the part of third parties, barriers to entry, the interests of consumers, and technical and economic progress. ...

The ambivalent attitude toward control of market structures remains, however. On the one hand, the Commission asserts the need for such measures (E.C. Commission [1990b, pp. 33-34]):

Merger control is necessary for both economic and political reasons. The process of restructuring European industry has given rise and will continue to give rise to a wave of mergers. Although many such mergers have not posed any problems from the competition point of view, it must be ensured that they do not in the long run jeopardize the competition process, which lies at the heart of the common market and is essential in securing all the benefits linked with the single market. In addition, it has become ever more clearly apparent that national rules are inadequate as a means of controlling Community-scale mergers, mainly because such rules are restricted to the respective territories of the Member States concerned.

But in other places, the Commission highlights the same perceived need to challenge extra-Community firms that affected the terms of the Treaty of Rome (E.C. Commission [1988, p.]):

13. Commission Decision 91/619/EEC of 2 October 1991 in Case No IV/M.053 - Aerospatiale-Alenia/de Havilland OJ L 334/42 5.12.91 found a concentration incompatible with the common market based on the high market shares, the elimination of an actual competitor, the increase in the product range, and on the broadening of the customer base that would have resulted from the merger.

The creation of an European industrial base means making available to industrial groups a type of transnational company, independent of national laws, which makes it possible to concentrate substantial assets and compete with American and Japanese business....

In addition, the Commission continues to emphasize the beneficial impact of mergers on the completion of the internal market (E. C. Commission [1991, pp. 14-15]):

...the Regulation is essential to prevent the strengthening or emergence of dominant positions as a defensive and negative reaction by companies to the opening up of the internal market. This may be particularly so where an already tight oligopoly is further narrowed by mergers between companies in the same geographic markets. On the other hand mergers can be an important way in which companies react positively to the internal market process. As long as dominant positions are not created or reinforced, mergers may serve to facilitate greater interpenetration of geographic markets that may not have previously been subject to the full effect of the competition from other Member States.

C. Japan

Japan's antimonopoly law provides, among other things, that (Iyori and Uesugi [1983, p. 85])

- (1) mergers must be notified to the Fair Trade Commission 30 days in advance; and
- (2) mergers are prohibited if "the effect of a merger may be to substantially restrain competition in any particular field of trade" or if "unfair business practices have been employed in the course of the merger"

The Fair Trade Commission's merger guidelines [1980] indicate the factors it will consider in evaluating mergers.¹⁴ As regards horizontal mergers, it is indexes of market power that are emphasized:

- (1) postmerger market share, postmerger rank in the industry; the difference between post-merger market share and the market shares of competitors;

14. The description which follows is based on the English translation of Iyori and Uesugi [1983, pp. 276-281].

(2) the state of competition in affected markets:

- (a) number of competitors, height of entry barriers;
- (b) existence of substitute goods and state of competition in the markets for such goods;
- (c) the overall business capability of the company after the merger;
- (d) prospects for market growth, current domestic business conditions and current business conditions in related overseas markets.

For vertical mergers, the guidelines indicate FTC concern with

- (1) the extent to which the merger results in foreclosure at either vertical level;
- (2) the effect of the merger on entry conditions, in particular on the amount of capital that must be invested to enter the industry.

For conglomerate mergers, the FTC looks at

- (1) potential competition between parties to the merger;
 - (a) for product extension mergers, substitutability between the products involved;
 - for geographic extension mergers,
 - (b) market positions of the firms involved;
 - (c) influence of each firm on the other;
 - (d) potential for either firm to enter markets supplied by the other;
- (2) the competitive advantage of the firm after the merger;
- (3) the effect of the merger on entry conditions, in particular on the amount of capital that must be invested to enter the industry.

One may argue that Japan's merger guidelines, at least as regards vertical and conglomerate mergers, more closely reflect economic theory than the U. S. Department of Justice Merger Guidelines.

Neither set of guidelines indicates concern with multimarket contact.¹⁵

In its implementation, Japanese competition policy is much less similar to that of the United States or the European Community than

15. This omission may be particularly important for Japan, given the importance of zaibatsu-centered industrial groups in Japan's industrial structure.

this description of its formal structure would imply. Modern Japanese business policy is the outcome of a complex interaction between the Fair Trade Commission, endowed with responsibility for enforcing antimonopoly legislation, and government ministries with responsibility for specific industries. Best known of these outside Japan is MITI, the Ministry of International Trade and Industry. As noted by Caves and Uekusa [1976, p. 149]:¹⁶

The goals of the Ministry of International Trade and Industry have varied over time in weight and composition, but some have recurred regularly since the ministry's founding in 1949. One has been to promote the movement of resources to certain favoured industries.... Another goal has been to promote larger operations in certain industries--larger plants because of an abiding faith in economies of scale, and larger firms in the belief that ...Japanese firms should be as large as their American competitors in order to compete with them effectively. This goal has led at times to a considerable enthusiasm for mergers and the restriction of new entry into industries of interest to MITI. ...

MITI has often failed to achieve its goals. The 1961 plan to consolidate the Japanese automobile industry around three firms, each specialized in a different segment of the market, is a notable example (Magaziner and Hout [1980, p. 63]; Iwasaki [1988, p. 504]). But it seems clear that the persuasive and consensus-building approach of government agencies is more characteristic of Japanese policy toward business than the regulatory and confrontational approach of U.S.

16. Regarding Japanese belief in economies of scale, see Hadley [1970, p. 109], Tsuruta [1988, p. 67, pp. 81-82], Yamawaki [1988, p. 300], Iwasaki [1988, p. 498-499].

antitrust.¹⁷ In any event, the merger-control provisions of the Japanese antimonopoly law have been little applied (Iyori and Uesugi [1983, pp 25-26]:

In the spring of 1968, the three largest paper manufacturing companies in Japan..., which together held 60% of the market in newsprint, made public their merger plan. Soon thereafter, the two largest Japanese steel makers..., which together held 35.6% of the market in crude steel production and which if merged would become the second largest steel company in the world, announced their merger plans. ...both merger plans were positively supported by MITI, high officials of other government agencies, and certain leading factions in business circles. However, about 90 economists, all of whom were professors at prominent universities, jointly made an announcement that they were opposed to the proposed mergers on the grounds that they would substantially restrain competition. At their request, the FTC began a preliminary investigation of the mergers. In September 1968, the paper companies voluntarily gave up their plan to merge due to the anticipated rejection of the merger by the FTC.

With respect to the two largest steel companies' merger plan, the FTC issued a complaint that charged them with a violation of Section 15 of the Antimonopoly Act. Four items in their product lines were alleged to have high market shares. ...After 13 public trial hearings, the respondents submitted a plan for certain self-imposed remedies to the FTC...The FTC then issued a consent decision approving the plan as an effective remedial measure. ...

17. Rationales for this policy are reminiscent of European Community justifications for sectoral and regional aid (Komiya and Yokobori [1991, pp. 57-58]):

Divergent views may exist on the exemption of joint actions (cartels) for scrapping facilities from the Antimonopoly Law. Without this exemption, the market mechanism might have caused automatic adjustment and left only the more efficient companies in the field and might also have accelerated the transfer of resources. Since the declining industries were often concentrated in specific regions, however, their sudden downturns in production could have resulted in regionally concentrated unemployment. Regionally concentrated industries also usually have strong political influence. Thus, the industrial policy for these declining industries could not be based only on short-term economic efficiency. Allowance of these cartels among depressed firms may be viewed as the necessary social cost for achieving smooth transfer of resources without resorting to protectionist border measures.

The steel industry merger is in fact the only merger that has been found to violate the Japanese antimonopoly law.¹⁸ But it may be that this masks the full effect of antitrust policy in Japan (Iyori and Uesugi [1983, p. 26]):

However, since this merger, there has been no merger plan of comparable size, and it can be said that this event was a clear sign that the period had ended when a large scale consolidation among Japanese firms would be attempted and promoted because of fear of foreign competition.

III. Mergers, Market Power, and Efficiency

A. Theory¹⁹

Horizontal Mergers

Recent theoretical work on horizontal mergers takes off from Salant, Switzer and Reynolds' [1983] demonstration that in a Cournot oligopoly model a horizontal merger will reduce the combined profit of the firms involved in the merger unless it includes nearly all firms in the industry.²⁰ The intuition behind this result is straightforward. A merger has the effect of internalizing marginal losses of revenue that an increment in a firm's output inflicts on its merger partners. The result is a post-merger restriction in output by firms involved in the merger. Firms outside the merger, moving along their reaction

18. At least, to 1982; Iyori and Uesugi [1983, p. 82].

19. See the March 1989 issue of the International Journal of Industrial Organization, the symposium on horizontal mergers and antitrust in the Fall 1987 issue of the Journal of Economic Perspectives, and McElroy [1991].

20. See Levin [1990] and Boyer [1991] for related models. Kwoka [1989] uses conjectural variations to relax the assumption of Cournot behavior.

curves, expand output. The net output change - reduction by firms that merge and expansion by firms outside the merger - can leave the post-merger firm with less profit than its components earned before the merger.

With linear demand, a homogeneous product, constant marginal cost and marginal cost identical across firms, all firms produce equal outputs in both pre- and post-merger equilibrium. A merger of m firms has the effect of eliminating $m-1$ firms from the market. The consequences for market performance are negative: equilibrium price rises and equilibrium output falls, the fewer the number of firms in Cournot oligopoly.

This result is unsatisfying, from more than one point of view. It is not robust to a change in the choice of strategic variable: Deneckere and Davidson [1985] show that mergers in price-setting oligopoly with product differentiation are profitable, in a model otherwise the same as that of Salant, Switzer and Reynolds [1983].

Further, one does not expect firms involved in a merger to restrict output to such an extent that it produces only as much as firms outside the merger. It is more realistic to expect that a combination of firms will produce more than firms outside the combination. Perry and Porter [1985] model this type of merger. In their model, a firm's cost function depends on the amount of capital it owns, and capital is in fixed supply to the industry. A merger combines the capital of the constituent firms in the survivor firm. In equilibrium, the survivor firm is larger than firms not involved in the merger.

Nor does one expect to observe firms voluntarily engaging in unprofitable behavior. Since mergers that involve only a few firms in

an industry are observed, it is reasonable to conclude that the firms involved expect them to be profitable. We may then investigate the sources of expected profitability.

A merger might be profitable because the survivor firm, without being more efficient than parent firms, has greater market power. In this case, a merger will reduce consumer welfare and social welfare. Or a merger might be profitable because the survivor firm is more efficient than parent firms. Even if such a merger increases market power, cost savings create the possibility that the overall effect of the merger on market performance will be positive.

Farrell and Shapiro [1990] show that mergers will harm consumers unless cost savings are very great.²¹ Write the profit of a single firm in a n -firm Cournot oligopoly as

$$(1) \quad \pi_i = p(q_i + Q_{-i})q_i - c_i(q_i)$$

(where Q_{-i} is output of all firms except firm i). Cost functions are allowed to differ across firms. The first-order condition for maximization of π_i is

$$(2) \quad p(Q) + q_i p'(Q) - c_i'(q_i) = 0,$$

where Q is total output and prime denotes a derivative.

Farrell and Shapiro show that under reasonable conditions if a single firm changes its output, and all other firms adjust output along their reaction curves, total output changes in the same direction as the output of the firm initiating the change. It follows that to analyze the impact of a merger on total output, and therefore

21. See Werden [1991] and Farrell and Shapiro [1991], as well as Gaudet and Salant [1989].

on price, it is necessary only to determine the impact of the merger on the output of the firms involved in the merger.

Now let the first m firms merge. Let premerger outputs be \bar{q}_i , $i = 1, \dots, n$, with \bar{Q} total premerger output and \bar{Q}_M premerger output of the firms that merge. At the premerger outputs, marginal revenue of the survivor firm is

$$(3) \quad MR_M(\bar{Q}_M) = p(\bar{Q}) + \bar{Q}_M p'(\bar{Q}) .$$

The firm formed by merger will reduce output if and only if its marginal cost exceeds its marginal revenue, or if and only if

$$(4) \quad c'_M(\bar{Q}_m) > p(\bar{Q}) + \bar{Q}_M p'(\bar{Q}) .$$

This is the same as

$$(5) \quad -\bar{Q}_M p'(\bar{Q}) > p(\bar{Q}) - c'_M(\bar{Q}_m) .$$

But the premerger first-order condition for firm i implies

$$(6) \quad p(\bar{Q}) - c'_i(\bar{q}_i) = -\bar{q}_i p'(\bar{Q}),$$

for $i = 1, 2, \dots, m$, which in turn gives

$$(7) \quad -\bar{Q}_M p'(\bar{Q}) = -\left(\sum_{i=1}^m \bar{q}_i\right) p'(\bar{Q}) = \sum_{i=1}^m [p(\bar{Q}) - c'_i(\bar{q}_i)] .$$

Substituting (7) in (5), the firm formed by merger will reduce output, implying a price increase and a reduction in consumer welfare, if and only if

$$(8) \quad \sum_{i=1}^m [p(\bar{Q}) - c'_i(\bar{q}_i)] > p(\bar{Q}) - c'_i(\bar{Q}_M) .$$

But the cost reductions that followed from a merger would have to be very large indeed for this condition to be violated. Consider a merger of two firms. Condition (8) implies that the post-merger price will fall, benefiting consumers, if and only if

$$(9) \quad p(\bar{Q}) - c'_M(\bar{Q}_M) \geq p(\bar{Q}) - c'_j(\bar{q}_j) + p(\bar{Q}) - c'_2(\bar{q}_j),$$

or if

$$(10) \quad c_j(\bar{q}_j) - c'_M(\bar{Q}_M) \geq p(\bar{Q}) - c'_2(\bar{q}_j).$$

Without loss of generality, let $c_j(\bar{q}_j) < c'_2(\bar{q}_j)$. (10) implies that for a merger to reduce price and benefit consumers, the marginal cost of the most efficient pre-merger firm would have to exceed the marginal cost of the post-merger firm by at least the profit margin of the least-efficient pre-merger firm, with costs and margins evaluated at pre-merger outputs.

This suggests that mergers will almost always harm consumers. The net welfare effect of a merger will usually, therefore, depend on a tradeoff between harm to consumers and increased economic profit accruing to the owners of firms involved in the merger.²² This leaves open the policy question whether or not income gains of firm owners will be given less weight than the income losses of consumers. Whether this should be the case or not, in the end, is not subject to economic analysis.²³

Dutz [1989] models the rationalization of production by firms in declining industries that merge and retire their least efficient

22. The seminal treatment of this sort of tradeoff is Williamson [1968].

23. Scholars working in the tradition of the Chicago school have argued that the purpose of U.S. antitrust law is to minimize deadweight welfare loss, implying equal weight for producers' gains and consumers' losses. See Bork [1978], and for a contrary view Lande [1982]. George and Jacquemin [1990] argue that for European Community competition policy "...the goal seems to be to maximise consumers' surplus rather than the sum of consumers and producers' surplus." See E.C. Commission [1986, p. 15] for an outline of the way competition policy benefits consumers.

capacity. Where pre- and post-merger markets are characterized by excess capacity, mergers are socially beneficial. Examples from the U.S. steel, railroad, brewing, and auto parts industries seem consistent with his analysis.

Vertical mergers

Market Foreclosure

Consider a merger between a manufacturer of shoes and a chain of stores that distributes shoes. Much public policy concern with such a merger has focused on the possibility that such a vertical merger would lock the manufacturer and distributor in a tight bilateral relationship, effectively withdrawing each from the horizontal market in which it had previously operated as an independent agent. In a postmerger market, the story goes, independent manufacturers could not expect to sell their shoes through the merged, foreclosed, retail chain. Nor could independent retailers reasonably expect to be able to sell the shoes of the merged, foreclosed manufacturer. On this analysis, one vice of a vertical mergers stems from its effect in foreclosing parts of two markets, thus reducing the pre-existing state of competition.²⁴

Salinger [1988] considers the case of a vertically integrated firm operating with Cournot conjectures in imperfectly competitive intermediate- and final-good markets.²⁵ He supposes that each unit of final good output requires one unit of the intermediate good as an input. This assumption is not restrictive.

24. Brown Shoe, *op. cit.*; Eighth Report on Competition Policy (E. C. Commission [1979, p. 104]; Fair Trade Commission [1980].

25. See also Ordovery, Saloner, and Salop [1990].

Cournot expectations imply that the vertically integrated firm expects final good output to increase by one unit if it sells an extra unit of the intermediate good (other intermediate good producers being expected to hold their outputs constant). Similarly, if a vertically integrated firm buys an extra unit of the intermediate good on the open market, it expects other final good producers to hold their output constant.

Assume it is profitable to sell the intermediate good and it is profitable for nonintegrated firms to sell the final good: $p_I > c_I$ and $p_F - p_I - c_F > 0$. The two inequalities together imply $p_F - c_F - c_I > p_I - c_I > 0$. But these relations together mean that a vertically integrated firm will neither buy nor sell the intermediate good on the open market. Since $p_I > c_I$, if a vertically integrated firm wishes to increase final good output, it is more profitable to do so by producing an extra unit of the intermediate good, with at a cost of c_I , than by buying a unit of the intermediate good on the open market at price p_I .

Now suppose a vertically integrated firm sells a certain amount of the intermediate good on the open market. It could pull this output off the intermediate good market and use it to produce more of the final product. Final good output and therefore final good price would be unchanged. But since $p_F - c_F - c_I > p_I - c_I$, the integrated firm would earn a greater profit per unit selling the output at the final good level than it would selling the inputs to the product at

the intermediate good level. Hence it is not profit maximizing for the integrated firm to sell the intermediate good on the open market.

In markets of this kind, therefore, one would expect vertically integrated firms to foreclose as an equilibrium strategy. To this extent, vertical integration reduces competition. On the other hand, the impact of vertical integration on price, and therefore on consumer welfare is ambiguous.²⁶ However, in Salinger's model, an increase in the number of vertically integrated firms raises the equilibrium profit of vertically integrated firms if and only if final good price goes up.

Other market power explanations of vertical integration

A vertically integrated firm that controls or influences the upstream price of a necessary input can place nonintegrated rivals in the downstream market at a competitive disadvantage by increasing the price of the intermediate good. Adams and Dirlam [1964] present a classic analysis of this type of price squeeze in the U. S. steel industry.

Somewhat more generally, Chandler [1977, p. 364] emphasizes the entry-barrier creating effect of vertical integration, particularly forward integration into distribution:²⁷

26. This is the general result; see Westfield [1981] for the case of a monopoly input supplier.

27. See also Adams [1974].

Except in the production of primary metals, a manufacturing enterprise rarely became and remained large until it had built its own extensive marketing organization. Its owners took this step when the maintenance of high-volume output required precise and detailed scheduling of the flows of finished products to mass markets or the maintenance of specialized distributing facilities and marketing services. The creation of distributing and marketing networks to provide such coordination, facilities, and services caused the mass producers to internalize several processes of production and distribution and the market transactions between them within a single enterprise. Such internalization permitted the visible hand of administrative coordination to make more intensive use of the resources invested in these processes of production and distribution than could the invisible hand of market coordination.

Such administrative coordination in turn created formidable barriers to entry. High-volume throughput and stock-turn reduced unit costs. Advertising and the provision of services maintained customer loyalty. Rival firms were rarely able to compete until they had built comparable marketing organizations of their own.

These analyses of vertical integration point to its strategic, market-power enhancing consequences.

Price discrimination

If a firm has market power, it is profitable to discriminate in price between classes of customers with different price elasticities of demand. A necessary condition for such price discrimination is that higher-elasticity consumers, who are offered a lower price, be unable to purchase for resale to lower-elasticity consumers. If an input-producing firm sells to firms with different elasticities, it can effectively price discriminate by integrating forward to high-elasticity segments of the final market and supplying low-elasticity segments at a profit-maximizing, higher, price. Such price discrimination is an exercise of market power. But it is not strategic: it is a response to demand conditions, not to actual or potential rivals.

Efficiency explanations of vertical integration

Distortions in input choice²⁸

If the technology for production of the final good permits substitution among inputs, then an intermediate good producer that raises price will induce substitution away from his own product. By integrating forward into final good production, such a producer can guarantee input choice based on relative marginal costs at the final good level, increasing efficiency and his own profit.

Information/Uncertainty

Arrow [1975] shows that if input supply is random and upstream producers have more information about realized supply, downstream producers will have an incentive to integrate backward to improve the quality of their information about the input market. Carlton [1979] presents a model in which it is final demand that is uncertain. Uncertain final demand translates into uncertain input demand. There is thus the possibility that aggregate input production and aggregate derived demand will be "out of synch": either too much of the input will be produced in which case it would have to be discarded or stored in inventory, or else not enough of the input would be produced, implying an input shortage and a constraint on production of the final product. This potential lack of synchronization between input supply and input demand creates an incentive for firms to integrate vertically.

28. See Vernon and Graham [1971], Schmalensee [1973].

Transaction costs²⁹

The transaction cost theory of the firm is among other things a theory of vertical integration. Two aspects of human nature - bounded rationality plus opportunism - and one of transactions - the extent to which it is necessary to invest in highly specific sunk assets - are highlighted as factors determining when it is economic to bring transactions within the firm.

Bounded rationality - a limited ability to anticipate unfolding reality - implies that it is impossible to write all-encompassing contracts to regulate transactions. Opportunism - "self-interest plus guile" (Williamson [1975, p. 26; 1981, p. 1545]) - implies that economic agents expect individuals or firms with whom they have negotiated a contract to break it if the expected benefit from breaking the contract, net of expected penalties, exceeds the expected benefit from adhering to the contract.

When repeated transactions involve the investment of sunk assets by the purchaser, what was initially the selection of one of many potential suppliers is transformed into a bilateral monopoly situation. Given the expectation of opportunistic behavior by the supplier, the purchaser should expect the supplier to seek to renegotiate the terms of the agreement, over time, to the benefit of the supplier. To avoid the potential loss of investment in sunk assets, there is an incentive to take the supplier into the firm.³⁰

29. See Williamson [1971, 1985, Chapters 4 and 5, 1986] and Casson [1984].

30. Bonanno and Vickers [1988] and Lin [1988] develop models in which it is profitable for manufacturers to sell through independent distributors.

Conglomerate Mergers

Scott [1989, p. 37] argues that conglomerate mergers can create or reinforce market power because they facilitate tacit collusion:³¹

Consider two markets, each with only two sellers. In the first and the second we find seller A. In the first, we find seller B competing with seller A. In the second, seller A competes with seller C. If sellers B and C merge, even though they are not competitors, the merger creates a situation in which ...tacit cooperation...is more easily attained. Since the same set of sellers meets in two markets, there are twice as many opportunities to come to understand one another. The process of reaching a consensus on price is facilitated because there is more contact.

Bernheim and Whinston [1990] present a game-theoretic model of the same phenomenon. They examine the effect of multimarket contact on the stability of noncooperative collusion. Beginning with a model of price-setting firms and homogeneous products, they show that multimarket contact has no impact on market performance if firms and markets are identical and if returns to scale are constant. When the number of firms varies from market to market, or there are cost differences across firms, or products are differentiated, multimarket contact can facilitate noncooperative collusion.

Teece [1980] applies the transaction cost theory of the firm to conglomerate diversification. He argues [1980, p. 224] that³²

diversification can represent a mechanism for capturing integration economies associated with the simultaneous supply of inputs common to a number of production processes geared to distinct final product firms.

In particular, Teece highlights common use of knowhow and specialized indivisible physical assets as favoring diversification.

31. See also Kantarelis and Veendorp [1988].

32. See also Teece [1982] and Levy and Haber [1986].

Knowhow is knowledge which involves learning-by-doing as an essential feature. Transactions that involve knowhow are therefore open to opportunistic exploitation, which encourages bringing them within the firm. As regards highly specialized physical assets, markets for their services are likely to be thin, precisely in proportion to the extent that they are specialized. To cope with the possibility of market failure, it is often cost effective for a firm to diversify across industries in which the asset can be utilized.³³

Table 1: MES Plant Size versus Market Concentration

Industry	MES/S	4 x MES/S	CR4
Beer Brewing	3.4 %	13.6 %	40 %
Cigarettes	6.6	26.4	81
Broad-Woven Cotton and Synthetic Fabrics	0.2	0.8	36
Paints, Varnishes, and Lacquers	1.4	5.6	22
Petroleum Refining	1.9	7.6	33
Shoes (other than rubber)	0.2	0.8	26
Glass Containers	1.5	6.0	60
Cement	1.7	6.8	29
Integrated Wide Strip Steel Works	2.6	10.4	48
Ball & Roller Bearings	1.4	5.6	54
Household Refrigerators and Freezers	14.1	56.4	73
Storage Batteries	1.9	7.6	61

Note: engineering estimates of minimum efficient scale; figures are for 1967, and assume markets are national.

Source: Scherer [1974].

33. See also Montgomery and Hariharan [1991].

B. Evidence

Economies of Scale

Economies of scale are notoriously difficult to estimate. Most studies, however, show that economies of scale run out at levels of market concentration much lower than those that are typical of industrialized economies. The results of Scherer [1974], reproduced in Table 1, are typical.³⁴ His own summary is [1974, pp. 51-52]:

Clearly, important scale economies exist. Equally clearly, they are exhausted at relatively modest concentration levels in many manufacturing industries of a nation as large as the United States.

Horizontal mergers

Baker and Bresnahan [1985] estimate demand curves for Anheuser-Busch, the leading U.S. beer brewer, and two smaller firms in the same industry, Pabst and Coors. Their results imply that a merger between either of the smaller firms and Anheuser-Busch would increase market power for Anheuser-Busch, without increasing market power for the other party to the merger. Similarly, a merger between the two smaller firms is not predicted to yield an increase in market power. These results suggest that competition from these smaller firms limits the ability of Anheuser-Busch to exercise market power.³⁵

34. See Pratten [1988] for a comprehensive survey.

35. Tremblay and Tremblay [1988] examine the determinants of mergers in the U.S. brewing industry, and conclude that the search for market power does not appear to be an important factor. However, they use the Herfindahl index to measure the market power motive, on the argument that "the market power motive for merger would be directly related to industry concentration since a horizontal merger can only increase market power when concentration is high." But this argument is correct only in the absence of product differentiation, a condition which manifestly is not met for the U.S. brewing industry. An added factor is that their measure of the Herfindahl index is calculated on a national basis, while a regional measure would be more appropriate.

Additional evidence that horizontal mergers can reinforce market power comes from Barton and Sherman [1984], who examine the effect of two successive mergers on the relative price of differentiated brands of microfilm. A 1976 merger increased the market share of the industry's dominant firm in the diazo microfilm market from 40 to 55 per cent, and the price diazo microfilm products rose nearly 10 per cent, relative to the price of vesicular microfilm products. In 1979, a second merger increased the dominant firm's share of the vesicular microfilm market from 67 to 93 per cent, and the price of vesicular microfilm products rose more than 1/3 relative to the price of diazo microfilm products.

Vertical Integration³⁶

Hennart [1988, pp. 282-283] uses transaction cost theory to compare the extent of upstream vertical integration in the aluminum and tin industries. Transaction cost theory predicts greater vertical integration the smaller the number of actual or potential trading partners, the greater the investment in sunk assets necessary to support a type of transaction, and the greater the uncertainty associated with the transaction. Vertical integration should be less, all else equal, the greater the differences between upstream and downstream markets and the greater the cost of monitoring employees within the firm.

The aluminum industry is virtually a paradigmatic example of the transaction cost theory of vertical integration. Operation of a minimum efficient scale bauxite mine requires a substantial and largely sunk investment. Because bauxite is bulky and costly to ship,

36. See also Anderson and Schmittlein [1984].

it is not economically feasible to ship bauxite to distant refineries.

At the same time, bauxite is a heterogeneous ore, and alumina refineries tend to be designed for a specific type of ore. A bauxite supplier and an independent alumina refiner would very quickly find themselves locked into a bilateral monopoly relationship, with large sunk investments at stake. Not surprisingly, Hennart reports that in 1976 91 per cent of bauxite, by volume, was refined within vertically integrated firms.

There are two main types of tin-bearing deposits. Erosion of tin-bearing rock builds up low-grade alluvial deposits that lie near the surface and can be refined with a standardized technology. Mineral deposits tend to be underground, requiring a greater investment for efficient operation, and producing an ore that requires specific tailoring of refining operations. As the transaction cost theory would predict, extraction and refining of alluvial deposits tend to be carried out by independent firms, while processing of mineral deposits is for the most part vertically integrated.

Masten, Meehan, and Snyder [1989] emphasize the importance of investment in specific human capital as an incentive for vertical integration. Using information on 118 motor vehicle components used by Chrysler, Ford, and General Motors, they estimate the equation

$$(11) \quad VII = 10.47 + 4.45HC + 0.92ASSET - 2.29SITE, \quad R = 0.36.$$

The dependent variable, VII, is the percentage of the company's component needs that are produced within the firm. The dependent variables are measured on a scale from 1 (low) to 10 (high). HC measures the extent to which a transaction requires transaction specific human capital. Similarly, ASSET measures the importance of

transaction specific physical assets, and SITE measures the importance of locating successive stages of production close to one another. The estimated coefficient of HC is statistically significant at the 1 per cent level. No other estimated coefficient that is statistically significant at even the 5 per cent level. This test, therefore, suggests that it is the need to invest in highly specific human capital that promotes vertical integration. This in turn suggests that a critical advantage of vertical integration is the efficient limitation of opportunistic behavior by bringing critical employees within the firm.

Caves and Bradburd [1988] construct an index of forward vertical integration for a sample of 83 U. S. 4-digit Standard Industrial Classification producer good industries. The index is a weighted average of the fraction of companies in the supplying industry that are integrated forward into customer industries in 1975. The weight applied to the fraction of companies integrated into a particular industry is the fraction of supplying industry shipments going to that industry. Their results indicate that vertical integration rises with supplying industry and buying industry market concentration and with an index of share of the supplying industry's product in costs of customer industries. This is consistent with the argument that small-numbers bargaining problems induce vertical integration.

They also find that vertical integration rises with indexes of buying- and supplying-industry spending on research and development - a measure of investment in highly specific human capital - and with an index of buying- and supplying-industry capital-labor ratios - an

index of investment in specific physical capital. All these coefficient estimates are statistically significant, in varying degrees, and support the transaction cost theory of vertical integration.

Conglomerate mergers

Scott [1989] presents two case studies of conglomerate mergers that had the effect of increasing multimarket contact among competitors. He also reports a cross-sectional statistical analysis of 95 large U.S. conglomerate mergers for 1977, and finds that they served to increase multimarket contact with competitors for firms involved in the mergers.

As regards the impact of multimarket contact on market performance, Scott [1991] presents an alternative explanation of the empirical findings of Bain [1956]. Bain attributed a positive impact of market concentration and entry conditions on the profits of large firms within industries as confirmation of a relationship between market concentration and tacit collusion. Scott shows that the firms in Bain's sample enjoyed a significant amount of contact across markets, suggesting that Bain's results are consistent with the hypothesis "that multimarket contact is necessary for a profitable consensus among diversified oligopolists."

Teece [1980] discusses the relatively recent diversification of petroleum firms into markets for alternative fuels, and suggests that this diversification is consistent with the desire to spread the use of technological knowhow across several industries. To the extent that petroleum firms have a similar pattern of diversification across

alternative fuels - and it appears from Teece's Table 1 that this is the case - then the diversification of petroleum firms is also consistent with Scott's [1989] argument that the desire to promote multimarket contact is an engine for diversification.³⁷

C. The Market for Corporate Control³⁸

Adam Smith took note of the implications of the separation of firm ownership from firm control for market performance (Smith [1937, pp. 699-700]):

The trade of a joint stock company is always managed by a court of directors. This court ...is frequently subject... to the controul of a general court of proprietors. But the greater part of those proprietors seldom pretend to understand any thing of the business of the company; and ...give themselves no trouble about it, but receive contentedly such ...dividend, as the directors think proper to make to them. ...The directors of such companies, however, being the managers rather of other people's money than of their own, cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. ...Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company.

Modern treatments of the topic begin with Berle and Means [1932]. And it is to Marris [1963] that we owe the observation that managers who do not tend to the interests of the firm's owners open themselves up to the threat of being replaced. This leads to a view of the merger, in particular the takeover, as an efficiency-enhancing and -enforcing device in the market for corporate control.

Such mergers could be horizontal, vertical, or conglomerate: if a firm's management maximizes sales, growth, managerial prerogatives,

37. Stewart, Harris and Carleton [1984] report significant positive correlations between advertising intensity and R & D intensity of acquired and acquiring firms, results that seem consistent with the Teece hypothesis.

38. See Ravenscraft and Scherer [1987], Scherer [1988], Caves [1989], and Helm [1989].

or anything other than the expected present-discounted value of the income stream of the firm, it becomes profitable for a more efficient management team to mount a takeover bid that will offer shareholders a lump sum equal to the difference between the actual and the potential value of the firm. To avoid the possibility of such a takeover, management is induced to maximize the value of the firm.

There are transaction costs in the market for corporate control, rooted in imperfect and impacted information (Williamson [1974, pp. 1481-1482]). Managers may diverge from strategies that maximize present discounted value because they have an information advantage over shareholders. But this means that they have an information advantage over management teams that might mount a takeover attempt. Further, there are expenses associated with a takeover attempt - shareholders must be contacted and convinced that the new management team offers them a better value than incumbent management. Finally, incumbent managers may use various strategies - golden parachute retirement schemes for displaced management to raise the cost of a takeover attempt.

Event Studies

Considerations of this kind imply that the managements of publicly owned companies will have some leeway to deviate from present-value maximizing strategies. This is confirmed by Smiley's [1976] study of the impact of takeover offers on the share price of target firms. His results suggest that the market value of a firm can fall to 87 per cent of the maximum value before triggering a takeover attempt.

Financial economists have tested the efficiency explanation of mergers by examining the impact of the announcement of a merger or

takeover attempt on the stock prices of firms involved in the merger.

The results are quite consistent (Caves [1989, p. 153]):³⁹

Acquisitions always entail a large gain for the target firm's shareholders over the market value of the free-standing entity. The proportional gain ...amounts to 30 percent for the change in corporate control via tender offer or takeover, 20 percent via merger... The average return to the bidding firm's shareholders is less clear. Some studies have found small but statistically significant gains, others small losses. It seems safe to conclude that the bidder's shareholders approximately break even.

If takeovers produce a clear gain for stockholders of the target firm, and leave the owners of the firm mounting the takeover about as well off as before, they seem to produce a net gain for society. But this is a conclusion that should be treated as tentative at best.

One of the premises of event studies is that the stock market value of the firm is the best possible estimate of the present discounted value of the firm, given available information.⁴⁰ If this assumption fails, then some takeover attempts may have nothing to do with replacing an inefficient management. If a firm with a perfectly effective management is undervalued by the stock market, that firm may be the target of a takeover attempt simply because it is a good buy.

The claim that the stock market value of the firm is an efficient distillation of all available information, and that mergers and takeovers are a rational response to this information, is difficult to reconcile with the record of 1980s U.S. takeover attempts, which

39. See also Jarrell, Brickley, and Netter [1988] and Scherer [1988].

40. For discussion, see Summers [1986].

resembled more a speculative game of musical chairs⁴¹ than a rationality-driven search for efficiency.⁴²

It also seems hard to reconcile the idea that mergers and takeovers have efficiency motives and effects with the number of takeovers that are undone through divestiture.⁴³ Ravenscraft and Scherer [1987] review a number of case studies of mergers which did not work and ended in divestiture. Sometimes the mergers failed because of problems with the acquiring firm that were discovered only after merger - which confirms the importance of imperfect information about firms' performances in the merger process. Sometimes the mergers failed because the acquiring firm was unable to establish effective or improved control over the acquired firm. In these cases the blending of internal organizations did not work - takeover of one firm by another does not automatically mean that a less efficient management team is being replaced by a more efficient management team.

Studies of post-merger performance

Mueller [1985] studies the impact of mergers on market share for samples of companies drawn from the 1,000 largest U.S. firms of 1950

41. Deck chairs on the Titanic?

42. Nabisco and Standard Brands merged in 1981 to form Nabisco Brands, a processed food conglomerate; in 1985, Nabisco Brands was acquired by R. J. Reynolds to form RJR-Nabisco; in 1988, Kohlberg Kravis Roberts purchased RJR-Nabisco for 25.1 billion dollars. For a case study, see Burrough and Helyar [1990]. More generally, see Adams and Brock [1989].

43. Beatrice Foods was purchased by Kohlberg Kravis Roberts in 1985 for 6.2 billion dollars, a purchase financed largely by the sale of junk bonds. By 1988, 9 subsidiaries had been spun off from Beatrice and sold for nearly 7 billion dollars. One motive for the sell-offs was to meet the interest burden on the bonds sold to finance the takeover in the first place. See Adams and Brock [1989, pp. 45-49].

Table 2: Mergers and market share

$$\text{Conglomerate: } MS72 = 0.011 + 0.885MS50 - 0.705MS50 \left(\begin{array}{l} 1 \text{ if acquired} \\ 0 \text{ if not} \end{array} \right)$$

$$\text{Horizontal: } MS72 = 0.027 + 0.547MS50 - 0.403MS50 \left(\begin{array}{l} 1 \text{ if acquired} \\ 0 \text{ if not} \end{array} \right)$$

Notes: MS72 is 1972 market share, MS50 is 1950 market share. All coefficients are statistically significant.

Source: Mueller [1985, Table 2, Table 3].

and 1972. Using a simple autoregressive specification, he estimates equations of the form shown in Table 2. The results show regression toward the mean - high market shares tend to decline - whether or not a firm involved in a merger. The market share of acquired firms tend to decline much more rapidly than the market share of firms that remain independent. This result occurs whether the merger was horizontal or conglomerate. This hardly suggests that merger improves the efficiency of the acquired firm.

Ravenscraft and Scherer use a sample of observations on 2,732 U.S. lines of business⁴⁴ to test two hypotheses about the effect of mergers on profitability [1989, p. 101]:

First, if mergers displace managers who have performed poorly at the task of profit maximization, acquired companies should have lower average pre-merger profitability than their home industry peers. Second, if mergers lead to economies of scale or scope, post-merger profits should rise relative to pre-merger profits and/or peer industry averages, other relevant variables held equal.

Acquired companies tended to have a greater-than-industry average profitability, before acquisition (Table 3). This is true overall, and for all types of mergers except vertical.

44. That is, operations of diversified firms, classified by industry at something between the 3- and the 4-digit standard industrial classification level.

Table 3: Acquired company pre-merger excess profitability, by merger type

Merger type	Excess π/A
Horizontal	11.8
Vertical	-7.0
Related industry	5.4
Conglomerate	9.9
Mixed Horizontal/Other	8.2
All	9.3

Note: profitability is measured by operating income as a percentage of end-of-period assets; excess profitability is line-of-business profitability minus average profitability of the two-digit industry in which the line-of-business is classified.

Source: Ravenscraft and Scherer [1989, Table 2].

In a series of cross-section regressions, Ravenscraft and Scherer examine the impact of differences in acquired firm characteristics on line-of-business profitability. When they regress line-of-business profitability on the share of line-of-business assets acquired by merger, the estimated coefficient is negative and statistically significant. In other regressions, market share has a statistically significant positive impact on profitability, but different variables measuring the share of assets acquired by merger continue to have negative or statistically insignificant coefficients. Only if assets were acquired in a merger between firms of roughly equal size was there any indication that the effect on profitability of the post-merger line-of-business was positive.

Ravenscraft and Scherer also compare the change in profitability over time of two samples of similar firms, one of firms acquired by merger and the other of firms that remained independent. In both groups, profitability of high-profit firms tended to fall over time - a regression toward the mean effect. But the profitability of firms

acquired in mergers fell much more rapidly over time than the profitability of firms that remained independent.

These results do not support the efficiency interpretation of mergers. On average, acquired firms were not less profitable than their industry average before takeover; merger did not raise post-merger profitability; and the profitability of acquired lines-of-business tended to decline at an accelerated rate. Ravenscraft and Scherer conclude [1989, pp. 115-116]:

The ...explanation for acquired units' sharp profit decline must be control loss owing to more complex organizational structures and lessened managerial competence and/or motivation. This control loss explanation is consistent with the high incidence of divestiture following acquisition and the tendency for sold-off units to have negative operating income in the year before their divestiture.

Iwasaki [1988, pp. 507-508] summarizes empirical studies of the impact of mergers on profitability in Japan:

There are a number of existing studies that have tried to analyze the movements in the rates of profit just before and after merger and reorganization. Of the 14 major mergers during the 1957-1966 period leading to formation of firms with total capital amounting to over ¥ 1 billion, the cases in which the rate of net profits on sales improved and those where it deteriorated were exactly half at seven each, and it is not possible to draw any clear-cut conclusion as to the effect of mergers on efficiency.

As for 44 major cases of mergers between 1964-1975, a comparison for three years before and after the merger shows no case of improved rates of profit, but a comparison extended for a give year period before and after the merger reveals such cases. ...for the 18 large-scale mergers, about two-thirds show an improvement in the rate of profit. In view of policy authorities' enthusiasm on the reorganization policy, it is interesting to note that the mergers of firms with poor performance or of those in depressed industries ended up with results not coming up to original expectations.

IV. Conclusion

Public policy toward mergers and joint ventures is increasingly based on the belief that the consequences of such activities for market performance are largely positive. There is little supporting evidence for this belief.

Theoretical models predict that mergers will often be privately unprofitable, because of the reactions of firms outside the merger. If mergers are privately profitable - so that they can be expected to occur - it is nonetheless unlikely that those benefits will be passed on to consumers in the form of lower prices.

Empirical evidence suggests that firms involved in mergers suffer reductions in market share and profitability, compared with similar firms that are not involved in mergers. Takeovers yield a one-time benefit to shareholders of acquired firms, but do not benefit shareholders of acquiring firms. Taken as a whole, these results suggest that mergers typically do not yield efficiency gains, that mergers cannot be interpreted as the market's way of enforcing profit-maximizing behavior and that mergers do not, on average, improve consumer well. As regards economic efficiency and concentration, mergers are not a fitting response.

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