Price Theory and Oligopoly
Author(s): K. W. Rothschild
Reviewed work(s):
Source: *The Economic Journal*, Vol. 57, No. 227 (Sep., 1947), pp. 299-320
Published by: Blackwell Publishing for the Royal Economic Society
Stable URL: http://www.jstor.org/stable/2225674
Accessed: 11/12/2011 15:09

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
http://www.jstor.org/page/info/about/policies/terms.jsp

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Blackwell Publishing and *Royal Economic Society* are collaborating with JSTOR to digitize, preserve and extend access to *The Economic Journal*.

http://www.jstor.org

PRICE THEORY AND OLIGOPOLY

I

In the theory of a capitalist market economy price has always been one of the central problems, if not *the* problem. And, indeed, for a long time it seemed as if this problem at least had found a methodological approach and a solution which might require refinements, but which by and large could provide the main answers for the purposes of interpretation, economic policy and economic forecasting. Then, with more and more refinements and reconsiderations taking place in the 'twenties, doubts with regard to the general validity of the fundamentals of price theory began to grow and spread, until finally the theory of imperfect and monopolistic competition opened new paths for the treatment of the price problem.

These new developments were and are rightly hailed as great advances, which have enabled us to get a more realistic view of the pricing process and to include in our theoretical scheme a number of cases which could only be fitted into the competitive theory by making special assumptions, such as "friction," "irrationality," "non-economic factors," etc. But, great and important as was the advance, it soon turned out that even the new theory did not provide the tools that would cover satisfactorily all major aspects of the price-making process. Within a few years from the publication of Joan Robinson's and Edward Chamberlin's standard works, descriptive economists and economic field-workers complained that the new theory did not provide a sufficiently useful frame of reference for the factual material they had to investigate and to interpret.[1] The purpose of the present

[1] Thus, for instance, R. L. Hall and C. J. Hitch, after discussing the results of an inquiry into the pricing methods of thirty-eight firms, came to the conclusion that "these considerations seem to vitiate any attempts to analyse normal entrepreneurial behaviour in the short period in terms of marginal curves" ("Price Theory and Business Behaviour," *Oxford Economic Papers*, May 1939, p. 32). Or, Professor Walton Hamilton, in introducing several industrial case studies carried out for the U.S. Cabinet Committee on Price Policy, says: "As the world is not all black and white, so industry cannot be set down in terms of an antithesis between competition and monopoly. . . . To set cases down along a straight line that moves from monopoly through duopoly and oligopoly to competition pure and undefiled, and to measure competitive forces by the relative number and size of sellers and buyers, is to make hypothetical economic phenomena the subject of mathematical exercises . . . the result is not a picture of pragmatic reality called industry" (Walton Hamilton and others, *Price and Price Policies*, New York, 1938, pp. 22–23).

article is to investigate the reasons for these shortcomings and to indicate some steps which might help price theory to cover some of the "irregular" cases more successfully and more systematically.

II

The great power and attraction of the neo-classical competitive price theory lay in its simplicity and determinateness. This determinateness was due to the fact that in a market of competitive small-scale enterprise, price is the outcome of impersonal forces. Demand and cost conditions could be assumed as given—at least for a single industry—and outside the control of any single firm. If, in addition, the assumption was made that firms could enter and leave the industry freely, and would try to maximise profits, then a point of price equilibrium followed with the logical necessity of a physical law. And, indeed, it was the natural sciences which provided the main signposts for the choice of terminology (stable and unstable equilibrium, the pull of the market forces, elasticity of demand and supply) and of method (mathematical approach, predominantly mechanistic and static cause—effect relationships). Quite rightly, therefore, this theoretical approach has been characterised as "value mechanics." [1]

There is no doubt that this theory was a satisfactory approach to an explanation of the price problem in the typical mid-nineteenth century market. There is also no doubt that it is still a very useful model for some of the present-day markets. But at the same time it became increasingly clear that with modern trends towards large-scale enterprise, product differentiation, advertising and trade agreements, the competitive price analysis lost much of its force. Of course, Marshall, Edgeworth and their contemporaries were aware of the existence of imperfect competition, but they treated such cases largely as exceptions. And the one case they really dealt with in detail—the pure monopoly case—is to some extent an economic monstrosity, because, strictly speaking, a pure monopoly never exists in a world full of substitutes.

Thus it was not until the early 'thirties that a new theoretical framework was created which allowed for the inclusion of the now typical non-competitive markets. The main methodological change was that price was no longer regarded as the sole outcome of impersonal market forces dictating a unique solution to the individual firms, but that it was realised that under imperfect

[1] E. G. Nourse, "The Meaning of 'Price Policy,'" *Quarterly Journal of Economics*, Feb. 1941, p. 205.

competition the firms themselves had a certain amount of freedom of action with regard to price, the nature of the product and selling expenditure. The consequence was that analysis shifted from the industrial supply and demand curves to the cost and demand conditions of the individual firms, and that price—or rather a price structure—was explained in terms of the adjustment of the firms to different and changing market situations. This meant that the analogies drawn from the world of mechanics became less applicable. Some of the new ideas, such as the "organic growth" of a firm or the survival of the most suitable business form, rather pointed to a certain affinity with biological thinking, and indeed biological reasoning and biological terminology (price environment, conditioning, ecology) found their way into economic theory.[1]

This change in price theory meant a great advance, in so far as it included a vast number of cases in the main theoretical body, which were formerly regarded as "exceptions" and had to be explained by additional factors. At the same time, with its greater scope, price theory lost some of the simplicity and determinateness which it possessed under the competitive approach. With the consideration of product differentiation, price discrimination, and advertising, "industry," "commodity," "cost" and "price" lost their exactly definable meanings, and it seemed as if the new theory would no longer be able to offer any exact solution of an "equilibrium price." This in itself need not be very tragic if the loss in simple determinateness is compensated by a greater relevance of the theory.[2] Nevertheless the strong tradition of price theory centring round a definite long-term "equilibrium price" made any idea of indeterminateness so abhorrent to the "father," and even more to the "mother," of imperfect competition theory [3] that most of their analysis was centred on those cases where determinate solutions in the mechanistic–biological sense could be most easily achieved. That is, their typical case deals with the market situation characterised by many small producers, product differentiation and free entry, which sets very definite limits to the freedom of action of the individual firm. A determinate solution is achieved by making the impersonal market

[1] See E. G. Nourse, *op. cit.*, p. 182.

[2] Not all economists will subscribe to this view. Thus, for instance, J. R. Hicks, in his *Value and Capital,* justifies his unrealistic assumption of perfect competition by pointing out that this is the only way of saving something from the threatened wreckage of economic theory (p. 84).

[3] I hope Professor Chamberlin and Mrs. Robinson will not object to this spiritual relationship.

forces the very powerful factor, and restricting the independent action of the firm to an adjustment to these forces—an adjustment which will be unique on the basis of profit maximisation (and survival in the case of the marginal firm).

This is, of course, a very important addition to the perfect competition model, and a useful frame of reference when we try to explain price in many of the present-day markets, particularly in retailing, but also in some small-scale industries. But, again, what can be regarded as the established body of "monopolistic competition theory" does not cover the whole field of price formation. In particular, it badly neglects the case where a small number of powerful firms compete with each other, the action of each exerting a marked influence on the position of all the others, and each of them not only adjusting itself passively to a "given" market situation, but capable of actively changing that market situation. This neglect of duopoly and oligopoly problems [1] is the more regrettable as recent investigations have shown that oligopoly is by no means an exception, but that the most typical case in industry is probably monopolistic competition, with a considerable admixture of oligopoly.[2] Indeed, the reader of the classics of monopolistic competition must be left with the impression that the problem of monopoly with which our society is faced is predominantly created by the small grocer down the street rather than by the big steel firms.

III

To say that duopoly and oligopoly problems have been neglected does not mean that there have not been frequent attempts towards their theoretical solution. But it seems to the writer that these attempts—in contrast to much of the descriptive literature on this subject—have been hampered by being too much influenced by the models of perfect and monopolistic competition, and "pure" monopoly. Yet neither of these theories can be expected to form a sound basis for the study of duopoly and oligopoly prices.

[1] The neglect is particularly noticeable in Mrs. Robinson's book. Professor Chamberlin devotes some space to these problems, but they are definitely relegated to a secondary place, and he tries hard to formulate his additional assumptions for the oligopolistic case in such a way as to obtain a determinate equilibrium price similar to that of "pure" monopolistic competition. A good critical review of the unsatisfactory treatment of the oligopoly problem in Robinson's and Chamberlin's works can be found in R. Triffin, *Monopolistic Competition and General Equilibrium Theory*, Chs. I and II.

[2] See R. L. Hall and C. J. Hitch, *op. cit.*, p. 29.

On the whole, we can divide the theories dealing with duopoly and oligopoly into two groups : [1] those presenting a determinate solution and those stressing the indeterminateness of the problem. The determinate solution, in turn, can be reached in two ways. Either it is assumed that the oligopolists do not take into account the effects of their action on the policy of their rivals, as in the famous Cournot and Bertrand solutions ; or these effects are recognised, but a determinate solution is reached with the help of additional assumptions. The first type of approach is absolutely valueless, because it only solves the oligopoly problem by removing from the analysis its most essential differentiating aspect : the oligopolists' consciousness of their interdependence.

Those who take into account this interdependence are free from this fundamental mistake. But in spite of this, their theories do not advance much towards a better explanation of reality, because in their desire to reach determinate solutions within the traditional framework of price theory they adopt additional assumptions which are too articificial.[2] In particular, these theories are all based on the assumption that the oligopolists—while recognising that their price activities will call forth reactions from their rivals—acquiesce in the permanent nature of the industry's structure. But since it is doubtless one of the distinguishing characteristics of duopoly and oligopoly that the rival firms can *actively* influence and change the market situation, these theories, too, fail to provide a theoretical framework for the interpretation of reality.[3]

In a certain way, therefore, the writers who stressed the indeterminateness of the problem made an important step in the right direction. For they recognised that the reduction of producers to a small number meant that the market situation was no longer the " natural " price determining force of perfect competi-

[1] A good summary of the more important theories can be found in E. H. Chamberlin, *The Theory of Monopolistic Competition*, Ch. III and Appendix A.

[2] " The unreal atmosphere which surrounds our current theories of oligopoly may be ascribed to the fact that the assumptions are too often chosen for their analytical convenience, rather than for their actual relevance to the real world of to-day " (R. Triffin, *op. cit.*, p. 78).

[3] Thus R. F. Kahn, who amongst this group of writers makes perhaps the most serious attempt to get away from the unrealistic flavour of earlier theories, has still to depend for his solution on a qualifying statement of this sort : " I imagine my firms to be searching, by means of experiment or of trial and error, for the most profitable price and output—but not for more than that, not for the most profitable line of reaction to a change in a competitor's behaviour " (" The Problem of Duopoly," ECONOMIC JOURNAL, March 1937, p. 14). In this way the important problem of major changes in price and output policy directed towards a fundamental change in the market situation simply drops out of the picture.

tion theory nor the strictly limiting price environment of monopolistic competition. They realised that under such conditions the firms become active agents which have the power to change those very market factors on which the determinate theories had to rely for their solution.

But while thus the increasing acceptance of the indeterminateness of the problem was an advance towards a more realistic treatment of the subject, it was also a retreat from the former belief that price theory could be sufficiently developed to deal with all possible market phenomena. Indeed, the majority of these writers, once they have shown the inadequacy of the determinate solutions, take up an almost nihilistic attitude towards the theory of duopoly and oligopoly. They may, like Chamberlin, just add a short list of "uncertainties" to an artificial, determinate solution; [1] or they may deny the possibility of a general theory covering industry under oligopolistic conditions and substitute for it voluminous case-studies describing the behaviour pattern of particular industries; [2] or oligopolistic industry is just viewed as a chaotic mess where practically anything may happen, and about which economic analysis has very little to say.[3]

But, surely, the recognition of indeterminateness should have been only the first step towards building up a more adequate price theory for duopoly and oligopoly conditions. For the statement that there is no determinate solution to the problem can only be a relative one. It can only mean that the question cannot be suitably solved *within the framework of existing price theory*, just as the question of the monopolistic competition price could not have been suitably solved with the industrial demand and supply curves of perfect competition theory. But there can be no absolute and inherent indeterminateness in this problem, any more than in any other of the questions facing natural or social science. It has been said quite rightly:

> "No doubt, there is a sense in which the solution is always determinate; it all depends on the number of variables that are considered. But it is clear that the variables that would have to be added to determine the solution might be of a very different type from the ones generally used by pure

---

[1] *The Theory of Monopolistic Competition*, 5th Ed., pp. 52–3.

[2] See, for instance, Walton Hamilton, *op. cit.*, p. 22: "There exists to-day a competition of big business as well as a competition of petty trade; but the ways by which the battles for custom go on are quite different. . . . As industry becomes the concern of human beings and of public policy, the way of its control descends from the absolute and the imponderable *to the concrete and specific.*" (Italics mine.)

[3] This view is most forcefully represented by H. von Stackelberg's *Marktform und Gleichgewicht.*

economics of the equilibrium brand. Such considerations as financial backing, political influence, prestige psychology, optimistic or pessimistic slant, enterprise or routine-like attitude in business, etc. may well play an overwhelming role in determining the solution." [1]

Economists have on the whole shied away from this problem of drawing up a wider and different framework which could deal with the oligopolistic cases, because the concepts and methods used for the other market situations would be of little use. In particular, the influence of analogies drawn from mechanics and biology—so fruitful in the fields of perfect and monopolistic competition respectively—must be discarded when we deal with powerful active agents like duopolists and oligopolists. If analogies have to be used (and they may be of considerable heuristic value), then they will have to be drawn from those spheres where writers deal with moves and counter-moves, with struggles for power and position—in short, from books dealing with the general aspects of politics, and military strategy and tactics.

This is by no means a new discovery. Not only has a military terminology found increasing acceptance in price theory (*e.g.*, economic warfare, price strategy, aggressive and non-aggressive price policies), but both theoretical and descriptive economists have pointed out the appropriateness of comparing oligopolistic price behaviour with this field of human activity. Thus, Professor Pigou, in his *Economics of Welfare*, refers to the resemblance between the mutual bluff under oligopolistic conditions and a game of chess.[2] Speaking of the motives influencing the actions of big corporations, Berle and Means come to the conclusion that "it is probable that more could be learned regarding them by studying the motives of an Alexander the Great, seeking new

[1] R. Triffin, *op. cit.*, p. 71. It is a pity that Mr. Triffin, after thus recognising the necessity for a different approach to the oligopoly problem, and after a very able criticism of the shortcomings of the leading oligopoly theories, does nothing to advance towards the formulation of a theory of price under such conditions. He restricts himself to a refined re-classification of market situations, making extensive use of cross-elasticities of demand which completely neglect those factors which are mentioned in the above quotation. The consequence is that in the Conclusion the reader is left uncertain whether, after all, economic theory, has anything to contribute to the problem of oligopoly. (". . . The way is now open for a different type of economics. Instead of drawing its substance from arbitrary assumptions, chosen for their simplicity and unduly extended to the whole field of economic activity, our theory may turn to more pedestrian, but more fruitful methods. It will recognise the richness and variety of all concrete cases, and tackle each problem with due respect for its individual aspects. More advantage will be taken of all relevant factual information, and less reliance will be placed on a mere resort to the pass-key of general theoretical assumptions"—p. 189.)

[2] *Op. cit.*, 1st ed., p. 233.

worlds to conquer, than by considering the motives of a petty tradesman of the days of Adam Smith." [1] The matter is put still more definitely in a recent article by Nourse :

> "While, of course, the conditioning environment imposes rigorous limitations on the price administrator's freedom of action in a capitalist society dedicated to 'free enterprise,' he devises and implements business plans in ways broadly similar to those of military command. A general must operate within the limitations of the terrain on which he fights and of the personnel and material at his disposal—to say nothing of meteorological conditions. But at the same time, much depends too on the strategy which he and the high command devise and the specific tactics by which he and his officers seek to carry it out. It seems appropriate, therefore, to discuss price policy in terms of business strategy and tactics." [2]

But while thus the need for a new methodological and conceptual framework for oligopolistic price theory is clearly recognised, no attempt is made to lay the foundation for such a theory. Nourse, in particular, after stating the necessity of a new approach in the clear way illustrated by the above quotation, largely spoils his case by urging more research into the thinking, prejudices, etc., of the entrepreneur in order to make possible a more proper analytical treatment of price policy.[3] But, surely, the peculiarities of price behaviour under oligopolistic conditions are not due to any peculiarities in the psychology of duopolists and oligopolists, but to the different economic environment in which they work. By all means let us have more research into the psychology of the business-man in all the various market situations, but the *distinguishing* feature of oligopolistic price theory cannot lie in additional psychological investigations, but in the provision of a framework which will show the actions of a "normal" business-man under the specific conditions of an oligopolistic environment.[4]

[1] *The Modern Corporation and Private Property*, p. 350.

[2] *Op. cit.*, pp. 189–90.

[3] *Op. cit.*, p. 199.

[4] A completely novel and highly ingenious general theoretical apparatus for such a solution of the oligopoly problem has been recently created by John von Neumann and Oskar Morgenstern in their book *Theories of Games and Economic Behaviour*. Unfortunately, at the time of writing this article I had no opportunity of obtaining a copy of this important book, and I had to rely on the very capable summaries given in the review articles by Leonid Hurwicz and Jacob Marschak in the *American Economic Review* (Vol. 35, 1945) and the *Journal of Political Economy* (Vol. 54, 1946), respectively (republished as No. 13 in the Cowles Commission Papers, New Series). Like this article, the book starts from the recognition of the inadequacy of the calculus and similar methods when dealing with the complex interdependence in oligopolistic situations. A completely new mathematical and conceptual apparatus is then constructed, which makes this interdependence, the possibility of coalitions and collusion, of bribery, etc., an integral part of the general theory. As the title indicates, the analogy from which inspiration is drawn is that of games. But it is recognised that the techniques developed in the book have also a bearing on optimum military and diplomatic

The oligopoly-theorist's classical literature can neither be Newton and Darwin, nor can it be Freud; he will have to turn to Clausewitz's *Principles of War*. There he will not only find numerous striking parallels between military and (oligopolistic) business strategy, but also a method of a *general* approach which—while far less elegant than traditional price theory—promises a more realistic treatment of the oligopoly problem. To write a short manual on the *Principles of Oligopolistic War* would be a very important attempt towards a new approach to this aspect of price theory; and the large amount of descriptive material that has been forthcoming in recent years should provide a sufficient basis for a start.

Any such attempt would, of course, go beyond the limits of a single article. All that can be done in this context, therefore, is to outline some considerations to which this approach gives rise.

IV

The first point that requires reconsideration when dealing with duopoly and oligopoly situations is the motive force behind price decisions. Profit maximisation has up till now served as the wonderful master-key that opened all the doors leading to an understanding of the entrepreneur's behaviour. True, it was always realised that family pride, moral and ethical considerations, poor intelligence and similar factors may modify the results built

---

strategies (which to me seem to have a closer resemblance to oligopolistic situations than chess, poker and similar games).

There is no doubt that Neumann's and Morgenstern's approach surpasses in generality, rigour and elegance of treatment by far anything that could be achieved on the lines suggested in the following section of this article. At the same time, this very generality and rigour set, at the present stage of development of their theory, very serious limitations to the application of their theory to the price problems of the oligopolistic world. Not only are certain assumptions introduced for the sake of obtaining a more determinate solution rather than for their relevance to the real world (*e.g.*, the introduction of " mixed strategies," and the neglect of the influence which *variations* in profits may have on price policy), but it also seems that considerable difficulties present themselves when an attempt is made to deal with cases that involve more than three persons. And, above all, the theory is, at present, exclusively static. But in no market situation is the dynamic aspect, the timing of price and output decisions, so important for an understanding of " what's going on " as in the case of oligopoly.

It seems to me, therefore, that while the further development of the " pure " theory expounded in *The Theory of Games and Economic Behaviour* may some day yield a very powerful tool for treating oligopolistic price problems, its present stage justifies the simultaneous exploration of the more modest and pedestrian paths indicated in this article. Their greater concreteness and their allowance for dynamic factors may give them a greater usefulness than a more general, " pure " theory can at present provide.

on the maximum profits assumption; but it was rightly assumed that these "disturbing" phenomena are sufficiently exceptional to justify their exclusion from the main body of price theory.

But there is another motive which cannot be so lightly dismissed, and which is probably of a similar order of magnitude as the desire for maximum profits: the desire for *secure* profits.[1] This motive has, of course, not completely escaped the attention of economists. But they usually thought they could subordinate this aspect of entrepreneurial behaviour to that of profit maximisation by simply postulating that it is *long-term* profits he is trying to maximise.[2] Since, however, uncertainty is an essential feature in this changing world, it is clear that the vague knowledge a firm possesses of its demand and cost schedules cannot extend far into the future. Any theory, therefore, which tries to explain price behaviour in terms of marginal curves derived from *long-term* demand and cost curves really by-passes the problem of uncertainty, and thus the very factor which gives rise to that desire for security which the theory tries to explain.

In fact, the reasons for the neglect of the security motive are not difficult to find. They are again due to the preoccupation of price theory with the cases where numbers are large—be it a perfectly or monopolistically competitive market—or where a complete monopoly exists; because in these cases the problem of security does not arise. For the absolute monopolist security against competitors is part of the definition; and for the small competitor, for whom the security question is a very urgent one, the market conditions are such an overwhelming force that he alone cannot do anything to safeguard his position. All he can do is to try to make full use of every opportunity as it comes up. Maximisation of (short-term) profits is, therefore, a legitimate generalisation for an explanation of price behaviour in the large-number cases.

But once we enter the field of duopoly and oligopoly this assumption is no longer sufficient. For here we find neither the safety of the single monopolist nor the impotence *vis-à-vis* his environment of the small competitor. Here is both the desire for achieving a secure position as well as the power to act on this desire. How is it, then, that in spite of the growth of oligopolistic elements, economic theory has been able to neglect this additional

[1] See A. G. B. Fisher, *The Clash of Progress and Security*, p. 159 and *passim*.

[2] An even more careful formulation of profit maximisation is "maximisation of the current value of the proprietorship interest in the firm" (*Cost Behaviour and Price Policy, A Study Prepared by the Committee on Price Determination for the Conference on Price Research,* National Bureau of Economic Research, 1943, p. 275).

motive from its basic assumptions and to rely exclusively on the maximisation principle? The reason for this lies in the fact that some of the most conspicuous actions motivated by the desire for maximum security are identical with actions aiming at maximum profits. Thus, above all, the outstanding trend towards monopolistic agreements can and does serve both ends, as has been clearly shown in the New Deal and other Government policies which, while aiming at increasing the stability of certain industries, soon enabled these industries to increase their monopoly profits.

There are other examples where the desire for profit maximisation and security maximisation converge on one type of action—*e.g.*, the pressure for tariffs, the desire for direct access to the political machine, etc. In all these cases the behaviour of firms could be (so it seemed) satisfactorily explained by the "monistic" profit maximisation approach. But there are other cases where the two motives lead to conflicting patterns of behaviour. Where profit maximisation demands prices fluctuating with every change in revenue and cost conditions, security maximisation may demand rigid prices; while profit maximisation should tend to create firms of optimum size, security considerations will favour the oversized firm; again, where we should expect reserve funds to be invested in response to expected returns, we may find their practically unconditional reinvestment in their own firm.

All these divergences from "expected" behaviour have, of course, been noticed, not only by descriptive, but also by theoretical economists. But the latter have usually tended to relegate such "exceptions" into footnotes with a passing remark on security and long-term considerations, or simply to dismiss them as irrational behaviour.[1] This *impasse* can only be overcome, and oligopolistic price theory can only be developed, if we recognise that under this market situation the security motive must be given the same pride of place as has been occupied by the profit maximisation principle for such a long time.

As soon as we acknowledge that a "struggle for position" is taking place side by side with the attempt to make the best of

[1] Thus, for instance, R. F. Harrod seems to regard the widespread adoption of the full cost principle, as revealed by Hitch's and Hall's investigation, as at least "to some extent irrational" ("Price and Cost in Entrepeneur's Policy," *Oxford Economic Papers*, May 1939, p. 3). But, as we shall see below, this principle loses its irrational flavour once we recognise the importance of the security motive. Of course, even if business behaviour were *really* irrational, this would not serve as an excuse for the neglect of such behaviour. Irrationality would then have to become one of the premises of oligopolistic price theory. But the writer believes that the existing evidence does not point towards such a necessity.

every position that is held at any special moment,[1] many price phenomena which proved awkward in the past will readily fall into an appropriate niche. It will also mean that we have to consider price as a dynamic phenomenon. To say this does not, of course, mean that we must expect oligopolistic price to fluctuate more than the competitive static equilibrium price. On the contrary, as we shall see presently, oligopoly more than any other market situation makes for rigid prices. But what it does mean is that even the most wildly fluctuating competitive price reaches at every given moment a static equilibrium, determined by the then existing supply and demand conditions; while oligopoly prices have to be interpreted not only in terms of factors that are co-existing with them, but also in relation to future changes at which the price policy aims. Thus care has to be taken to see such price policies in their proper setting, past, present and future each given their proper weight.[2]

The background to oligopoly, then, is—as we said—a struggle. But this is, of course, not a continuous struggle. On the contrary, most oligopolists will try to keep such struggles, costly as they are, at a minimum. Their normal desire will be to entrench themselves in as secure a position as possible which will enable them "to hold what they hold," and—should an opportunity arise—to launch an offensive into rival territory. Price policy will take a pivotal place in this entrenchment policy. A price will have to be quoted that will allow the oligopolist to hold his own both *vis-à-vis* existing and potential rivals and *vis-à-vis* the consumers. This means that in "normal" periods the price must not be so low that it provokes retaliations from the competitors, nor so high that it encourages new entrants,[3] and it must be within the range which will maintain the goodwill of the customers [4]—*i.e.*,

[1] That is, within the limits set by the strategic plan, short-term profits will be maximised at any given time according to the principles worked out by the current theory of value. Atomistic competition (both perfect and monopolistic), becomes then a special case of the oligopoly theory—viz. where the individual firm has no powers of strategic planning, and where the action of the firm is reduced to pure profit maximisation.

Since the principles of profit maximisation have been fully developed elsewhere, and will be known to the reader, this article restricts itself to a discussion of the strategic aspects of the oligopolist's behaviour.

[2] "There is usually some element in the prices ruling at any time which can only be explained in the light of the history of the industry" (Hall and Hitch, *op. cit.*, p. 33).

[3] These are the dominant considerations in the conservative price policies of the oligopolists. See Hall and Hitch, *op. cit.*, p. 21.

[4] This will set a definite limit in the case of the so-called "conventional" or "charm" prices. See C. Clive Saxton, *The Economics of Price Determination*, p. 19.

will maintain a protection against aggressive policies of the rivals.

Within these limits, and the minimum which he regards as essential for his continued stay in the industry, the oligopolist will try to quote that price which will promise him maximum profits. The freedom he has in the choice of his base price will depend on the relative strength of the factors mentioned above. In order to make his continued existence possible and worth-while, he will at least aim at a price which will cover his expected costs. Thus cost calculations become the basis from which oligopolistic price-fixing starts. To these costs will be added a profit which will be largely determined by the strength of the oligopolist's position.

If this position is weak and the obstacles for newcomers fairly small—*i.e.*, if we have monopolistic competition with oligopolistic elements—then the percentage added to costs will be determined by " normal " or " conventional " profits, because the fear of encouraging new entry will be predominant. Thus the " full-cost principle " which so startled Hall and Hitch in their inquiry, because it seemed so opposed to the principle of profit maximisation,[1] is a perfectly logical outcome of the market situation with which they were primarily concerned—monopolistic competition with an admixture of oligopoly—once we give due weight to the security considerations. When, however, the position of the oligopolists or duopolists is more powerful and not easily invaded they will not keep to the full-cost principle, but will add varying and " abnormal " profit percentages to their costs [2] in proportion to their assumed strength, or they will fix prices without reference to costs altogether.[3]

Since, therefore, the quoted price is not the mechanic result of impersonal market forces nor the essential adjustment to a constantly changing environment, but the expression of a strategic policy, it is clear that there will be a tendency for its rigid maintenance. The propagandistic value of declaring a position as a stronghold will soon evaporate if this stronghold is constantly shifted. The existence of a stable price instead of a fluctuating one will deter rivals from starting panicky price-reduction campaigns, and it will not induce newcomers to enter a booming market; consumers, too, are often supposed to prefer fixed prices.[4] Thus, the desire for building up a strategic stronghold

[1] *Op. cit.*, pp. 18–19.

[2] Saxton, *op. cit.*, p. 125.

[3] See, for instance, the price strategy of the American tobacco industry's giants in A. R. Burns, *The Decline of Competition*, pp. 225–9.

[4] Saxton, *op. cit.*, p. 139.

will—within certain limits—neutralise the profit maximising principle of changing price with every change in demand or costs.[1] Even a price change of one's rivals may be ignored as long as one's *relative* position in the industry is not affected.[2]

It follows : *Price rigidity is an essential aspect of "normal" oligopolistic price strategy.*

Since, however, this attempt towards a price rigidly fixed for a longish period takes place in a world where changes are constantly taking place, there is a danger that inflexibility may ultimately lead to the disaster which the price maintenance policy tried to avoid. If one holds too uncompromisingly to a fortification, however important it may seem, while circumstances change, not only that fortification, but many more strategic advantages may come down. In order, therefore, to reduce the rigidity, which the decision to stick to the fortress of the quoted price introduces, this price is surrounded by a variety of minor weapons which permit a more elastic policy without giving up the basic position. These additional weapons, such as changes in quality, credit and discount arrangements, salesmanship, etc.,[3] can be used to adjust the firm to some extent to changes in the "external circumstances" particularly in demand and costs. They also serve as tools for tactical manoeuvres in the enemy's territory, testing his strength without provoking a major conflict; or to provide a "defence in depth" against inroads from the rivals, if it is deemed possible to hold the basic position.

It follows : *Oligopolistic circumstances lead to a multitude of conditions surrounding the quoted price.*

As long as profit maximisation is regarded as the sole motive force, price can indeed be regarded as a unique expression of this desire. But the struggle for a safe position has many different aspects, which often conflict with each other, and the oligopolistic price can therefore often only be understood as a compromise between conflicting tendencies.

The struggle for position involves not only the sales and costing departments—which alone are considered in traditional price theory—but also the legal, technical (patent rights), advertising, labour (very often the oligopolist will also be an oligopsonist), and other departments. They all will desire certain price–output

[1] See Hall and Hitch, p. 33; Burns, *op. cit.*, Ch. V; and the growing literature on price rigidity.

[2] *Cost Behaviour and Price Policy*, p. 278.

[3] See Nourse, *op. cit.*, pp. 193–4; and the chapter on "Non-price Competition" in Burns, *op. cit.*

decisions which would help them to establish a situation which from their different points of view seems to promise greater security. Prices are therefore increasingly the outcome of the different pulls of the conflicting interests of various departments.[1] And just as in the age of " combined operations " the actions of the infantry cannot be properly understood if one does not take into account the complementary actions of naval and air forces, so in oligopolistic circumstances the picture of the " price-fixing entrepreneur " has to give place to that of the price-fixing board of the heads of several departments.

It follows : *Under oligopoly the price tends to be the outcome of a variety of conflicting tendencies within the firm, which have all to be taken into account if a full explanation is aimed at.*

It will have become apparent from the discussion up to this point that the idea of a struggle is a vital aspect of the oligopoly problem. Yet all the time we have talked of a tendency towards rigid prices and rigid relative positions as the characteristics of the " normal " oligopoly situation. But there is no contradiction between these two aspects. It is the continuous existence of a *potential* struggle for a " new order " which induces the oligopolistic firm to follow the peculiar " normal " price policy which we have outlined in previous paragraphs.[2] The " normal " periods may then extend for very long stretches of time, and actual price wars—violent changes in price policy—may occur only at rare intervals. But because their possibility really dominates the situation, they must take an important place in the study of oligopoly price.

A " quiescent " price policy [3] may come to an end either through external circumstances—what we might call " changes in terrain "—or through internal stresses, *i.e.*, attempts towards a redistribution of relative shares among the rival firms. " Changes in terrain " refers to alterations in costs, demand or other conditions (affecting all the oligopolistic firms) of such decisive importance that even after full use has been made of the price-surrounding weapons (discounts, retarded delivery, etc.) the habitual price policy becomes obviously untenable. Two cases become at once apparent : one, where the terrain becomes less favourable and " closes in " on the quoted price, and the other, where new

[1] See *Cost Behaviour and Price Policy*, p. 43.

[2] As an American oil producer put it : " If you start real competition . . . you are up against a system of reprisals that rather deprive you of a desire to try the experiment more than once." (Quoted in F. A. Fetter, *The Masquerade of Monopoly*, p. 52).

[3] This term is taken from Saxton, *op. cit.* See pp. 129 and 133.

territory opens up offering room for expansion. Each of these cases will lead to a different pattern of price policy.

Take first the case of a deterioration in circumstances, such as a considerable rise in cost or a sharp fall in demand. Soon it would become obvious for several firms that a significant upward or downward revision in the base price would be in the best interests of profit maximisation. At the same time, the fear that rivals will not follow suit (in case of an upward change), or will more than follow suit (in case of a downward change),[1] and that thus the readjustment may deteriorate into a price-war for changed relative positions, will tend to prevent the revision from taking place. Ultimately, however, the external stresses may prove too strong for such a stubborn hold-on policy. The outcome may then be an inter-rival price war, if some of them feel prepared for such a trial of strength. With this case we shall deal below. More frequently, however, the desire for a show-down is not very strong in hard times, and the withdrawal to new, more appropriate price positions is likely to take place concurrently, co-ordinated by tacit or open agreement. Therefore the well-known growth of price-fixing agreements in depressions.

A widening of the terrain for all the oligopolists within an industry will occur when technical progress opens up revolutionary changes in cost through large-scale production methods and/or when by a significant change in price sales can be pushed forward to large numbers of previously untouched customers. This is a situation which is typical for new and expanding industries, producing semi-luxuries (*e.g.*, motor-cars), after the first stage of technical and sales pioneering has been passed. Here the desire to proceed to new, lower price positions—induced by the profit maximisation principle—will not be held back by the fear of an internal war. For here it is not a question of invading the rival's territory, but of rushing into new, unoccupied territory before the others have taken possession of it. Thus the action demanded by the maxim of maximum profits is in this case reinforced by strategic considerations, and the price pattern for such new, expanding industries is in fact one of strong price competition, followed by a rigid price policy after the new territory has been divided up and further expansion would involve an attack on rival strongholds.[2]

Finally, a quiescent price policy may come to an end, and an aggressive policy take its place, because some of the oligopolists

[1] See Hall and Hitch, p. 22.

[2] See *Cost Behaviour and Price Policy*, p. 281.

may attempt to improve their position at the expense of their rivals. The desire for this will always be present. For such a move would not only reduce insecurity—the danger of an attack from the others—but it would also increase future profit opportunities, even though immediate profits would be reduced. But the cost of such a struggle, the uncertainty of its outcome, and the harmful effects it may have on other aspects of the security drive (*e.g.*, public opinion), will make the actual outbreak of hostilities the exception rather than the rule. Nevertheless, such struggles are bound to occur from time to time. They may develop automatically, wanted by nobody in particular, out of the unsettling influences of the external factors mentioned before; or they may be the outcome of a well-prepared strategic plan of an "aggressive" firm.

In any case, whether a firm has aggressive designs or just wants to be prepared against an attack, the oligopolistic situation will force considerations on the firms which do not arise under either atomistic competition or pure monopoly. These considerations will not be predominantly concerned with price policy, but since they have an influence on the structure and costs of the firm, they, too, have to be brought in when oligopolistic price is examined.

Preparedness for a price war means above all to be able to continue in existence as long as possible in circumstances where price has no relation whatsoever to the realities of a situation, but is exclusively used as a weapon. To survive such a period demands a powerful position with plentiful resources. The actions taken to obtain such a position will again often conflict with those which we would expect if profit maximisation alone were taken into account. The first and foremost aim will be financial strength. Thus size will be desired for its own sake, independent of technical considerations. The indications in American studies that mergers have sometimes led to over-sized firms would be quite intelligible on these grounds. Indeed, once we add the security motive to the profit maximum motive, the "optimum size" of the firm—as seen from the entrepreneur—will usually be larger than that indicated by current-value theory. Again, the reinvestment of profits in the concern irrespective of the yields obtainable elsewhere, while being "irrational" from the maximum point of view, are easily explained as a security measure.

But size and reserves are not enough. Security must be carried forward and backward. Forward, by "immunising" consumers more and more against rival invasion through massive

advertising. Oligopolists fail to adjust their advertising expenditure nicely to the marginal equilibria expected by the text-books, not because they lack the necessary information (this is, of course, also important), but because their advertisement is just as much a preparation for the great battle as it is an attempt at higher immediate profits.

Security is carried backward by the attempt to reduce the pressure which may threaten one's position in dangerous times from raw material and finance supply sources. The bigger oligopolists will guard against this danger either by vertical integration or at least by interlocking directorates and shareholdings. The enormous growth of interlocking directorates in recent decades—so conveniently overlooked by current theory—is indeed an essential outcome of the spreading of oligopolistic market situations. Here, again, it should be noted that our framework gives a logical explanation for developments which run counter to the principles of current theory, in this case the principle of growing specialisation.

In these and other ways [1] the fear of the coming price war or the wish to provoke one will *all the time* impress a behaviour pattern on oligopolistic firms which cannot be understood by interpreting it in terms of profit maximisation only. The actual price wars, as has been mentioned before, are not likely to occur very frequently. But when they occur, they can take on very violent forms, and price-cutting may be carried to extremes. The lower limit of short-term marginal prime costs of perfect competition fame will not be active, because here again we do not witness a maximisation of short-term profits, but a struggle for position—a fundamentally altered position in this case. The tactics and the duration of such a war will be decided predominantly by objective circumstances—*i.e.*, the strength and position of the rivals—but also to a minor extent by subjective considerations, such as their expectations with regard to each other's actions and their resistance to wars of nerves.

The " ideal " aim of a price war is, of course, complete victory —the annihilation of the adversaries. Very often, however, this may prove impossible or too costly. In such cases the superior power may be satisfied with a position which will allow him in the future to decide his strategic policy without having to pay too

[1] As one should expect in a warlike atmosphere, the desire to know what is happening in the hostile camp is often very strong. As one business-man put it in an answer to a questionnaire : " No agreement in this trade, but firms were all anxious to know what their rivals were doing " (Hall and Hitch, p. 43). This, too, may sometimes lead to interlocking directorates.

much attention to the reactions amongst his rivals.[1] Needless to say that this pattern of price leadership will not only occur after a price war. The mere fear of such hostilities may bring about the same result.[2]

> It follows : *Price wars, while tending to occur infrequently, are a dominant feature of the oligopolistic situation. They may be caused by external or internal factors. The preparation for them, aggressive or defensive, leads to the adoption of measures which are peculiar to oligopoly. The outcome of a successful price war or the mere threat of one may be the complete annihilation of a rival's independence or the reduction of his status to that of a price follower.*

But the quest for more secure and more advantageous positions does not confine itself to the traditional field of economic theory. The water-tight separation of the business-man's personality into that of an " economic man," a " political man " and probably several other men, is a legitimate simplification under atomistic competition and even for small oligopolists, where any isolated political action they may take cannot possibly have any appreciable effect on their market position. The market situation and the price of the commodity can, therefore, be quite well explained by concentrating attention on the purely economic activities of the firm.

But when we come to the big oligopolists, who *do* have the power to change the market situation by their own political action, then the separation of the economic from the political must necessarily result in a very incomplete picture, which will not suffice for giving us a reasonable explanation of oligopoly price. Indeed, what is, for instance, the logic of some of the recent American economic literature which tries to evaluate in great detail the effects on price and output of the huge selling expenditure of big corporations, and yet never even mentions the sums spent for exactly the same aims in the lobbies ? [3] For the gap

[1] " The typical situation in British industry seems to be one where oligopolistic elements are of most importance, although there may be a large number of smaller firms engaged within or upon the fringes of the industry, whose price-policy is entirely dependent upon that of the price-leader " (Saxton, *op. cit.*, p. 168). For American conditions, see Burns, *op. cit.*, Ch. III.

[2] " A ' follow-the-leader policy ' takes the place of the older, cruder, cut-throat competition and works just as effectively. . . . This docility of all the so-called independents in following the leader may be seen, on more careful scrutiny, to be the result of competitors' fear of cut-throat competition, more artfully and sparingly exercised than in the old days. . . ." (Frank A. Fetter, *The Masquerade of Monopoly*, p. 51).

[3] See Anna Rochester, *Rulers of America*, Ch. VIII, and the literature quoted there.

that divides selling expenditure from political activities is methodologically much smaller than the one that divides the former from production costs proper.[1]

The fact is that when we enter the field of rivalry between oligopolistic giants, the traditional separation of the political from the economic can no longer be maintained. Once we have recognised that the desire for a strong position ranks equally with the desire for immediate maximum profits we must follow this new dual approach to its logical end, if we want to construct a relevant theory. Only by acknowledging the importance of the political factor can we account for such trends as the increasing appointments of people who have "good connections with the government," of first-rate experts as political advisers to great concerns, etc., trends, which on a purely economic interpretation can only be regarded as "irrational" and inexcusable waste. Explicit recognition of the political aspects of the oligopolistic struggle will also help applied economists to make their advice more significant and more immediately useful. It will help them to recognise the absurdity of the conclusions of a theorist like Stackelberg, who, as an apologist of the Fascist corporate State, regards this political form as the only means of bringing order into the chaos of oligopolistic indeterminateness.[2] For they would realise at once that Fascism, far from being an independent arbiter in the oligopolistic struggle, has been largely brought into power by this very struggle in an attempt of the most powerful oligopolists to strengthen, through political action, their position in the labour market and *vis-à-vis* their smaller competitors, and finally to strike out in order to change the world market situation in their favour.[3]

And this brings us, finally, to the most violent aspect of the oligopolistic struggle: the attempts of the biggest oligopolistic groupings to regroup their forces on a world scale. It is now more than thirty years since Hobson and Lenin drew attention to the necessary growth of imperialism with the increase in the friction between huge oligopolies (or "rival monopolies" as they called it). Yet in spite of the large amount of factual material that has

[1] I wonder how some of the "pure" economic theorists would deal with the advertisements now appearing in the press against the nationalisation of certain industries. Are they to be included in selling costs—for advertisements they obviously are—or are they to be neglected because they represent political action?

[2] See his *Marktform und Gleichgewicht.*

[3] The autobiography of the big German industrialist Fritz Thyssen will be found very revealing on this point.

been accumulating giving empirical support to this view,[1] nine out of ten writers on the oligopolistic market situation manage to avoid any reference whatsoever to imperialism. The consequence is not only that a full explanation of oligopoly prices—generally or in particular cases—becomes impossible, but also that students of modern monopoly theory tend to become enormously worried about the excess capacity of the small oligopolistic shop, while they do not even realise the danger of a clash between the big world oligopolies.

We have, therefore, to conclude that a theory of oligopoly can be complete and relevant only if its framework includes *all* the main aspects of the struggle for security and position. Like price wars, open imperialist conflicts will not be the daily routine of the oligopolistic market. But, like price wars, their possibility and the preparation for them will be a constantly existing background against which current actions have to be understood. And the imperialistic aspects of modern wars or armed interventions must be seen as part of a dynamic oligopoly theory just as much as the more traditional " economic " activities like cut-throat pricing, full-line forcing, boycotting, etc. For there is no fundamental difference between the two.

> It follows : *The oligopolistic struggle for position and security includes political action of all sorts right up to imperialism. The inclusion of these " non-economic " elements is essential for a full explanation of oligopoly behaviour and price.*

V

In an interesting article, written on the occasion of the centenary of Marshall's birth,[2] Mr. Shove pointed out how modern conditions have largely destroyed the applicability of Marshall's price analysis to the world of to-day.

> " It is the territory between atomic competition and absolute monopoly that the pure theory of the book (the *Principles*) does not cover at all satisfactorily. And it is precisely this territory which has been so greatly enlarged by the development of the joint-stock company and the advantages (or

[1] There is a lot of useful information in the reports of United States Senate Commissions and of the Temporary National Economic Committee. (See for instance, the Report of the Nye Committee on the Munitions Industry, or the T.N.E.C. Monograph No. 26 on *Economic Power and Political Pressure*.) This, and a large amount of other relevant material, has been admirably presented by Robert A. Brady in his *Business as a System of Power* (Columbia University Press, 1943).

[2] " The Place of Marshall's *Principles* in the Development of Economic Theory," ECONOMIC JOURNAL, December 1942. It was that essay which provided the first stimulus for the present article.

necessity) of large-scale control. The conflicts of interest within the firm; the interpenetration of interests between firms through interlocking directorates, shareholdings, subsidiary concerns and the like; the domination of an industry by a few large units; the intermixture of public and private control as seen in the various types of semi-public corporation and of regulating boards and devices; these are the features of modern industrial structure which find little or no place in the analytical framework of the *Principles*." [1]

The newer developments in price theory have on the whole kept to this Marshallian tradition. Though they have introduced a large number of theoretical refinements it is nevertheless true that " the general theory of value and distribution as a whole has scarcely advanced at all into that part of the field at which the *Principles* stopped short. It is still concerned almost exclusively with the case of pure monopoly on the one side and on the other with atomic competition, ' perfect ' or ' imperfect.' " [2]

That the gap has not been filled is partly due to the force of tradition; partly, as Shove points out, to the increasing separation of analytical and descriptive work and the itch for precise results. But the undiscovered territory must be entered by economic theory if it is not to lose all touch with reality. The tentative first step outlined in the previous section certainly looks very crude and pedestrian when compared with the polished elegance of modern value theory. But it is tentative steps of this sort which economic analysis must undertake to-day. For " it is better to be vaguely right than precisely wrong." [3]

K. W. ROTHSCHILD

The University,
Glasgow.

[1] *Ibid.*, p. 320.
[2] *Ibid.*, p. 322.
[3] Professor Wildon Carr, quoted by G. F. Shove, *op. cit.*, p. 323.