RICHARD T. ELY LECTURE

The Economists and the Problem of Monopoly

By GEORGE J. STIGLER*

For much too long a time, students of the history of the American antitrust policy have been at least mildly perplexed by the coolness with which American economists greeted the Sherman Act. Was not the nineteenth century the period in which the benevolent effects of competition were most widely extolled? Should not a profession praise a Congress which seeks to legislate its textbook assumptions into universal practice? And with even modest foresight, should not the economists have seen that the Sherman Act would put more into economists' purses than perhaps any other law ever passed?

Of course there were partial explanations. The coolness of the economists sometimes rested more on disbelief in the efficacy of the Sherman Act than on hostility to its purpose. The route of regulation was preferred—although this preference hardly restores the reputations of those economists as prophets. One might even point out that there were not many good American economists at the time, although an undeniable giant such as Irving Fisher shared the common view.

I intend on this occasion to review the attitudes of economists toward monopoly as a problem in public policy. My subject, however, is a good deal broader than the Sherman Act and its reception: the last two centuries of the economic writings on monopoly policy, particularly in England and the United States, will be surveyed. Thereafter I shall examine the reciprocal effects of economics and antitrust policy.

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I. From Smith to Sherman

Adam Smith, that great manufacturer of traditions, did not fail us in the area of monopoly, for he created or rendered authoritative three traditions that were faithfully followed in English economics for almost 100 years. The first tradition was to pay no attention to the formal theory of monopoly, a tradition first challenged in 1850 by Dionysius Lardner in dealing with railway rates. How fortunate was Smith: even by neglect of a subject he could create a tradition! It is the one area where many of us, however, are his equal or superior.

The second tradition was to identify the serious monopolies of his time with the grants of exclusive power by the state. For Smith the two leading instances were the guild corporations and the great joint stock trading companies.[1] He could not have been unmindful of the existence of many other examples—one would be the Highland village which could support only one or two enterprises in one trade. But almost by definition they were of small importance: economic mosquitos collecting their drop of blood from the body economic.[2]

Smith's third tradition-setting view was that nothing could be done about the instances of monopoly and collusion of small numbers of rivals. Actual prohibition of collusive meetings could not be achieved by "any law which either could be executed, or would be consistent with liberty and justice" (Vol. I, p. 144). Those meetings of businessmen which he made famous would seldom

[1] *The Wealth of Nations*, Glasgow edition, 1976, passages on apprenticeship and joint stock companies.

[2] The only large markets in which Smith expected important economies of scale, and hence small numbers, were banking, insurance, canals and waterworks (Smith, Vol. II, p. 281).

create "merriment," of course, if they left profits where they found them.

I shall be brief in dealing with the later bearers of these traditions. Let me only notice in passing that Ricardo called a price a monopoly price only if cost of production had no influence on its level[3] —an adequate proof of the low state of monopoly theory. He would demand, however, that I record the statement attributed to him by Hansard: "Mr. Ricardo...[had] never given a vote in favor of monopoly in his life" (Vol. V, p. 301).

John Stuart Mill recognized the baneful effect of small numbers on the vigor of competition: "Where competitors are so few, they always end up agreeing not to compete" (Vol. I, p. 142). In such industries as water supply, therefore, although the state must control entry to prevent waste, it must also sooner or later regulate and possibly operate such enterprises. In keeping with custom, Mill saw no way for the state to support competition other than by failing to create monopolies.

We have one early antimonopoly policy on which to test the attitudes of the classical economists. A host of earlier laws were codified into the Combination Acts of 1799 and 1800, which forbade either employers or employees to join to influence the wage bargain. The passage of those Acts did not attract the attention of any economists (who were few indeed in those years) but their repeal in 1824, which was engineered by Francis Place, did receive modest attention.[4] That J. R. McCulloch (1824) wrote strongly in support of the repeal of the acts is a plain expression of the remoteness from the economists' thoughts of an active antimonopoly program. This well-informed writer ("We should never have done were we to attempt to lay before our readers a tithe of the information of which we are possessed"), in the course of a discussion marvellous for its insights as well as its inconsistencies, remarks,

> The merest tyro in economical science would not hesitate to ridicule all apprehension of famine, or even of a stinted supply of the market, from a combination of corn dealers, or of bakers, to raise the price of corn or bread: For we would feel assured, that there were a hundred chances to one that no such combination would ever be generally entered into; and that supposing it were, the moment prices had been raised ever so little above their natural rate, it would become the interest of a large body of combiners to secede from the combination, and to throw their stock on the market. [pp. 320–21]

The weakness of collusion continued to be a widely accepted belief of economists.

The views of the community at large, as well as those of economists, are well-expressed in the admirable article on monopoly in the *Penny Cyclopedia* (1839). I quote two passages.

> It seems then that the word monopoly was never used in English law, except when there was a royal grant authorizing some one or more persons only to deal in or sell a certain commodity or article.
>
> If a number of individuals were to unite for the purpose of producing any particular article or commodity, and if they should succeed in selling such article very extensively, and almost solely, such individuals in popular language would be said to have a monopoly. Now, as these individuals have no advantages given them by the law over other persons, it is clear they can only sell more of their commodity than other persons by producing the commodity cheaper and better. [XV, p. 341]

[3] *Principles of Political Economy and Taxation*, Sraffa ed., Vol. I, pp. 249–50; also *Works*, Vol. II, p. 260; Vol. IX, pp. 97–98. In extenuation, he should be credited with an early recognition of Harberger's triangle, Vol. II, p. 409.

[4] A comprehensive survey is made by William Grampp, 1979; see also the famous discussion by A. V. Dicey. The effects of the early acts on unions deserve study. Grampp finds the laws "unworkable" and failing to prevent combinations from forming, but also quotes with approval the view that the repeal was "the starting point of a great new development in the history of English trade-unionism" (pp. 515, 522).

On this view, *laissez-faire* served the ends of an antitrust policy.

The omission of a theory of monopoly and oligopoly began to be remedied in the last third of the century. The remarkable work of Cournot and Dupuit began to enter English economics, in particular through Edgeworth, Sidgwick and Marshall.[5] Putting aside the intractable problem of oligopoly, substantial advances were made in the theory of monopoly and price discrimination. So ended the first Smith tradition.

The second tradition—that all important monopolies were created by the state—began to be eroded in the nineteenth century with the development of railroads and other large scale utilities, as Mill's practice has already told us. We now had a class of monopolies which might, and usually did, get grants of power (eminent domain) and more merchandisable assets, from the state, but whose existence rested chiefly on important economies of scale. The recommendation, first of publicity of accounts, and then regulation or public ownership, became general. By 1890, Britain and the United States were the only important nations in the world with privately owned railroads. Before that date little attention was paid in the English or American economics to monopoly in the manufacturing or trading sectors. So Smith's second tradition had bifurcated into state-created monopolies and those created by economies of scale, and the latter constituted the public utility sector of the period.

Smith's third tradition, that the state should only refrain from creating monopolies, was thus amended to assign responsibility to the state also for the control and perhaps operation of railroads and similar utilities. A careful student of the history of economics would have searched long and hard, on July 2 of 1890, the day the Sherman Act was signed by President Harrison, for any economist who had ever recommended the policy of actively combatting collusion or monopolization in the economy at large.

II. Since Sherman

The historians of American antitrust policy have emphasized the lack of enthusiasm, and often the downright hostility, with which economists greeted the Sherman Act.[6] Jeremiah W. Jenks, author of a standard work, *The Trust Problem*, 1900, offered this appraisal a decade after the passage of the law:[7]

> Twenty-seven States and Territories have passed laws intended to destroy such industrial combinations as now exist, and to prevent the formation of others. Fifteen States have similar provisions in their constitutions, ... Besides this legislation on the part of our States, we have a Federal Anti-Trust Act.... A study of these statutes and of the decisions of our courts of last resort which have been made under them, will show that they have had comparatively little, practically no effect, as regards the trend of our industrial development. [pp. 217–18]

This skepticism was shared by probably a majority of economists of the period, in England as well as here. Thus, D. H. Macgregor, Marshall's premier student of market organization, observed that leading economists believed that the development of large scale enterprise represented a powerful historical force:

> If this is so, the State places itself in an altogether untenable position by the enactment of laws against combinations as such—laws, for instance, so general in their terms as the Sherman Act of 1890.... If there are economic tendencies, the State cannot prevent,

[5]I am coming to admire Henry Sidgwick almost as much as the other two. His *Principles of Political Economy* has two chapters (Book. II, ch. IX and X) which are among the best in the history of microeconomics, dealing with the theories of human capital and noncompetitive behavior.

[6]See H. Thorelli, *Federal Antitrust Policy*, pp. 311 ff; John D. Clark, *The Federal Trust Policy*, 1931, ch. V.

[7]Richard T. Ely was no less emphatic: "If there is any serious student of our economic life who believes that anything substantial has been gained by all the laws passed against trusts... this authority has yet to be heard from" (p. 243).

> although it can harass them; and the belief of economists in the possibilities of combination appears justified by the utter failure of the American laws to stop the development, although these laws now fill a bulky volume. More than this, even if there were a greater divergence of expert opinion than there is, it would not be the function of the state to prejudge the question, and to set up a standard of economic orthodoxy. The position is an intolerable one when the course of industrial development stultifies the statute-book, monopolistic associations flourish in the face of the law, and anti-Trust proposals have exhausted their function when an electoral campaign is over. [pp. 231–32]

Two influential economists were somewhat more sympathetic to limited antitrust policies. J. B. Clark (1901) believed that large enterprises were inevitable, but that they would be deprived of monopoly power by the threat of potential entry, provided these great enterprises were denied the use of predatory policies such as local price cutting.[8] Marshall viewed the Federal Trade Commission as primarily a research arm of policy, able to collect facts and submit them to "long-continued, organic and scientific study" (1919, pp. 516–18), and therefore competent to distinguish the effects of socially desirable and undesirable economic practices. I am not prepared to ridicule this vision, and indeed the Commission viewed itself partly in that light in its first days. Nevertheless, it would have been helpful if Marshall, or some of his lesser contemporaries, had explained the nature and workings of their sovereign regulatory tool, publicity. How and where publicity (after all, a policy akin to legal blackmail) could control undesirable behavior was never spelled out.[9]

In the decades that immediately followed, it would be more accurate to say that tolerance of antitrust policy grew, than to say that it became a popular cause among economists. As late as 1932 Arthur R. Burns characterized the antitrust laws as "a notable failure" (p. 523), but friends of the policy had begun to appear. Henry C. Simons, in his celebrated *Positive Program for Laissez-Faire*, demanded that

> There must be outright dismantling of our gigantic corporations, and persistent prosecution of producers who organize, by whatever methods, for price maintenance or output limitation. There must be explicit and unqualified repudiation of the so-called "rule of reason."...In short, restraint of trade must be treated as a major crime .... [p. 58]

No doubt my memory exaggerates the influence of this voice, which sounded so clear and brave when I listened to it in a Chicago classroom.

In any event, I believe that a census of economists' attitudes would show a steady rise in the popularity of antitrust policy in the 1950's and 1960's. One telling indication of the present state of professional opinion is that John Kenneth Galbraith, who attacks only popular views, has repeatedly delighted in disparaging the effectiveness of our antitrust policy, or denying its consistency with other policies.

This rapid sketch of the evolution of economists' attitudes toward antitrust policy poses many questions, of which I shall discuss three with merciful brevity:

1. Why did the economists' attitudes change?
2. What effect has economics had on antitrust policy?
3. What effect has antitrust policy had on economics?

III. The Causes for the Change of Opinion

The surprise often expressed at the early indifference or opposition to antitrust policy by economists stemmed from the traditional

[8] The role for legislation is much larger in the second edition, where he asked for prohibitions on interlocking directorates, requirements, and unfair methods of competition. See J. B. and J. M. Clark, 1912, pp. 104 ff., ch. VII.

[9] For an example of the bold claims for publicity, see George Hadley, p. 137.

praise of competitive organization of markets and industries in our literature. Free trade is a sort of international antimonopoly program in itself: the markets of our nation should be open to producers in other nations. So vast a majority of economists had vigorously supported free international trade for the century before the Sherman Act, that it was not a bizarre expectation that intranational competition should be favored as much as international competition. But we know that this was not the case, and I shall shortly propose a reason for this difference.

It would be gratifying to me if I could report that our profession's changing view was based upon the systematic study by economists of the effects of the policy; in short, that hard evidence carried the day. Unfortunately, there have been no persuasive studies of the effects of the Sherman and Clayton Acts throughout this century. Simon Whitney's two-volume survey reaches a favorable verdict on the antitrust laws, but his chapter surveys of industries and cases are joined to his conclusions by leaps of Olympic grandeur. My attempt in 1966 at measurement of the effects of the antitrust laws was able to dismiss nonsense such as the prohibition of interlocking directorates, but reached only feebly favorable presumptions on Sections 1 and 2 of the Sherman Act. James Ellert's more recent comprehensive analysis of the influence of antitrust actions on stock prices of defendant companies finds only small effects at best, except when triple damage suits follow.

Indeed the early skepticism of the effectiveness of the laws has even received some recent confirmation. The dissolutions of the American Tobacco Company and especially of the Standard Oil Company were at the time widely viewed with skepticism. In a measure these doubts were recently confirmed when Malcolm Burns showed that the stock market soon set the relevant future effects of these dissolutions at naught. There are numerous scraps of evidence on the issue, but they are by no means single minded in their tendencies, so we must look further.

I would propose as a first main explanation for the change of opinion a simple, and yet I believe an important, point. In the first decades of the Sherman Act, *all*—literally all—the attention of economists and public was focused on combination and explicit cooperative arrangements (now labelled cartels) with monopoly power. Everyone knew that the first section of the Sherman Act concerned collusion, and the Addyston Pipe case was duly observed, but informal collusion seemed a peripheral target of the law. J. B. Clark and J. M. Clark were explicit:

> So long as mere pools or contracts to control prices were depended on they were not as menacing as the later forms of union [of firms] became; and they did at least allay a warfare that involved much evil. In doing this they made their contribution to general prosperity, and the modest price of this was something to which the public reconciled itself, though it did not make the payment altogether willingly. It was the appearance of consolidations that were firmer and more complete that caused the menacing shadow of general monopoly to deepen. [1912, p. 4]

The Sherman law was primarily a law against trusts. The Clayton Act did not even concern itself with conspiracies, with the exception of the prohibition of interlocking directorates.

Gradually the emphasis of the enforcement of the laws shifted toward the conspiracies in restraint of trade. In historical retrospect, there have been many conspiracy cases for every attempt to prevent or dissolve a monopoly. That shift in focus had an important consequence for professional opinion.

Collusion cases do not raise the question of economies of scale, at least in any easy or explicit way. All the fears that dissolution of large firms would lead to great inefficiencies seem to fall by the wayside in collusion cases. The defender of antitrust policy as it was practiced need not offer defenses against a charge of economic inefficiency or obstruction of great historical forces. As the main content of the effective definition of monopoly changed, it became easier to oppose monopoly.

There is and was no tradition of affection for cartel organizations in the Anglo Saxon literature: indeed the words cartel and guild are frequently used to anathematize an industry or practice. Standard theory associates cartels with less efficient uses of resources than with monopoly proper, and with much less technological progress. Cartels belong in the class of indefensible institutions, and it would more appropriately express American economists' attitudes if cartellizing had been labelled industrial incest.

Let me consider more briefly a second possible explanation for the growth of professional liking for antitrust policy, in addition to the shift in policy emphasis to collusion that I have just described. The main methods of controlling economic activity alternative to the market are public regulation and ownership. It would be very easy to say that growing disenchantment with political controls of economic activity has increased the desire of economists for market solutions. The reputations of the NRA, incomes policies and general price controls—to say nothing of the post office—are not of the best. The reputation of industry regulation of transportation and agriculture is no better. Yet I am unwilling to press this case: for every criticism of the failures of political controls, I suspect that I can still find two or three allegations of market failure.

Finally, let me propose one further explanation, one that economists are very good at understanding. After many years of abstention, I have recently been a participant in several antitrust cases. From these cases I have learned three things:

1. It was not exactly news, but it was impressed upon me that justice does not always prevail, and it is fortunate that justice does not always prevail.

2. The number of economists, ranging from Nobel prize winners to graduate students no better known than the Unknown Soldier, who are employed in antitrust actions is large, running into the many hundreds.

3. The rate of compensation for economists in this activity is not in violation of the federal minimum wage law.

I simply record that antitrust testimony is probably one of the three or four major sources of income of economists, well below teaching and research but possibly equal to that earned from writing, lecturing, and televising the mother science, or from making macroeconomic predictions.

If you are unsatisfied with the adequacy of these explanations for the rise in favor among economists of the antitrust policy, you share that feeling with me.

IV. The Economists' Influence on Policy

When a set of recommendations is made at one time by a prominent economist and soon followed by the passage of laws consistent with those recommendations, it is possible to believe that the recommendations were being followed. This sequence can be observed with respect to J. B. Clark's detailed pronouncements against predatory competition and the antitrust laws of 1914.

Yet I am unwilling to believe that economists in general, or Clark in particular, had any appreciable influence on antitrust legislation. It would be possible to mention many other people who were making similar recommendations, but that merely complicates the chain of causation. The real reason for doubt is that no economist had any professional knowledge on which to base recommendations that should carry weight with a skeptical legislator. Consider two important examples. First, the major role of predatory competition in obstructing and suppressing the competitors of a trust was based upon anecdotal hearsay, primarily of the muckrakers. Here is a sample from J. B. Clark:

> A producer...once called on the manager of the trust that was driving him to the wall, and was received with the brusque admonition that he had "better get out of the business." "But do you not see," said the independent producer, "that, in my territory, I can produce more cheaply than you can?" "Do you not see," was the reply, "that if we lose money in the twenty cities where you are operating, and make money in the two hundred other cities where we are operating, we come out ahead?" [pp. 34–35]

Candor forces me to state my belief that the distinguished Columbia professor invented this dialogue, but even if he had a recording of it, it is no evidence for an economist. Modern scholarship, I may observe, has raised strong doubts about the frequency of use of predatory competition, and has by no means resolved the theory of its operations.[10]

Second, the view that the watering of stock and the fleecing of investors was one main purpose of the formation of trusts rested, so far as I can tell, on the fact that some mergers were extremely profitable to promoters—with scarcely a glance at the effects upon investors. If J. P. Morgan's yacht was a powerful argument, it should still not have come from professors of economics. We shall return again to this problem of established economic knowledge.

The active participation of economists in antitrust policy has of course grown immensely. The first economist in the Antitrust Division may have been Corwin Edwards, in the regime of Thurman Arnold.[11] The number of economists has now risen to about forty-five, and the Federal Trade Commission has twice as many (see Appendix Table 1). The Commission, indeed, was assigned large tasks of economic research by its enabling statute, and in its first fifteen years the number of economists rose to forty-four (in 1930),[12] only to fall by more than half in the next two decades. The wonder, of course, is that any large number of economists ever survive in a law enforcement agency. To these public servants we must add the number of economists employed by private parties, which has been possibly twenty times as large. But unless one believes in a labor theory of value, the magnitude of economists' influence remains uncertain. Even on the labor theory of value, our socially necessary amount of labor is a tiny part of antitrust product value.

Those who are skeptical of our influence will find support in Suzanne Weaver's interviews in the Antitrust Division, where the tension between economists and lawyers is emphasized. The powerful resentment of the lawyers to Donald Turner's economic orientation is well known. A parallel study of the FTC by R. A. Katzmann finds economists achieving a position of some power after 1970, which suggests that someone's learning curve is rather flat. Knowledgeable economists have proposed much more favorable verdicts on our influence, but they do not offer evidence of a specificity or power such as we normally require in professional work.[13]

Economists have their glories, but I do not believe that the body of American antitrust law is one of them. I rest my fundamental doubts about our influence on antitrust policy on the fact that we have provided precious little tested economic knowledge to guide policy. No one can believe that we have established a precise relationship between concentration and market power. Doctrines such as "shared monopoly," "preemptive product differentiation," and price fixing by interviews with the trade press, have all been proposed by economists and antitrust agencies in the past decade. None is even agreed to generally by economists, let alone tested empirically. The prosecution and defense both find economists to their liking, but that hardly establishes the direction of causation. Some cases seem sophisticated and sensible (for example, the widely acclaimed Sylvania decision), but shouldn't this happen with random fluctuation?

If law is efficient—as my colleague (now Judge) Richard Posner has argued with great learning and ingenuity—we should expect it to incorporate tested knowledge, and for the rest to respond to the effective political forces impinging upon policy formation. It would be remarkably vain to believe that today's industrial organization economics supports

[10] See John McGee's 1958 article; Lester Telser's 1966 article; and for references to the substantial literature, McGee's 1980 article.

[11] He provides a characteristically noneconomic account of Arnold in his 1943 article.

[12] It is not apparent that these economists had a large influence on the Commission's work; they are studiously ignored by G. C. Henderson, 1924.

[13] See Oliver Williamson's commentary, 1979, pp. 84–90.

much specific policy. I freely grant that our economic analysis is better than J. B. Clark's. I hope Professor Clark agrees. If we have improved, our influence should be somewhat greater than it once was but that does not mean that it should be large. We need to be humble in a day when the greatest function of the antitrust laws appears to be to arm the defenses of the corporate officials who, when a takeover proposal is made, seek to maintain their tenure against the avarice of their stockholders.

V. The Influence of Monopoly Policy on Economics

Let us now turn the question around and ask what the effect of the antitrust policy has been on economists. We are addressing a special case of the general problem of how a science responds to the interests of its society.

The direct demand for the services of economists in implementing antitrust policy —particulary in litigation—has already been referred to. No one has repealed the aphorism about pipers and the tunes they play: I would conjecture that the influence of direct employment is neither negligible nor large. I suspect that the large number of economists who are beneficiaries of the Bell system (including its journal) are less prone to criticize that system than they would otherwise be. Again, antitrust experts surely lose one or two degrees of freedom in dealing with the effects of concentration or the definition of a market in each antitrust case in which they appear.

Jacob Viner once told me of his experience in testifying for the government in an early basing-point price system case. I may add that his compensation was probably negligible or less.[14] He began, he said, as a detached scholar, but after some hours of sharp cross examination, he found that he had become an aggressive supporter of the government's position. Only the economist who withdraws completely from all policy discussions is insulated from such influences, and insulated also from much of the real world.

A quantitative measure of our profession's changing interest in monopoly and public regulation can be derived from that customary guide, the *Index of Economic Periodicals*.[15] This source tells us that we fully shared the excitement of the progressive era and the muckrakers over the problem of monopoly: fully one-fourth of all articles in America in the first decade of this century were on monopoly and public regulation. Four out of five of these articles were on the panacea of that age, public regulation of utilities. With the passage of time the relative interest in monopoly fell in half, and the interest in public utilities fell by seven-eighths, and now neither subject receives as large a share of economists' attention as in Britain. The absolute level of writing on these subjects has of course risen substantially.

I find this relative decline in the measure of our interest less surprising, and not at all disturbing, compared to the minor influence that our antitrust policy has had upon fundamental economic research. One scholar—Aaron Director—did examine a variety of industrial practices in the course of teaching a famous course on antitrust law with Edward Levi, and made fascinating theoretical contributions (virtually all oral) on predatory competition, tie-in sales and other forms of price discrimination, and patent policy. But his work has had few imitators.

Consider the problem of defining a market, within which the existence of competition or some form of monopoly is to be determined. The typical antitrust case is an almost impudent exercise in economic gerrymandering. The plaintiff sets the market, at a maximum, as one state in area and including only aperture-priority SLR cameras selling between

[14] I am reminded of the time Viner gave a splendid lecture at the University of Minnesota on the balance of power. The lecture bureau asked him for the customary 15 percent of his fee, which he gleefully reported to be zero.

[15] The data are reported in Appendix Table 2, which I must thank Claire Friedland for compiling. The relative attention to industrial organization in the earlier period is probably underestimated because of the omission of books, which were the major vehicle for publication in that area.

$200 and $250. This might be called J-Shermanizing the market, after Senator John Sherman. The defendant will in turn insist that the market is worldwide, and includes not only all cameras, but also portrait artists and possibly transportation media because a visit is a substitute for a picture. This might also be called T-Shermanizing the market, this time after the Senator's brother, General William Tecumseh Sherman. Depending on who convinces the judge, the concentration ratios will be awesome or trivial, with a large influence on his verdict. My lament is that this battle on market definitions, which is fought thousands of times what with all the private antitrust suits, has received virtually no attention from us economists. Except for a casual flirtation with cross elasticities of demand and supply, the determination of markets has remained an undeveloped area of economic research at either the theoretical or empirical level. Other branches of antitrust economics, such as vertical mergers and franchising and leasing, have been almost equally neglected.

It would not be proper to conclude that our antitrust policy has had no effect upon economic research. A literature such as that on workable competition or administered prices—neither an ornament to our science—was created to give advice on monopoly policy. The data supplied to the scholars by litigation have provided a wealth of materials, which have yielded among other good things innumerable dissertations on as many industries. Industrial organization was a much more active field in the United States than elsewhere between the two world wars, and our antitrust policy was surely the main reason for this difference. Yet this history is an unnecessary reminder that active public policy carries no assurance that fundamental economic research relevant to that policy area will flourish.

VI. Conclusion

The only conclusion I shall seek to draw from this survey of the relationship between economics and antitrust policy is that the attitude of economists toward monopoly policy is strongly influenced by the corpus of technical price theory. Our present support for procompetitive policies is due in good part to the strong virtues we attach to competitive markets and industries.

That point is illustrated rather than contradicted by our historical survey. Competition is now much more vigorously supported than it was in 1890 primarily because we understand it much better today. In 1890, competition was a common sense notion in economics, more a loose description of economic behavior than an analytical concept. In no sense was the supremacy of competition challenged by the then small, emerging literature on monopoly. A concept without enemies, however, is a concept without informed friends. The content and power of competition have become much better understood after several generations of far ranging debate about monopolistic and imperfect competition and oligopoly—a word unknown to the profession in 1890. Consider one small example: the earlier literature of predatory competition had the predator cut prices in the vicinity of the prey and raise prices elsewhere to recoup the loss. Today it would be embarrassing to encounter this argument in professional discourse.

I once encountered vigorous criticism when I argued the related thesis that professional economists are more favorable to the use of a price system than other academic people (see my 1965 article). Even the urbanity of Harvard economists was ruffled at the suggestion that they leaned more than intellectuals generally toward use of the price system and away from use of the political system in dealing with economic problems. Quite independently of the question of how one should lean, I believed then, as I do now, that it is a tribute to the strength of the corpus of knowledge in a discipline if its practitioners accept it even in areas outside their professional work. We have trouble enough showing how economics influences our society, so it is of some consolation to assert that it influences us!

APPENDIX TABLE 1—ECONOMISTS IN THE ANTITRUST AGENCIES, 1913-81

Year	Department of Justice[a]	FTC[b]
1913	(?)	(?)
1923	(?)	30
1930	(?)	44
1951	?	18
1955	?	26
1971	?	47
1972	21	53
1973	26	56
1974	24	66
1975	36	67
1976	43	73
1977	40	73
1978	44	81
1979	45	78
1980	45	80
1981	?	92

[a]Data provided by William Baxter and Bruce R. Snapp, of the Antitrust Division.
[b]Data provided by John Peterman of the FTC.

APPENDIX TABLE 2—ARTICLES PUBLISHED ON MONOPOLY AND PUBLIC UTILITIES, UNITED KINGDOM AND UNITED STATES

Journals, by Nation	1900–09	1930–39	1960–65[a]
	1. Monopoly[b]		
1. U.S.: Articles	27	137	206
2. As Percentage of Estimated Total Articles[e]	5.4%	2.6%	2.5%
3. U.K.: Articles	7	16	71
4. As Percentage of Estimated Total Articles[e]	1.3%	1.3%	3.0%
	2. Public Utilities[c]		
5. U.S.: Articles[d]	100	179	195
6. As Percentage of Estimated Total Articles[e]	20.0%	3.8%	2.5%
7. U.K.: Articles	30	35	102
8. As Percentage of Estimated Total Articles[e]	5.5%	2.8%	4.3%

Source: American Economic Association, *Index of Economic Journals* for years indicated.
[a]Recent years of the *Index* are not directly comparable because of the revision of subject codes and the adoption of the deplorable policy of including reprintings of articles.
[b]Subject codes 15.23 through 15.39.
[c]Subject codes 15.6 through 15.99.
[d]Excluding the *Journal of Land and Public Utility Economics*, which had 260 articles (mostly noneconomic in nature) in the second period, and 46 in 1960–65.
[e]Estimated Total Articles by nation based on a 50 percent sample of those in the authors' index for 1900–09 and a 14 percent sample for 1930–39 and 1960–65.

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