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U.S. ANTI-TRUST POLICY AND WELFARE ECONOMICS THE NEED FOR FUNDAMENTAL REEXAMINATION

C. TAIT RATCLIFFE

A number of empirical conclusions on productivity and statements about trends in the application of the anti-trust laws should be viewed side-by-side:

- 1. Studies in a number of countries indicate that when inputs and output are expressed in real terms, increases in output cannot be completely accounted for by increases in inputs. This conclusion holds for aggregate output and in varying degrees for output by industry in a number of countries including the U.S. and Japan.
- 2. Thus, cost of production of goods measured by the usual indexes of output, in terms of real inputs or resources, is declining.
- 3. The U.S. anti-trust laws implicity assume that market structure (as represented by market shares) is equivalent to market conduct. A dominant producer, if he becomes too dominant, is by definition taking an unfair profit.
- 4. The anti-trust laws also assume the basic conclusion of static welfare ecoconomics, that pure competition leads to a welfare maximum.
- 5. The present trend appears to be toward stricter application of the antitrust laws, based on the premiss that the closer to pure competition a market is, with some regard for efficiencies of scale, the better.

Pareto Optimality and the Department of Justice

The conditions for a Pareto optimum have been well stated elsewhere, by Bator graphically and by Henderson and Quandt using the calculus, to mention only two examples. We will repeat only the basic conclusions here. At a Pareto optimum the society makes the most efficient use of its resources, in the sense that a mere redistribution of resources among production processes cannot result in an increase in total output. Optimal distribution of output guarantees that no one can be made better off by redistributing income without making someone else worse off. While the Pareto optimum assures the most efficient usage of resources and their distribution in a limited, but precise, sense, the optimum could be one of wretched poverty or one of opulence. The optimum is also a static one. The conditions for optimality tell us nothing about going from one level of total output to another. Perfect competition in all sectors is a sufficient condition for Pareto optimality. Existence of monopolistic competition, or external economies prevents the economy from reaching a Pareto optimum. Scitoysky argued that the closer to pure competition, the closer the economy would be to a Pareto optimum. While this assertion appears plausible in the cases Sci-

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tovsky mentions, his entire analysis is a static one.⁽¹⁾

This analytical framework, which forms the core of modern welfare economics, plays the implicit role of conceptual support for anti-trust policy. Much antitrust legislation and many individual rulings have aimed at reducing the degree of "monopoly" or more specifically have attempted to bring markets closer to the state of pure competition. The criterion that price equals marginal cost is one of the conditions for Pareto optimality. If producers face a downward sloping demand schedule and therefore have some control over the price, then price greater than marginal cost will prevail and misallocation of resources, underproduction and other economic ills will follow, according to the usual view.

Anti-trust policy has taken two measures of monopoly as standards: bigness as measured by market share, and evidence of price control or price fixing. Bigness is sufficient cause for being broken up or for the government to take action to increase the number of competitors. Price agreements of any sort are sufficient cause for fines and imprisonment. It is not unfair to say that the Justice Department's apparent image of the law-abiding firm is a small one, having less than some arbitrary percentage of the market, in complete ignorance of the way its competitors set their prices. Another assumption of the Department, less obvious perhaps, is that firm costs are constant. The level of inputs this year produces exactly what a comparable level of inputs in real terms produced ten years ago.

Some Empirical Evidence

Empirical evidence denies that costs in real terms have remained the same over time. Fundamental assumptions of welfare economics and the anti-trust laws are therefore apparently at variance with reality. To take the U.S. and Japan as cases in point, numerous productivity studies in both countries indicate that the rate of increase in real inputs is less than the rate of increase in output.⁽²⁾ Studies in recent years have attempted to correct the input series for changes in quality. For example increased labor efficiency, higher levels of utilization of capital and other factors have been singled out as possible reasons for the discrepancy between observed input growth and observed output rates of growth. Thus far only one study has claimed to eliminate the residual, that of Jorgenson and Griliches. Later work by Jorgenson and Christianson has revised the Jorgenson-Griliches conclusion and the residual remains, variously ascribed to returns to scale, technical progress and so forth.

Economists have attempted to correct output and input series for changes in quality because the usual series, even in real terms, fail to account for such things as the effects of expenditure on education, which may improve the quality of the labor force, the effects of learning, which may lower cost, the fruits of research for technical improvement and innovation, as well as numerous other possible

⁽¹⁾ Tibor Scitovsky, Welfare and Competition, See for example Chapter 16.

⁽²⁾ Jorgenson, D. and Griliches, Z. "The Explanation of Productivity Change", The Review of Economic Studies, July 1967.

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influences on aggregate productivity. Ideally, to achieve the optimum allocation of resources we would want to know the contribution of each factor influencing the level of productivity. If the level of expenditure on education for example can be increased without the marginal cost to the society exceeding the marginal benefit, then it makes sense to increase expenditure on education, by the theory of marginal costs and products. No doubt a complete "social accounting framework" would enable a society to come closer to the optimal usage of its resources. But we seem to be far from solving all the conceptual problems involved in constructing such a framework.

One of the disadvantages of research into correcting input series for quality change is that is tends to obscure the implications of increasing productivity for industrial policy, trade and anti-trust policy. The fact that productivity change is occuring is meaningful in itself and the unadjusted series can lead us to important conclusions even though they do not reflect changes in quality adequately. There appear to be more important questions than those of adjustment for quality. These include: How fast is productivity changing among countries for the same products and processes? What portion of productivity change is due to industrial concentration and what portion to improvements that affect all firms, large or small in equal degree?

The implication of these findings in the study of productivity is that costs are declining. If costs are declining, then marginal cost is below average cost and the requirement that price and marginal cost be equal now necessitcites a subsidy according to the usual theory since the firm must operate with price below average cost. If firms should sell at marginal cost, they would always sell below the average cost of production. Furthermore the firm that increases its production most rapidly under declining costs will have the lowest costs. The lower the cost of production with stable prices, the wider the major producer's margin and the larger his available funds for reinvestment and growth. Under a more aggressive pricing strategy, a firm may lower prices below those of his competitors, thus assuring that this firm grows faster, lowers cost faster and eventually pre-empts much of the market.

It is important to realize that the cost reducing effects of industrial concentration need not hold in general to draw some conclusions about anti-trust policy. If it holds in a few growing and important industries, that is sufficient to warrant a re-examination of the assumptions behind the U.S. anti-trust provisions. One product where industrial concentration has clearly been beneficial has been in the field of integrated circuits.⁽³⁾ As the figure on the following page shows, the market price of IC's has fallen steady since their introduction. The black dots represent average yearly prices, while the white dots show the lowest monthly prices. Texas Instruments has adopted the policy of capturing and maintaining the largest market

⁽³⁾ The examples for integrated circuits, silicon diodes and primary aluminum are taken from the Boston Consulting Group publication *On Experience*. The author is a member of this group.

share by passing on all cost reduction due to increased productivity to the consumer. This illustrates one point clearly overlooked by the anti-trust provisions. In a growing industry one of the best strategies, especially if costs are decreasing, is to lower price as cost declines. This keeps competitors out and assures a high margin when the product ceases to grow rapidly. Price was probably never equal to marginal cost in the case of this product. Price was always above marginal cost. Nonetheless the consumer has benefitted because prices have fallen over time. Fallen further than they would have if pure competition had been enforced.

The anti-trust provisions also appear to ignore the fact that there are strong incentives to decrease price and pass along any cost reduction to the end user. To take the example of silicon diodes as a case in point: The major makers of this product maintained a price umbrella for three years. As a result their high margins attracted other producers who cut price to capture more of the market. Again the main incentive to pass cost savings to the consumer was to capture most of the market share and therefore have the lowest costs and widest margins when the product demand stopped growing.



Under present anti-trust policy what happens in an industry with declining costs? If a firm attempts to take too large a portion of market share it will run afoul of the anti-trust regulations concerning the size of market share. A case in point is that of Alcoa. The cost of primary aluminum and its accumulated production are given in the figure on the following page. Price of primary aluminum declined steadily during the period when Alcoa had a virtual monopoly

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on production. Price leveled off, then rose when the government provided a price umbrella so that other producers could enter the industry and provide competition for Alcoa. As might be expected, with production then distributed among a larger number of producers, economies of scale were not as great, and in consequence the rate of price decline was not as great after prices began to fall again. The effect of anti-trust policy here is all too clear. Cost and price reduction coming from Alcoa's increasing scale was first arrested, then resumed at a slower rate due to the entry of competitors, the consequent division of the market and loss of the advantages of scale. In fact although some may continue to argue that the elimination of monopoly in this industry was the appropriate policy, that is, increasing competition was better for the industry, it would seen that this view ignores the fact that sufficient competition probably already existed, from other metals. One of the requirements for a true monopoly, immune from price competition, is that no close substitutes exist for the product.

In short, aiming at greater competition to come closer to the goal of price equals marginal cost, essentially a conclusion based on static considerations alone, may result in higher costs, over time, than if firms are allowed to increase in size and realize cost advantages.

The Future

If anti-trust policy in the U.S. continues its present trend of increasing severity, insisting on a low maximum for market share held by one firm, the effect will be limit the efficiency of production in decreasing cost industries. That cost reduction is taking place in the U.S. and Japan is clear. This implies that cost for a significant number of industries is falling and in turn that insistence on a minimum level of "competition" will have the effect of achieving little more than an inefficient usage of resources compared to the more efficient utilization of resources that might prevail if firms were allowed to expand to their optimal scale.

A more serious implication will be that U.S. exports will become increasingly less competitive in world markets. To show this we need only assume that other nations are less assiduous in the application of anti-trust legislation and that firms in these nations have the opportunity to expand production in domestic and overseas markets to levels comparable to those in the U.S. Neither of these assumptions is unrealistic. In fact evidence is available for some products indicates that this has already happened. Two products where this the case are Japanese color television sets and automobiles. Cost comparisons in the U.S. and Japan indicate a steady cost decline in both nations with Japan starting at a lower level of initial cost and price due to transfer of technology, then showing a steady decline as output increased, with the Japanese products eventually becoming less expensive than U.S. products around 1968.

While economists need not take sides in trade wars, it does seem appropriate to point out that the agency of the U.S. government in charge of enforcing antitrust policy appears not to have been apprised of the economic implications of

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increasingly severe enforcement of these laws. Ironically, the enforcement is intended to increase the welfare of the society, to improve its efficiency Increasing the number of firms in declining cost industries however achieves the opposite. Potential cost declines and more efficient usage of resources is not accomplished. Therefore applied to decreasing cost industries, the anti-trust laws are without economic justification and go contrary to the economic end of more efficient usage of resources and maximum welfare.

The fear of bigness and the political effects of bigness are probably behind much of the fervor with which anti-trust regulations are enforced. While the political effects of bigness are difficult to predict or measure, it would clarify thinking to compute the cost savings which could be gained from increased industrial concentration in decreasing cost industries. This is the cost of anti-trust legislation. Over time, in economies that show decreasing costs in the aggregate the cost savings should be enormous. With this in mind it ought to be easier to find alternative ways to control the effects of bigness, ways that would allow the society to realize the cost savings of concentration.

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