READINGS IN INDUSTRIAL ECONOMICS

VOLUME TWO

READINGS IN INDUSTRIAL ECONOMICS

edited by

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VOLUME TWO

PRIVATE ENTERPRISE AND
STATE INTERVENTION

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Preface

Industrial economics only too frequently is treated as a descriptive, institutional, even anti-theoretical discipline to which the lesser able and the under-motivated students of economics are directed as a substitute for a vocational course in business studies. It is the principal objective of these *Readings in Industrial Economics* to counteract this impression and to present the discipline as intellectually stimulating and theoretically based, designed to make use of advanced micro-economic theory in the analysis of important problems of public policy. The introductions to both volumes emphasise the need both for a clearly formulated methodology as a basis for positive and for normative analysis, and for reaching out to the testing of hypotheses from a really sound theoretical foundation – an approach which has suffered much in recent years owing to the widespread misuse of standard econometric techniques.

It is usual to justify collections of articles as a means of supplementing standard textbooks in the discipline and of avoiding log-jams in the undergraduate and postgraduate libraries. In this case, there is a more fundamental justification, namely that there is no textbook in industrial economics currently available suitable for advanced undergraduate and postgraduate students. Such a textbook has been commissioned by Macmillan and is presently under preparation by Michael A. Crew of the University of Southampton, and myself. Publication is scheduled for 1973. In the meantime, these volumes provide a foretaste of my thinking in the field and should serve for many years to come as a useful, if not an essential, supplement to our textbook.

I am deeply indebted to all the authors and publishers who so willingly co-operated in giving their permission for their material to be reprinted. Specific acknowledgements and identifications of the original sources are to be found at the

beginning of each contribution, whilst a short biography of authors is to be found at the end of each volume. In addition, I should like to thank all my students, undergraduate and postgraduate, who attended my courses in industrial economics during 1967–70 at the University of Kent at Canterbury and who contributed so much to my understanding of the subject. I am deeply grateful also to those of my colleagues and friends who directed my attention to the more fruitful aspects of industrial economics, and most especially to R. A. Cooper, M. A. Crew, H. G. Johnson, Michael Jones-Lee, A. T. Peacock, E. G. West, and Jack Wiseman. Most of all, however, I should like to thank my wife Marjorie, without whose help and encouragement these volumes would never have seen the light of day.

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Introduction

The organization of economic activity through voluntary exchange – the hallmark of the private enterprise system with which this volume is principally concerned – in no way precludes an important role for government. Even the foremost proponents of free-enterprise capitalism readily concede this point. For there is a general consensus that government intervention is necessary not only for the defence of the realm, but also for the maintenance of law and order, and for the definition, interpretation and enforcement of property rights, as well as for the provision of a stable monetary framework, without which voluntary exchange must be severely impeded. Of course, not everyone would agree upon the precise way in which these functions should be carried out; but there are few demands for private armies, private police forces, courts and judges, whilst the natural monopoly characteristics of central banking present a convincing if not an absolutely overwhelming case for state intervention within the monetary system.

This volume is concerned, however, with wider issues of government intervention within the industrial system, about which there is no consensus at the present time, but, rather, notable disagreement and controversy. No attempt is made in this Introduction to formulate clear-cut conclusions on the issues under debate, for so much depends in this area of economic analysis upon the precise value assumptions imposed, even where the practical consequences of state intervention are exactly identifiable. This Introduction attempts, more modestly, to outline in summary form the principal issues at stake and to catch the flavour of the ongoing debates as they are reflected in the articles and papers reprinted in this volume.

Social Welfare and Value Judgements

There are no rules concerning the proper role of government that can be established by *a priori* reasoning. This, if this alone, is the unambiguous message to be derived from welfare economics. For any discussion of the proper role of government involves value judgements and falls, therefore, outside the scope of positive economics. Indeed, it is a major responsibility of economists engaged in public policy analysis to lay their value judgements squarely on the table so that the reader can judge for himself (or herself) whether or not the premises upon which the discussion is based are acceptable. Unfortunately, far too much of current public policy discussion (perhaps especially in the area of industrial economics) is conducted on a less careful and/or a less scrupulous basis.

Rigorous attempts to discuss state intervention within the industrial system from the viewpoint of social welfare tend to be founded, more or less explicitly, upon the analytical approach established by Vilfredo Pareto. For this reason, a review of the value assumptions and of the welfare maximization implications of the Pareto approach seems necessary in this Introduction.

Although Paretian welfare economics is used automatically by the vast majority of Western economists in approaching formally problems of public policy, it is important to recognize that non-trivial value judgements are deeply embedded in the Pareto principle and that these value judgements may not in fact be universally acceptable [12, 13].

The Pareto principle is based upon four such value judgements. The first establishes the individualistic nature of the approach and directs attention to the welfare of all individuals within a society rather than to the welfare of some organic concept of society. The second – which is frequently modified – directs attention to the economic components of social welfare on the (disputable) assumption that social welfare itself is divisible and that the economic component is separable and distinct. The third endorses the view that the individual is the best judge of his own economic welfare and rejects paternalism save in the cases of lunatics, incompetents and minors. The fourth – which is referred to not infrequently as *the* Pareto value

judgement – defines an increase in economic welfare as arising whenever a change in resource allocation increases the welfare of at least one individual without reducing the welfare of any other individual. With this assumption, nothing can usefully be said about the net welfare effects of changes in which there are welfare losers as well as welfare gainers. For this reason, it is impossible to assess whether a social welfare maximum in the sense of Pareto is a local maximum only or whether it is a global maximum. It is impossible, in the absence of a specific social welfare function, to determine which of the infinite number of efficiency possibilities compatible with Pareto optimality should be selected as the most favoured policy objective (i.e. which is the position of constrained bliss).

There are, of course, many alternative social welfare functions, each of which might be employed to resolve the distribution dilemma of the Pareto principle. Indeed, in certain instances the chosen social welfare function might even overrule, in the interests of equity, the efficiency requirements established by reference to the Pareto principle. In any event, it is important to recognize that economists have no special voice in the selection of a social welfare function, though they are free to make their own choice, always provided that they are explicit about it and do not attempt to obscure value judgements by jargon and mathematical facility. The reader who accepts the individualistic thrust of the Pareto principle but who rejects the constraint upon policy discussion imposed by the fourth value judgement will adopt his own distributional objective as a basis for the search for a social welfare maximum. Those who view industrial economics as being concerned primarily with issues of efficiency in resource allocation and who view equity as being the proper concern of the fiscal authorities may approve of a social welfare function which relies upon the first three value judgements of the Pareto principle whilst introducing strict neutrality as to the equity implications of resource reallocation, viz:

$$\text{Maximize } W = TR + S - (TC - R)$$

where W = net economic welfare, TR = total revenue, S = consumers' surplus, TC = total cost and R = infra-marginal rent.

This particular social welfare function is used explicitly in

the articles by O. E. Williamson and by M. A. Crew and C. K. Rowley reprinted in this volume [see also 6, 13, 15, 16]. It is used implicitly in several others, including the articles by L. G. Telser and by K. J. Arrow also reprinted in this volume. It is rejected explicitly by Jack Wiseman, with emasculatory consequences for the public policy debate, in his perceptive contribution to the theory of public utility pricing, also reprinted in this volume. In general, it is the social welfare function which underpins contemporary cost-benefit analysis and which, for better or worse, is increasingly influential in the economics of industrial organization. It is useful, therefore, to outline briefly the necessary conditions for efficiency in exchange and production which are implied by this social welfare function [1].

Exchange efficiency (in Paretian terms) is centrally concerned with the ability of individual consumers to dictate the allocation of resources from the basis provided by the existing distribution of incomes. In the absence of externalities (later to be discussed), a process of unfettered exchange between individuals would ensure that a point would be reached at which further exchange would increase the welfare of one individual only by reducing the welfare of (an) other individual(s). Such a point represents an exchange optimum in the sense of Pareto and would be characterized by the satisfaction of certain necessary marginal conditions. The first marginal condition – which is necessary for efficiency in the distribution of commodities among consumers – is the condition that the marginal rate of substitution between any pair of consumer commodities must be the same for all individuals who consume both commodities. If this condition were not to obtain, one or more consumer(s) might gain from further exchange without harming any other consumer. The second marginal condition – which is necessary if the quantity of each good produced is to conform with consumer preferences – is the condition that the marginal rate of transformation in production must equal the marginal rate of substitution in consumption for every pair of commodities and for every individual who consumes both. If this condition were not to obtain, a shift in the production pattern of commodities would be feasible which would benefit some consumers without harming others. These two conditions, if simultaneously satisfied, ensure efficiency in exchange.

Efficiency in production is concerned with the provision of

the required range of commodities in the most efficient manner, i.e. with economizing in the use of scarce resources. The necessary marginal condition – which ensures optimal conditions of factor substitution in production and distribution – is the condition that the marginal rate of technical substitution between any pair of factor inputs must be the same for all producers who use both factor inputs. If this condition were not to obtain, a reallocation of factor inputs among producers might increase aggregate output without any reduction in the outputs of existing commodities. For the most part, welfare economics has centred disproportionate attention upon exchange efficiency to the comparative neglect of productive efficiency. Very recently, however, this situation has changed since Harvey Leibenstein's seminal contributions on X-inefficiency. In this volume, articles by W. Comanor and Harvey Leibenstein and by M. A. Crew and C. K. Rowley develop the X-inefficiency concept and explore its implications for public policy.

The simultaneous attainment of the marginal conditions necessary for efficiency in exchange and production will provide a social welfare maximum in the sense of Pareto and will maximize the W function outlined in this section. This situation will occur when price is equated with marginal cost in every commodity market and in every factor market, and in this sense universal perfect competition is a sufficient (though not a necessary) condition for a social welfare maximum. Since there are an infinite number of solutions which satisfy these conditions (varying with the initial allocation of property rights), it is theoretically possible to trace out a grand utility-possibility frontier of Pareto-efficient input-output combinations. In order to designate a single 'best position' on this frontier it would be necessary to supply a social welfare function which determined the property-right allocations. Social welfare would then be maximized where the utility-possibility frontier touched the highest contour of the social welfare function. The specific W function here outlined is maximized at *any point* on the grand utility-possibility frontier.

Economists long accepted that any movement within the economy towards satisfying the marginal conditions must lead to an improvement in net welfare, even though the conditions remained unsatisfied in certain sectors of the economy. This belief enabled policy pronouncements to be made with

confidence concerning specific sectors of the economy, even though insurmountable obstacles existed to the attainment of the marginal conditions elsewhere. In 1956, however, this belief was rudely shattered by R. G. Lipsey and K. Lancaster [11] in their important article entitled 'The General Theory of Second Best'. As they put it:

The general theorem for the second best optimum states that if there is introduced into a general equilibrium system a constraint which prevents the attainment of one of the Paretian conditions, the other Paretian conditions, although still attainable, are, in general, no longer desirable. In other words, given that one of the Paretian optimum conditions cannot be fulfilled, then an optimum situation can be achieved only by departing from all the other Paretian conditions.

Lipsey and Lancaster qualified their conclusion by the term 'in general', but the main thrust of the article was in opposition to the piecemeal approach towards public policy grounded upon the Pareto principle. Indeed, their contribution raised serious doubts as to the usefulness of welfare economics propositions in piecemeal public policy analysis. For Lipsey and Lancaster felt unable to lay down any general guidelines as to when the Pareto conditions should or should not be satisfied. Seldom has so destructive an attack been successfully mounted upon a well-established approach to public policy analysis. Almost inevitably, the general response among economists was that of paying lip-service to second-best problems, but proceeding (albeit shamefacedly) to an analysis which assumed more or less explicitly that first-best conditions obtained (or at least were obtainable) elsewhere within the economy.

In 1965, however, fresh support for the piecemeal approach was presented by O. A. Davis and A. B. Whinston [7] in a paper which developed a method of analysis designed to determine whether a specified violation of one or more of the Paretian conditions really did imply that the remaining Paretian conditions should also be violated. Davis and Whinston centred attention upon situations in which at least one actor had a preference ordering, a criterion function, or a technology which deviated from that required for the attainment of the Pareto conditions within the existing decision-making framework. Then, granted the behaviour of the deviant, they examined the

behavioural rules for the other actors which would best compensate for the deviant's behaviour. They concluded, following a rigorous analysis, that whenever there was deviant behaviour in a situation where only prices and the variables under the deviant's control entered into his decision rule, the market would take that behaviour into account, since the price mechanism takes into account interconnectedness caused by scarcity. In such circumstances, piecemeal policy was all that was required. But wherever interdependence existed (perhaps as a result of externalities) which caused non-price variables not directly under the actor's control to be in his behavioural rule, the policy-maker must consider the entire system of interconnected actors in order to avoid undesirable consequences. This conclusion must provide comfort for those (like the present author) who are inclined to ignore the problems posed by second-best possibilities and to pursue policy solutions on the assumption that the remainder of the system is perfectly adjusted.

Welfare Economics and Theories of the State

Until recently, the economic theory of public policy centred attention upon situations of likely market failure and upon alternative remedies available via the intervention of the state, treating government for the most part as the omniscient and impartial servant of the public good and paying scant heed to the real-world pressures of the political market-place. Only during the past decade have serious attempts been made to provide a more realistic and relevant approach to political behaviour. In the main, such attempts have been forthcoming from economists concerned with public choice who were increasingly frustrated by the 'nirvana' view of government inherent in conventional economic analysis and by the ascientific approach to their subject which is characteristic of students of politics.

From a normative viewpoint, much attention has been placed in recent years upon the compatibility or otherwise of the Pareto principle with majority-vote systems of political decision-making. In an important contribution, Harvey Leibenstein [10] emphasized that Pareto-superior and Pareto-optimal points are universal consent points. As such, they are inconsistent with

democratic choice in all cases where a majority preference point is not also a universal consent point. Thus, if the Pareto principle were to be applied within the political system, a veto power would be available to anyone who favoured the *status quo*. This indeed would provide immense protection for those minorities who opposed change, but almost inevitably at the cost of emasculating the political process. Between majority rule and the complete protection of minority interests a wide range of compromises exist and there is no reason to suppose that the Pareto extreme must necessarily be adopted.

At first sight, the majority-vote system seems to endorse a 'one man one vote' value judgement for public-sector decision-making and to make no allowance for differences in the intensity of preferences among the voting public. But this is not in fact the case, as several commentators (including A. Downs [9] and J. M. Buchanan [2]) have emphasized. There are many situations in which a vote-maximizing government would do well to support minority interests which are known to be strongly held, most especially where the composition of the minority varies with the differing policy issues under consideration. Furthermore, where log-rolling (the free exchange of votes between voters) is at all widespread, majority support for strongly-held minority views may be forthcoming even where a minority-biased decision of the kind outlined above would not occur. This does not imply, of course, that the majority-vote system will always produce public-sector decisions which correspond with the optimality conditions required by the Pareto principle (or indeed by any modification of this principle).

Moreover, as K. J. Arrow has rigorously established, the majority-vote system does not in general give rise to transitive choices, even where each individual voter has perfectly transitive preferences. It is perfectly possible for a voting majority to prefer policy A to policy B, policy B to policy C, and yet policy C to policy A, given that there are a wide variety of individual preferences concerning these policies. Whether or not the presence of such intransitivity in collective decision-making is really such a compelling criticism of the majority-vote system is a matter of opinion. Certainly, there are those who consider it to be of trivial practical importance.

In an ingenious, if somewhat unconvincing, attempt to integrate the collective decision-making processes into the

framework provided by the Pareto principle, J. M. Buchanan [2] has distinguished the method by which the rules of the game are determined from the procedures by which particular decision-outcomes are decided. Buchanan suggests that there is some sense in which a majority-vote system may be viewed as a universally acceptable rule and that in this sense particular majority-based decisions may be viewed as being Pareto-preferred to any decisions that might have been forthcoming had a different rule been applied. Buchanan further argues that the role of the political economist should be restricted to that of diagnosing social situations and presenting to the voting public a set of possible policy changes, from which he would select one policy as (in his view) Pareto-preferred and present it as a hypothesis to be subjected to the voting test. Buchanan recognizes that the existence of majority-vote systems must face the political economist with a great temptation to select social alternatives which command majority support rather than consensus. Presumably this would not matter (from a Pareto viewpoint) if Buchanan's view that there is a 'social contract' consensus in favour of the majority-vote system is accepted.

From a positive viewpoint, a great deal of important work has been completed during the past few years, following the seminal contribution by A. Downs [9] in 1957, in connection with predicting the behaviour of political parties from models based upon the vote-maximizing postulate within the context of two-party, majority-vote systems. Since the behaviour of the political parties is clearly of central importance in any analysis of private enterprise and state intervention, a brief outline of the Downs approach may prove illuminating.

Downs developed his model on the basic assumption that politicians are motivated by self-interest and pursue vote-maximizing policies and that the elected government in a two-party, majority-vote system must adopt a vote-maximizing policy platform if it is not to lose control over the governing apparatus to its rival. The election process itself, therefore, is viewed as a political market in which votes are exchanged for policies. A number of testable hypotheses flow from this theoretical framework.

It is a key prediction of the Downs model that both political parties will be pressed into adopting policies favoured by the median preference voters, at least where the voter preference

distribution is single-peaked, where voter preferences are clearly registered and are known to be firmly held. Only rarely, in such circumstances, would future-oriented parties diverge from this prescription, sacrificing present votes for future votes in the expectation that voter tastes would shift within the politically relevant time-period. In the main, the policy preferences of minority groups are not expected to exert much influence in formulation of public policy, and the policy platforms of the two competing parties are not expected to diverge significantly. The relevance of ideology is reduced to that of the brand-image of the widely marketed soapless detergent, namely to reduce the transaction costs of acquiring information for those who are incapable of or unwilling to inform themselves about the political market.

The Downs model is easily adjusted to take account of situations in which the policy preferences of the voting public are not clearly registered and/or are suspected to be only loosely adhered to. In such circumstances, it is predictable that the policy utterances of both parties will be ambiguous and that the policy actions of the governing party will be inconsistent. For to formulate policies clearly and consistently would be to run the risk of major net vote-losses which political parties can rarely envisage, especially when elections occur only at widely spaced intervals.

The Downs model also takes account of imperfections of knowledge in the political process and of the transaction costs of communicating information on voter preferences to the politicians, predicting that public policy formation will be disproportionately influenced by producer groups (widely defined), to the detriment generally of consumers. For the interests of producer groups in any single issue of public policy inevitably are more specific than those of consumers, with the implication that producers' pressure-group activities will prove more rewarding for any given outlay than would be the case with consumers. This is a major predictable imperfection in all political markets characterized by uncertainty.

Much work remains to be done in evaluating the predictive properties of the Downs model and in building better models to take account of areas in which its predictions fail. Such testing is still in its infancy and great confidence cannot yet be placed in the model [14, 17]. Preliminary results suggest

strongly, however, that the Downs model is a much better predictor of political behaviour than is the traditional 'nirvana' approach to government which is so deeply embedded in the economic theory of public policy.

An Anatomy of Market Failure

Adam Smith, writing in 1776, felt able to conclude that individuals pursuing their own self-interest within the framework of a competitive private enterprise system would be led as if by an invisible hand to actions that in fact promoted the general welfare of all. The technically more advanced modern-day welfare economist would be somewhat more tentative and circumspect in his policy interpretations. At most, he might suggest that on certain restrictive assumptions perfect competition in all goods and in all factor markets would satisfy the necessary marginal conditions for Pareto efficiency in production and exchange, given the initial distribution of income. No economist could seriously claim that perfect competition is universal in the modern industrial economy. Nevertheless, perfect competition provides a useful measuring-rod against which certain aspects of market failure can be evaluated, most notably the welfare implications of monopoly conditions, which feature in such an important role in industrial economics.

The first contribution, by R. A. Berry, makes use of this measuring-rod and centres attention upon the welfare loss arising from monopoly, subjecting the conventional geometrical representation of this welfare loss – the 'Marshallian triangle' – to a highly critical scrutiny. Although Berry correctly emphasizes the interpersonal utility comparisons which are implicit in the Marshallian approach and advances this as a criticism, it is important to emphasize that the criticism is empty once the social welfare function previously outlined in this Introduction is employed, as it is for the most part in discussions of monopoly and competition. Nevertheless, Berry's criticisms of the conventional approach have considerable force, and, always provided they are not allowed to assume disproportionate significance, they stand as a powerful reminder of the simplifications employed in contemporary welfare economics and of the restrictions these impose upon the public policy debate.

The second contribution, by W. S. Comanor and Harvey

Leibenstein, reinforces the welfare economics case against monopoly at least under first-best conditions by demonstrating the additional welfare losses imposed when the existence of monopoly implies higher cost levels, in consequence of X-inefficiency, than would prevail under conditions of competition. Although Comanor and Leibenstein are not explicit in their paper, it is reasonable to infer that X-inefficiency strikes, in part at least, at marginal cost, resulting in shifts in resource allocation additional to those which are observed in the more conventional welfare analysis of monopoly conditions [5]. The significance of X-inefficiency for the conduct of public policy is evaluated in the paper by M. A. Crew and C. K. Rowley reprinted in Part Two of this volume.

The other principal source of market failure relevant for public policy discussion is the existence of Pareto-relevant externalities which are usually taken to imply that even perfect competition cannot achieve a social welfare maximum (in the sense of Pareto) in the absence of some form of state intervention. This view has recently been challenged (most notably by J. M. Buchanan [3]), on the ground that it incorporates an unrealistic presumption that governments are omniscient and impartial and that state intervention will be perfectly designed and meticulously executed to attain the welfare optimum. Buchanan, in particular, has demonstrated, by reference to alternative theories of human behaviour, that as long as individuals are assumed to be similarly motivated in the marketplace and in the political process, no direct implications could be derived as to the appropriate organization of an activity beset by Pareto-relevant externalities. The orthodox implications derived by reference to Pigovian welfare economics could be supported only on the assumption that individuals responded to different motives when participating in market and political activities. Otherwise, the only case in which the political process would eliminate externalities which existed under market conditions is that of truly collective goods, with no elements privately divisible and with taxes collected on the basis of marginal benefits. In the real world, commodities with these characteristics are rare indeed.

Fundamentally, the public policy problems posed by externalities, be they of the well-known smoky chimney variety, or the product of indivisibilities in the production function and the

inapplicability of the exclusion principle, arise as a consequence of the inadequate specification of property rights. It is appropriate, therefore, that the third contribution, by Paul Burrows, centres attention upon the property-right issues which underpin the externality problem. Burrows evaluates the two principal functions of the law in the treatment of external costs, namely (i) settling disputes over legal rights, and (ii) providing alternative compensation arrangements to those provided by the market and by tax-subsidy schemes. He emphasizes the sharp conflict which exists between the objectives of legal decisions on rights and the existence of institutional constraints on the achievement of optimal outcomes. Burrows makes out a convincing case for adjustments in the existing legal system which would prove instrumental in facilitating private bargains for the redistribution of rights. For example, British legal practice is preoccupied with imposing damages for past events (action which does not influence future behaviour) but with imposing injunctions for continuing activities (thereby preventing such activity even where it would be profitable to continue it if appropriate damages had been payable). Such a preoccupation is not necessarily the most conducive to an optimum solution, though Burrows is careful to distinguish between cases involving large and small numbers and cases involving high and low bargaining costs in formulating his public policy inferences. His contribution is especially important in view of the significance recently attached in the externality literature both to property-right determination and to bargaining solutions [8].

The fourth contribution, by P. A. Samuelson, is the well-known though relatively inaccessible diagrammatic exposition of the public-good problem which clearly demonstrates the inability of a decentralized market or voting mechanism to attain the conditions required for optimality in the provision of public goods. Samuelson noted the polar nature of his public-good theory and did not deny that real-world examples of public goods were difficult to come by. He claimed, nevertheless, a wide public policy relevance for this theory and contended that almost every 'legitimate' function of government was characterized by public-good conditions.

The fifth contribution, by J. G. Head, provides a detailed analysis of public-good theory and of its public policy significance, relating the Samuelsonian concept to the more familiar

Pigovian theory of public policy. Head distinguished clearly between the jointness in supply and the external economies characteristics of public goods, arguing that while jointness was an essential characteristic of a public good, it was the external economies (i.e. the exclusion or appropriability difficulties to an extreme degree) characteristic alone which accounted for the failure of the market mechanism to ensure a revelation of true preferences. Head emphasized that exclusion was never completely impossible even in such obvious cases as national defence, flood control and public health programmes, but that a wide category of commodities was characterized by exclusion difficulties, with the inference that the market would fail to secure optimum production and consumption of the goods in question. On the other hand, goods and services with jointness aspects might well pose no price-exclusion problems, e.g. bus, train and tram fares, although they would pose problems of understatement of preferences by individual members of the collectivity when the government stepped in to promote the more adequate provision of the commodities concerned. In such circumstances, the underprovision of collectively provided public goods was extremely likely. Head's contribution introduces a refreshing element of realism into a field of economic analysis which has frequently attracted highly naïve analyses of the working of the political process.

Implicit in much of the welfare economics literature, and most especially in discussions of market failure, is the assumption that transaction costs are unimportant by comparison with other costs within the economic system. As such, transaction costs are frequently ignored entirely or summarily dismissed as an inconvenient real-world intrusion into what is essentially a theoretical exercise. It is to the lasting credit of Harold Demsetz that he has demonstrated so clearly the theoretical significance of transaction costs for the economic theory of public policy. The sixth contribution to this volume, by Harold Demsetz, is concerned firstly with the fact both that the exchange of goods and the maintenance of control over the use of goods impose economic costs on traders and owners, and secondly to emphasize that there are economic costs attached to collective as well as market activities.

Demsetz demonstrated the relevance of transaction-cost analysis in raising question-marks over the categorical denunci-

ation by economists of situations of market failure based upon externality (and especially public-good) considerations, pointing out that the cost of alternative market and political solutions is seldom introduced explicitly as a relevant variable in the public policy debate. In particular, he emphasized that an insistence that all commodities be priced in the market or that the government should intervene was equivalent to the insistence that there should be no economizing in the cost of producing exchanges or government services. Thus, most welfare propositions concerned with externalities were based on an invalid use of the standard optimality theorems. The relevance of transaction costs for public policy analysis will become especially clear in the concluding debate between K. J. Arrow and Harold Demsetz, concerning the welfare economics of invention.

The Framework of State Intervention

Part Two of the volume centres attention upon two widely utilized techniques of state intervention in the modern industrial economy, namely anti-trust and regulation, though many of the contributions concerning regulation have an obvious relevance also for public enterprise. In a very real sense, these contributions represent the heartland of industrial economics.

The seventh contribution, by O. E. Williamson, presents a case for treating market power not as an unquestionable offence – as by and large is the case in the United States – but as the subject of a complex welfare trade-off between the loss of consumers' surplus on the one hand and the cost savings from scale economies (if any) on the other. Throughout the analysis, Williamson employs the social welfare function previously outlined in this Introduction, thereby suppressing the income distribution considerations of anti-trust intervention. His discussion is restricted to merger activities from which increased market power is anticipated. Williamson indicated that in the usual case the cost savings from scale economies would easily outweigh the loss of consumer benefits from market-power-induced price increases, with the inference that most such mergers could justifiably be allowed to proceed. He took full account of the complicated discounting procedures which would

be necessary if the trade-off was to centre attention upon the relevant present values of costs and benefits, and his contribution is a model of careful exposition tied to rigorous economic analysis. Williamson's public policy message is clear. Non-discretionary rules for anti-trust should be replaced by pragmatic investigation – a victory for the United Kingdom over the United States approach to the problem of market power.

The eighth contribution, by M. A. Crew and C. K. Rowley, endorses Williamson's approach to the anti-trust problem whilst challenging the public policy inferences which follow from Williamson's paper, by introducing the possibility that X-inefficiency is an increasing function of market power. In such circumstances, the loss of consumers' surplus would, of course remain as a detriment and the gain from scale economies as a benefit to market power. But the latter benefit would be offset by such X-inefficiency as could be anticipated from the rise in market power. In so far as cost increases from X-inefficiency outweighed the cost savings from scale economies – and to determine this would involve forecasting – the unambiguous neo-classical case in favour of anti-trust would be reinforced rather than weakened. Certainly, Williamson's pro-merger conclusions would be severely weakened. With the introduction of X-inefficiency possibilities, however, the transaction costs of pragmatic 'anti-trust', never low, reach significant proportions, and Crew and Rowley conclude that on an overall assessment non-discretionary anti-trust rules, enforced through the judicial process, probably represent the optimum public policy solution, as evaluated within an all-inclusive framework which takes appropriate account of investigation and policing costs [6, 15, 16].

The ninth contribution, by Jack Wiseman, switches attention away from anti-trust to the problems encountered in regulating the public utilities, and centres critical attention upon the theoretical validity and the practical accountability of the public utility pricing rules which form such a significant part of the conventional regulation literature. Wiseman rejects the social welfare function designed to suppress income distribution considerations and relies instead upon the unqualified value assumptions of the Pareto model. On this basis he clearly demonstrated that welfare criteria gave rise to no unambiguous general rule for the price and output policy of public utilities,

since almost every price adjustment implied an income redistribution effect which could not be evaluated within the context of the Pareto value judgements. Perhaps more important from a public policy viewpoint, however, was Wiseman's emphasis upon the subjectivity of costs – opportunity costs of course – in a world characterized by uncertainty. In such circumstances, a direction to marginal-cost price is little more than an empty order, since the bureaucrat himself would exercise his own subjective judgement on the nature of costs, and public accountability in practice becomes little more than a sham. Wiseman's contribution has ruffled many feathers within the regulation aviary and not without good cause. For it represents a fundamental challenge which no amount of mathematical ingenuity can really answer.

The relationship between cost and choice, which Wiseman emphasized, has been further evaluated very recently by J. M. Buchanan [4], and the issue is sufficiently important both to regulation and to public enterprise to warrant a further comment in this Introduction. Cost in a theory of choice must be reckoned in a utility dimension and must be viewed as that which the decision-maker sacrifices when he makes a choice. In this sense, Buchanan established (i) that cost must be borne exclusively by the decision-maker and could not be shifted, (ii) that cost was subjective, existing only in the mind of the decision-maker, (iii) that cost necessarily was *ex ante*, based on expectations, (iv) that cost could never be realized, (v) that cost was measurable only by the decision-maker himself, and (vi) that cost could be dated at the moment of decision. With these important points established, Buchanan distinguished between choice-influencing and choice-influenced cost. Every choice involves both these costs, but only the former represents a genuine obstacle to choice. Choice-influenced cost is concerned with the consequences of choice, evaluated in terms of the utility losses that are always consequent upon choice, and which may be experienced by parties other than the decision-maker. These costs, the result and not the cause of decision, are the costs with which economists and accountants are apparently primarily concerned, despite the fact that within the context of choice they are not costs at all. Finally, Buchanan demonstrated that only in full competitive equilibrium could the observed money outlays, which in a prostituted sense constitute objective

cost, reflect even indirectly the genuine opportunity costs of economic theory. The inapplicability of such conditions to the public utilities is obvious.

The tenth contribution, by Harold Demsetz, raised what is perhaps the most fundamental question of all, namely: why regulate the public utilities at all? Demsetz argued that the theory of natural monopoly was deficient in that it failed to reveal the logical steps from scale economies in production to monopoly price in the market-place, and indeed that there was no inevitable association between the two. For rival sellers could offer to enter into contracts – perhaps annually renewable – with buyers, and in this bidding competition, the rival who offered buyers the most favourable terms would obtain their patronage. There was no reason why competition in bidding should result in an increase in per unit production costs. Always provided that the inputs required to enter production were available to the potential bidders at prices determined in open markets, and that the cost of collusion between bidders was prohibitive, a competitive public utility solution could be obtained without government interference. Strictly, of course, the Demsetz solution is an average-cost pricing solution which would violate the absolute efficiency requirements of the Pareto model, since marginal costs must lie below average cost in a decreasing-cost industry. But Demsetz has never restricted himself to the strait-jacket of Pareto efficiency. To those (like the author) who are deeply concerned by the X-inefficiency consequences of real-world regulation, the Demsetz proposal looks appetizing, judged, as it should be, within a comparative institutions framework [13].

The eleventh contribution, by L. G. Telser, is on the other hand altogether more technical, and is designed to demonstrate, by reference to a specific example, that competition does not yield a welfare optimum in the case of natural monopoly, but rather produces the tangency solution derived by E. Chamberlin in the theory of monopolistic competition, which is generally inefficient. In terms of the welfare criteria applied by Telser, which suppress distribution considerations, some direct price control would be necessary if the industry were privately owned. Telser's contribution is commended on grounds of rigour and clarity of exposition in a field of analysis which is not well known for these qualities. The reader is warned, however, that

the important theoretical and practical issues raised by Wiseman and Demsetz are ignored for analytical purposes in Telser's contribution.

The twelfth contribution, by M. Z. Kafoglis, examines the price and output behaviour of the monopoly restrained by 'fair rate of return' regulations, in terms of various non-profit-maximizing theories of the firm, demonstrating the wide range of alternative results which are possible. In particular, Kafoglis demonstrated the likely X-inefficiency consequences of regulation (though he did not explicitly use the X-inefficiency concept), and pointed out that on certain assumptions the output of the restrained firm could be less than, equal to, or might even be pushed beyond the Pareto optimum. The contribution is fundamentally important in that it emphasizes the extreme difficulty of predicting the economic consequences of regulation at least in the present state of knowledge concerning the theory of the firm and of market behaviour.

Invention and the State: A Study in Controversy

The thirteenth and fourteenth contributions, by K. J. Arrow and Harold Demsetz respectively, represent an important debate in which the importance of the assumptions used and the variables introduced for consideration becomes only too clear for the public policy results. Arrow presents a convincing argument to support the view that government finance is necessary for the optimal allocation of resources to invention and that purely private provision will result in a suboptimal allocation. I found the article completely convincing prior to Demsetz's critical response, and I do not class myself as being unduly prejudiced in favour of the interventionist approach. By adjusting certain of Arrow's assumptions – arguably towards a more realistic emphasis – Demsetz turns Arrow's argument upon its head and, at least within the framework of a comparative institutions approach, denies the validity of Arrow's public policy recommendations. If industrial economics, as reflected in these two articles, does not appear to the reader to be the vibrant, exciting discipline that I believe it to be, then he (or she) must indeed be difficult to please.

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