Controlling the Nationalised Industries: Quis custodiet ipsos custodes?

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1. Introduction

This is a particularly opportune time to examine the framework for controlling the British nationalised industries. On the one hand, their ranks have been greatly swelled in recent years by the nationalisation of shipbuilding and aero-space industries, the formation of the British National Oil Corporation, and the public ownership (in whole or in part) of some fifty-five companies (notably Rolls-Royce and British Leyland) under the umbrella of the National Enterprise Board. On the other hand, a report in 1976 by the National Economic Development Office found that relationships between the government and the nationalised industries were worse than they had ever been. There has been increasing discussion among economists, civil servants and the general public concerning the appropriate pricing and investment policies for the nationalised industries, and the organisational framework within which they should operate. In March 1978 the Labour government issued a White Paper containing its own views on these issues. However, the initial pronouncements of the Conservative government elected in April 1979 suggest that it is considering a distinctly different approach. The present paper is a contribution to the current debate.

2. The Development of Nationalised Industry Policy

The post-war Labour government nationalised the coal, electricity, gas, iron and steel and airline industries (though parts of these industries had been publicly owned before the war). Public corporations were set up to run them, with Boards of Directors appointed by the appropriate minister. The minister is accountable to parliament for the operation and performance of the industry, and he has power to give instructions of a general nature to the industry. The industries themselves were typically given somewhat vague

instructions to further the public interest, or to meet the demand for their goods and services in the most efficient way, and to break even financially "taking one year with the next".[1]

Economists were concerned to design pricing and investment policies which would ensure the efficient allocation of resources. The principle that public enterprises should set prices equal to marginal costs, which had been introduced by Large, Lerner and Hotelling during the 1930's, was much debated during the 1940's and 1950's.[2] However, a proposal to this effect was rejected by the minister concerned, Mr. Herbert Morrison.[3]

In 1961, apparently in response to the mounting losses of the British Transport Commission and the National Coal Board, and the low rates of return earned by the other nationalised industries, the government issued a White Paper[4] requiring that the industries break even on Revenue account over a five year period, after providing for depreciation on a replacement cost basis and for adequate allocations to reserves. Each industry was given a financial target reflecting its commercial prospects and its social obligations.

In 1967, a further White Paper[5] noted that investment in the nationalised industries had expanded on a scale far greater than had been forecast six years earlier. The need to allocate resources on an economically and socially rational basis had become even more important. The main provisions of the White Paper were as follows.

i) Discounted cash flow techniques were to be used to appraise all important investment projects, using a common test discount rate of 8% (later raised to 10%).

ii) Revenues were required to cover accounting costs in full, but in order to avoid cross-subsidisation and misallocation of resources, it was important that customers pay the "true costs" of goods and services. Peak-load pricing schemes and multi-part tariffs were recommended. Furthermore, "prices need to be reasonably related to costs at the margin". Long-run marginal costs were appropriate except where there was spare capacity or excess demand.

iii) The industries were urged to strive to reduce costs, especially by introducing labour-saving methods.

iv) Financial targets were continued "both as an incentive to management and as one of the standards by which success or failure over a period of years may be judged".

In effect, marginal cost pricing had become official government policy for all British nationalised industries. The principle was enthusiastically advocated by the National Board for Prices and Incomes, set up in 1965, whose function included the appraisal of nationalised industry tariff proposals.[6] But the industries themselves found difficulties in implementing the policy, and some resisted it. Then, in the early 1970's, the government introduced a price freeze as part of its anti-inflationary policy, which effectively precluded setting prices equal to marginal cost anyway.

3. The Current Debate

If one is to judge by the enormous growth in the journal literature on the implications and applications of marginal cost pricing, the extensive expositions in textbooks, and the virtual absence of critical writings, one has to conclude that the principle of marginal cost pricing has been broadly accepted by the economics profession since the mid-1960's.[7] It is probably true to say that most economists in Britain (including those in government) welcomed the 1967 White Paper as an important step in the right direction. The requirement to cover total costs certainly met the main objections of the earlier critics. On the whole, then, economists regretted the failure to implement the 1967 policy, and wished to see a reaffirmation, clarification and strengthening of the same principles.[8]

The National Economic Development Office (NEDO) took a different view. Its enquiry (commissioned by the government) had found a lack of trust and mutual understanding between the government and the nationalised industries, confusion abour respective roles, no systematic framework for making long-term decisions, and no effective system for monitoring performance.[9] It held that the existing "arm's length" relationship, according to which the industries had substantial independence subject only to general directions from the government (such as the marginal cost pricing instruction), was inherently untenable, had been responsible for the poor relationship between the industries and government, and was in need of radical change. NEDO proposed the creation of a Policy Council for each industry, comprising representatives nominated by all interested parties, (e.g. government, trade unions, management, consumers, suppliers and "independent viewpoints"). This Council would be accountable to Parliament, but would essentially take over responsibility

for agreeing corporate aims and objectives, endorsing corporate plans, including pricing and cost assumptions, and monitoring subsequent performance.

In its White Paper of March 1978,[10] the government acknowledged the poor relationships of the past few years, but argued that the economic situation had now improved, the industries were no longer constrained in setting prices, and better relationships had already been established. It rejected the NEDO proposal for Policy Councils on the grounds that the government should not delegate its power on matters of major political and public importance, and that the suggested arrangements would in fact slow down the process of decision-making and confuse responsibility and accountability. The government instead declared its intention "to reinintroduce and reinforce the approach to investment appraisal, pricing policy and financial targets which was set out in the 1967 White Paper". Because in practice only a limited proportion of the industries' investment had been appraised using the test discount rate, the industries were now expected to achieve a required rate of return of 5% in real terms on their investment programme as a whole; this would ensure they took into account the opportunity cost of capital, and thereby avoid a misallocation of resources. Financial targets were re-established, and publication of other performance indicators was requested.

It appeared that the economist's view had prevailed. But in fact the 1978 White Paper satisfied no-one. Economists regretted that the methods of appraisal for individual projects was now left to the discretion of the industry, and pointed out that marginal cost pricing was no longer mandatory: it was now "primarily for each industry to work out the details of its prices".

In some respects the White Paper represented a retrograde step from an "economic" to the former "financial" system of control.[11] On the other hand, those involved in the NEDO proposal saw the new framework as merely a "fair weather" system, which failed to get to grips with the political realities, and was as doomed to failure as the previous framework.[12]

The Conservative government which took office in May 1979 has not as yet made any general statements on the nationalised industries. However, it appears likely that its approach will differ from that of its predecessor. In recent weeks, the Secretary of State for Industry has imposed strict limits on the allowable deficits of the steel and shipbuilding industries, and announced proposals to sell shares in British Airways and British Aerospace to private investors. The Secretary of State for Transport has promised to make it easier for new bus operators to get licences and partially to de-nationalise the National Freight Corporation. The Post Office monopoly is under review, and there are newspaper reports that it will be substantially curtailed.[13]

4. The Argument of this Paper

In this paper, an attempt is made to reappraise the pricing and investment policies recommended for the nationalised industries, and the general framework of control within which they are embedded.

The argument differs in emphasis from that of the earlier debates. There, the reservations about marginal cost pricing were mainly concerned with the misallocation of resources and redistribution of income consequent upon a budget deficit, and the corresponding merits of average-cost pricing or multi-part tariffs. These objections seem to have been largely accepted nowadays, as reflected in the notion of marginal cost pricing subject to a net revenue constraint (so-called "Ramsey prices" in the U.S.A.).[14]

Here, there is emphasis on various other aspects of public enterprise policy, connected with ignorance and change, and with incentives and political pressures, which were mentioned comparatively briefly, if at all, in the early debates, but which have subsequently received an increasing amount of attention in other contexts.

Much of the early debate (certainly on the part of the protagonists of marginal cost pricing) was conducted within the familiar static equilibrium framework of welfare economics. With a few notable exceptions, it is in this framework that almost all the economic analysis continues today. This very conceptual framework fails to reflect reality in two significant respects. First, it takes no account of differences in expectations about the future, there is no creation or discovery of opportunities, nor any need for continual revision of plans, and there is no appreciation of the true nature of competition and resource allocation as dynamic processes which take place over time.[15] Second, it takes no account of the political and social pressures impingeing on both governments and public enterprises, and the resulting effects which these pressures have on the incentives and decisions of public officials, and thereby on the pricing and output policies of the industries concerned.[16]

Recognition of these fundamental aspects of human and political life leads to a rather different view of the problem of controlling the nationalised industries. It leads, inter alia, to the following conclusions:

- that advocacy of the marginal cost pricing rule, though well-intentioned, was based on a fundamental misconception of the problem of controlling the nationalised industries;

- that economists' support for the 1967 White Paper was consequently misplaced, and the less ambitious provisions of the 1978 White Paper are to be welcomed;
- that the NEDO proposals for Policy Councils is not only subject to the objections noted by the government, but would probably lead to an even greater misallocation of resources;
- that the 1978 White Paper nonetheless fails to accommodate the political realities;
- that the misallocation of resources is an inherent consequence of nationalisation, and in many cases the public interest could better be served by denationalising industries or "hiving-off" parts of them (possibly making them subject to government regulation);
- that the introduction of private capital and the abolition of restrictions on competition are essential elements of an adequate framework for controlling the remaining nationalised industries.

In the light of the approach taken in this paper, the doctrine of marginal cost pricing no longer appears to be the solution to the problem - in fact, the nature of the problem itself is seen to be rather different. The problem of controlling the nationalised industries is not so much one of providing them with correct instructions on how to proceed, as of providing an institutional framework which will encourage them to move in the right direction and at the same time deter the government from obstructing them. Indeed, the problem is largely to control the <u>government</u> rather than the nationalised industries.

5. The Ambiguity of Marginal Cost Pricing

The principle of marginal cost pricing is sufficiently familiar that it needs no detailed exposition. There are many different ways of deriving the principle, but the general idea is that if price is set equal to marginal cost, and output is expanded to meet the resulting demand, then resources will be allocated efficiently. There is an analgous rule requiring that investment take place to the point where present value of resulting output equals the marginal cost of capital. We need not be concerned here with the precise conditions under which these propositions hold, nor with the extensions to multiple products, joint costs, etc.

It will be argued in this section that the requirement to set price equal to marginal cost is either ambiguous or redundant. In the textbook theory, of course, there is no difficulty: marginal cost is merely the derivative (or slope) of the total cost curve, which is assumed to be given. In practice, however, the concept of marginal cost is capable of many different interpretations, none of which is incorrect. The injunction to set price equal to marginal cost requires the industry to use its discretion; it inevitably amounts to little more than an injunction to set prices which are "reasonable". If, on the other hand, the government supplements the marginal cost pricing rule by a specific criterion for deciding what is "reasonable", the rule itself becomes redundant.

Throughout this section, I shall assume that the industry and the government share a single view as to what technology, products and processes are or will be available, what factor prices will obtain and what the demand curves for the products will be. I shall also assume that the industry does its best to carry out the marginal cost pricing philosophy

prescribed by the government. These assumptions (which, of course, are the most favourable ones for marginal cost pricing) are relaxed in the next section.

a) The meaning of cost

It is a fundamental principle of economics that "cost" does not (in general) mean money outlay, but is to be interpreted in an opportunity cost sense, as the value of what is given up. Cost thus presupposes a scheme of values or preferences, i.e. an objective function. Different objective functions will generate different costs, decisions and prices. The 1967 White Paper provides no explicit objective, and thus no guidance as to what is meant by cost. Each industry is therefore at liberty to choose its own definition of cost - indeed, it is required to do so.

It is surprising to find that the early debates contain virtually no mention of the meaning of cost. It seems to be implicitly assumed that cost is equal to money outlay (on the assumption that factor prices represent the value of inputs elsewhere in the economy). This is undoubtedly in error, insofar as the industries themselves own assets which have alternative uses. Oil, gas and coal reserves can be held back for future consumers; aircraft and railway rolling stock can be used in different locations; steel plants and shipyards can be used to make a variety of types of product. In all these cases, the cost of producing one type of output must take into account the value of the reduced output elsewhere.

Modern analyses generally begin with the objective function - typically, the net present value of output (i.e. producers' plus consumers' surplus). The pricing and investment rules may be deduced from the optimality conditions. Marginal cost then equals money outlay less consumers' valuation of any reduction in output elsewhere.

It is not entirely clear how the nationalised industries do in fact define cost. One popular approach is define the cost of any programme of outputs as the present value of money outlays required.[17] Marginal cost is the change in this present value generated by a change in one of the outputs, on the assumption that other outputs are held constant; this precludes the need to attach a value to changes in these other outputs.

b) The appropriate size of increment

If outputs are infinitely divisible, and the cost function is continuously differentiable, marginal cost is merely the derivative of the total cost function. In practice, there are indivisibilities. Marginal cost has to be defined as the change in total cost generated by a finite increment in output, divided by the size of this increment. But different increments will generate different marginal costs. What is the appropriate size of the increment for purposes of setting prices?

For example, if telephone rental charges are to be set equal to marginal cost, is it appropriate to calculate the cost of one additional telephone in the specific exchange where the telephone is to be added? Or to take the average cost of, say, 100 additional telephones in that exchange? Or the average cost of increasing the number of telephones per year over the next three years? etc. In general, these calculations will yield different answers.

It is evident that the question is equivalent to asking: which units of output are to be regarded as the same for pricing purposes? Is each customer to be charged a different rental for his telephone? Or are all customers in a specific area, or over a specified period of time, to be charged the same price? The 1967 White Paper does not answer these questions,

nor does it provide any criterion by which the industry itself should answer them. The industry must make its own decisions, presumably in the light of what it considers to be a "reasonable" tariff.

c) Changes over time

Following many textbook analyses, the White Paper draws a distinction between short-run and long-run marginal cost. It may be thought that this distinction generates a further source of ambiguity. I shall argue here, with several recent authors,[18] that the short-run long-run distinction is not a helpful one, and that at any time there is only one cost associated with any given action. Nonetheless, an element of ambiguity arises because cost will generally vary depending upon the point in time at which it is measured,[19] and this is not specified by the White Paper.

Conventional analysis represents a firm as having two different cost curves, short-run and long-run, depending upon whether certain factors of production are assumed to be fixed or variable. But part of the firm's optimising problem is precisely to decide which factors of production to vary and which to hold constant; the answer will depend upon the costs of varying these inputs and the likely pattern of future demand. In any given situation, only one cost curve is relevant: that which embodies the optimal response. Cost curves which assume no factors of production are varied, or all factors varied at zero cost, are irrelevant because they pertain to a different situation. It follows that, at any time, there is only one cost associated with any given action.

However, the cost of that same given action will in general change over time as commitments are entered into and opportunities accepted or rejected. To give a simple example, the cost of landing a set of aircraft will be quite different after the airport has been built than before, for afterwards the expense of constructing the runway is sunk, and no longer relevant to cost. Henceforth, the cost of using the runway is its value in the best alternative use.

Similarly, the values of outputs change over time. An airline will generally place a higher value on a specific landing slot after is has committed itself to a timetable than when it is in the planning stage, an even higher value on that slot after the plane has taken off, and a higher value still just before the plane is about to land. Insofar as the airport authority takes into account the values of the airlines, it means that the marginal (opportunity) cost of making available a specified landing slot (to a hypothetical new plane) will increase as the specified landing time approaches, reflecting the reduced period of notice that can be given to the present "incumbent".

Thus, the (marginal) cost of a specified (increment in) output varies according to the date on which that (marginal) cost is calculated. Indeed, insofar as prices cannot be changed continuously, it will generally be the case that prices at any time will <u>not</u> equal marginal costs at that time, even though they were equal to marginal costs at some time in the past.

It should be emphasised that these changes in costs are <u>not</u> the result of changes in expectations or plans. They result from changes in opportunities as a result of gradually emplementing the optimal plan over time, and as such are fully predictable. (Of course, there will <u>also</u> be unpredictable changes, but we are not concerned with these at present).

The question then arises: on what date should marginal costs be calculated for purposes of setting prices? Should aircraft landing fees be calculated before the airport is built (and therefore include the cost of building the runway) or after the airport is built (and include only operating costs)? A related question is how often prices should be re-calculated - every hour, week, year, five years, etc.? The 1967 White Paper provides little guidance on these issues. Once again, the industry itself has to decide what is a "reasonable" policy to follow.

To summarise this section, it has been argued that the instruction to set price equal to marginal cost is ambiguous. In practice, the nationalised industry has to decide (a) what is meant by cost, (b) what increment in output is relevant, and (c) when to calculate marginal cost. The point is not that these decisions cannot be made in a reasonable way; it is that there are many reasonable ways of making these decisions. In effect, it is up to the industry itself to decide what marginal cost will be.

It has long been appreciated, of course, that an industry will need to use its discretion in implementing a policy of marginal cost pricing (e.g. to avoid absurdities such as charging every hundredth passenger the cost of the coach). But the full significance of this point has not been appreciated. If an industry has to decide what is a "reasonable" interpretation and implementation of marginal cost, then virtually any pricing policy which it wished to adopt could be justified as a "reasonable" version of marginal cost pricing. Thus, the instruction to set price equal to marginal cost appears to provide guidance to the nationalised industry and to impose restrictions on its behaviour; in fact, it does neither.

It may legitimately be argued that while the bald instruction to set price equal to marginal cost is open to abuse in this way, more sophisticated variants of the principle are available. The government could explicitly specify an objective function for the industry - here, as indicated earlier, the appropriate objective would be the maximisation of consumers' plus producers' surplus. This would remove all three ambiguities, in the sense that it would define the meaning of cost and provide the criterion for deciding which marginal costs should form the basis of price. In this case, of course, the marginal cost pricing instruction itself is no longer required. The industry can deduce an optimal pricing (and investment) policy from the objective which it has been given, in which the concept of marginal cost plays an appropriate part. The adequacy of such an instruction must then be judged in part by the ease with which it can be monitored.

6. The Problem of Monitoring

If a principal gives an instruction to an agent, it is possible that the agent will fail to carry out this instruction correctly, either because of some unintentional error or because he wishes to further his own ends. The principal must therefore monitor the performance of his agent. In order to do so, he must ensure that his instructions are couched in such a way that they are capable of being monitored, i.e. it must be a matter of fact, and not of opinion, whether the instructions have been carried out. Of course, the instructions must also be designed to ensure that compliance with them actually furthers the purpose of the principal. Our task in this section is to examine how far the government can monitor the compliance of the nationalised industries with the rules laid down in successive White Papers, and how far such compliance fulfils the original purpose of these rules.[20]

The requirement that investment projects be accepted if and only if they pass the specified test discount rate is intended to ensure an efficient pattern of investment. In textbook theory, the set of available projects and their financial and other consequences are assumed to be "given". There is no distinction between a plan and the outcome of that plan. It is merely a matter of arithmetic to check whether the correct set of projects has been accepted. In practice, however, these data are not given. It is necessary to design and manage projects and to forecast their outcomes. Checking the calculations and plans provided by the industry does not in itself ensure that projects have not been overlooked, undervalued or overrated - though it can identify differences in opinion between government and industry, which may or may not be resolved by subsequent discussion.

The same reservation applies to the marginal cost pricing requirement. If demands and costs are assumed given, monitoring is merely a matter of checking calculations (once the meaning of marginal cost has been defined). In practice, costs embody forecasts about future demands and technology, which are necessarily uncertain. Checking calculations does not ensure that these forecasts are correct.

Evidently, the reservation continues to apply, even if the pricing and investment rules are replaced by more a general instruction to maximise net value of output.

In other words, there is no difficulty in monitoring compliance with the formal requirements of the investment appraisal and marginal cost pricing rules, given the assumptions made by the industry. However, this does not ensure that the ultimate purpose which the rules are designed to serve is being appropriately furthered.[21]

Is it possible to monitor these rules by comparing predictions against subsequent outcomes? This certainly provides a useful check on forecasting ability for those projects which are chosen. On the other hand, it does not reveal whether the rejected projects were correctly appraised, nor whether an improved performance was within the range of management. Furthermore, monitoring forecasts may encourage the industry to avoid potentially risky projects in favour of less valuable but more predictable ones. Similar reservations apply to the forecasts of marginal cost.

The third possibility is to look only at outcomes. Since the investment and pricing rules are intended to ensure an efficient allocation of resources, it is necessary to examine and evaluate the allocation of resources which results from the industry's action. The prime difficulty here is that, although the value attached to any outcome might be well-defined in principle (e.g. the area under the demand curve), there is no practical and objective way of ascertaining this value. It is a matter of record how much consumers paid for the various products of the industry, but the magnitude of consumers' surplus is inevitably a matter for conjecture.

The difficulties of monitoring the investment and pricing rules suggest that it may be necessary to settle for rules which are less sophisticated but which lend themselves to more satisfactory monitoring. Consider the financial target: it can be immediately ascertained from examining the industry's books of account whether this target has been met. Insofar as the required rate of return applies to <u>achieved</u> returns, this rule may also be monitored. So, too, can performance indicators if they are properly defined.

We are now able to make a preliminary appraisal of the three White Papers. The 1967 White Paper was inadequate not because it attempted to improve

the allocation of resources - that aim was common to all three White Papers - but because the pricing and investment rules it defined were incapable of ensuring that end. An industry could defend virtually any pricing and investment policy which it wished to adopt as being a reasonable interpretation of the rules and consistent with its own view of the future. The government might hold a different view of what was reasonable, or of what the future might hold - but it could not accuse the industry of not complying with the rules. The rules provided no control over the industry. This would still be true even if the rules were replaced by a general instruction to maximise consumers' plus producers' surplus.

The 1978 White Paper was therefore being realistic in abandoning the attempt to prescribe pricing and investment policies for the industries which could not be enforced, and in emphasising the financial targets originally introduced in 1961. These do provide control, because whether the industries have complied with them is a matter of fact, not of judgement. Performance indicators and cash limits suggested by the 1978 paper can also provide effective control, for the same reason.

However, the fact that an instruction is capable of being enforced does not mean that it will be enforced, or that it is the right instruction. Still less does it mean that a set of instructions is the most effective framework for controlling the nationalised industries.

7. The Nature of Competition

The marginal cost pricing and investment rules are derived from the theory of welfare economics. In the standard exposition, the set of goods and services, the set of technologies, the preferences of consumers, and the available resources are all assumed "given". Perfect competition achieves a

Pareto-optimal outcome because all firms have access to all the given data, and competition between them drives market price down to the level of marginal cost and expands investment to the point where marginal present value of output equals marginal cost of capital. The role of competition is thus essentially to preclude monopolistic distortions in price and output. If competition is not possible, the role of the government (by nationalisation or other means) is to keep price down to the level of (minimum) cost and to keep investment up to the level where marginal profit is zero.

The notion of "perfect" competition is, however, a relatively recent and abstract one, having been gradually developed during the last century.[22] Adam Smith and the classical economists saw competition in the same way as the general public has always seen it: as a dynamic process of rivalry taking place over time, rather than a static equilibrium notion. Firms do not compete by offering the same product at the same price: they try to offer better products at lower prices. Moreover, different firms have different knowledge about what technologies are or could be available, and different beliefs about what consumers want. Profits are earned by being first or most effective in meeting consumers' requirements; losses accrue to the less alert or less creative.

In the real world, competition plays several significant roles.[23] Certainly it is a device for countering monopoly power, keeping down price and keeping up investment, as in the welfare economic model. But it is more than that. It is a device for testing whose ideas about future technologies and demands are correct, and which products and processes are best suited to society's needs. It is also a device for encouraging and effecting a continual improvement in the range of products offered and the means of producing them. Finally, by providing access to decision-making to whoever is sufficiently interested, it is a device for minimising the chances that good ideas will be overlooked.

This alternative view of competition has important implications for the control of the nationalised industries. It is evidently insufficient for the government merely to ensure that prices are not excessive in relation to costs. It is also necessary to ensure the opportunities for reducing costs have not been overlooked, neglected or rejected. Corporate planning, monitored in detail by the government, is often suggested as a way of ensuring such improvements. Periodic reviews by independent bodies such as the Price Commission or Prices and Incomes Board are also advocated.[24] Certainly this ensures that alternative points of view are aired. But the fundamental difficulty is that the future cannot be known, so the "best" policy cannot be established merely by sufficient thought. Insofar as competition is a means of testing out different ideas, it provides information of a kind which is not available to a nationalised industry which is a statutory monopoly, and for which government monitoring is scarcely a substitute.[25] The imposition of a statutory monopoly, or controls on entry, is thus tantamount to discarding a vital source of information. At the very least, it would seem important to supplement government monitoring by the presence of competition wherever possible.

The procedure for setting financial targets also appears in a different light. There was much criticism of the 1967 White Paper for the apparent "overdetermination of the system" implied by the pricing and investment rules and the financial target. If the level of any two of these is specified, it was argued, the level of the third logically follows: it is not possible to set all three independently. It was then recommended that the level of the financial target should be deduced from the specified pricing and investment policy.[26] It is by no means obvious that this is a useful approach. The future behaviour of customers, suppliers and competitors, and the future

developments of the economy as a whole, cannot be known with sufficient clarity and certainty to calculate the precise effects of applying the rules (not to mention the internal complexity of the industry itself). Furthermore, a truly efficient firm will seek and exploit opportunities which are not apparent at the time when the targets are set; the targets should therefore be set above what is currently thought feasible if they are to constitute a proper test of managerial ability.

If targets cannot be deduced from pricing and investment policies, how should they be set? Any estimate of what the industry is capable of is bound to be a matter of opinion. Even if the government and the industry agree on a target, it does not ensure that the target is a sufficiently demanding one. In these circumstances, the emphasis has to be shifted from ex ante appraisal to ex post results. Probably the most that can be done is to require that the industry earn a return comparable to that earned in the private sector. This in itself does not ensure that opportunities are not overlooked, nor does it preclude inefficiencies masked by monopoly profits. Accordingly, the removal of artificial barriers to the entry of new competition is an important adjunct to the setting of financial targets.

8. Motivation

The early debate between economists on the pricing policy of public enterprises had little, if anything, to say about motivation. It was tacitly assumed that the enterprise would carry out the chosen policy to the best of its ability. Recent work on the managerial theory of the firm, property rights and public choice, makes it clear that this assumption is untenable.[27] Members of all organisations must be expected to pursue their own objectives within the framework of rules, incentives and pressures which surrounds them.

The effect of nationalisation, by removing the private owners, is severely to reduce the incentive to seek profit. Other considerations become paramount, including the interests of its customers, suppliers, employees, etc. There may be desires to promote or retard technological progress, to win praise or avoid public criticism, to co-operate with others or to be independent, to favour certain customers or suppliers at the expense of others, and so on.

The choice of actions in furtherance of these objectives is further influenced by the framework of instructions imposed by the government - or, more precisely, by the weight which the government attaches to meeting these instructions. An important illustration may be given.

The nationalised industries currently borrow from the National Loan Fund at a rate which reflects the government's own borrowing power, i.e. it is effectively risk-free, and therefore below the rate at which private commercial organisations can borrow. Partly to counteract this, the nationalised industries were instructed in the 1967 White Paper to appraise investment at a different (and higher) test discount rate. In effect, they were told to act as if they were borrowing at a different rate. Now to satisfy the investment appraisal rule was, as we have seen, merely a matter of presenting the right sums, whereas to meet the financial target on the funds actually borrowed required that these sums turn out right. It is now generally accepted that the test discount rate provided little constraint on investment behaviour, and that a more effective way of influencing investment would be to alter the rate at which the industries actually borrow.[28] One would conjecture that the financial discipline would be even greater if the industries had to borrow from the market, and greater still if private equity capital were introduced. Insofar as the government retains ultimate responsibility for the industry, the risks will not be as great as in a wholly private industry, but nonetheless a significant difference might

be expected from the introduction of private capital in any form.

It is a commonplace that the nationalised industries are not subject to the threat of bankruptcy. What, at first sight, is more surprising is that no penalties at all are specified for failing to meet the government's instructions, nor indeed are any rewards specified for compliance.[29] Why should this be so?

It is not only the nationalised industries which have their own objectives. Precisely the same is true of governments. No doubt they are interested in efficient resource allocation insofar as it leads to greater wealth and a faster rate of growth. In addition, they have to manage the economy as a whole, which requires taking account of general levels of prices, incomes, employment, investment, output, etc. They are also concerned about the distribution of income, and the welfare of specific groups of consumers or employees in particular industries or geographical areas. Governments must therefore weigh up the consequences of any action in all these different respects.

The evidence of the past decade suggests that successive British governments have attached a relatively low weight to microeconomic efficiency in the allocation of resources. Macroeconomic considerations have taken precedence over the pricing and investment rules and the financial targets. Prices have been frozen to combat inflation, then dramatically raised to stem the drain on the Treasury. Investments have been brought forward to provide a boost to output and employment, then cut back because of shortages of funds. The pricing and output policies of the nationalised industries have been used as macroeconomic tools for controlling the economy.

Over the same period, it has equally been evident that the nationalised industries have been used to redistribute income, often at the expense of efficient resource allocation. Mines, railway lines and steel works have been kept open despite losing money. Prices of gas, electricity and telecommunications have been averaged over wide geographic areas exhibiting substantial differences in costs. Sometimes these policies have had the support of both government and industries, but often Ministers have had to resort to "arm-twisting" to persuade industries to carry out the government's wishes, and presumably at other times the government has found it prudent to bow to the industry's wishes.

It thus appears that the government has a rather selective interest in monitoring the performance of the nationalised industries. This is reflected in the content of annual review meetings between industries, sponsoring departments and the Treasury. Details of investment appraisal and tariff structure, and their consistency with the investment and pricing rules, receive significantly less attention than the projected volumes of investment, revenues, borrowing, employment, etc.[30]

It may be argued that the past decade has been an unusual and unfortunate one. In more normal times, greater weight would be given to efficient resource allocation. The Treasury itself argued this in the 1978 White Paper, promising, in effect, that the arm-twisting and over-riding of pricing and investment policy would cease. Within a month of publication, however, the government announced a further freeze on electricity prices.[31] There seems little practical prospect that ministers will not wish to impose their view from time to time.

Indeed, it would seem that the whole history of the nationalised industries is intimately bound up with questions of redistribution of income and the protection of particular interest groups. The recent nationalisation

of aerospace and shipbuilding (and, of course, the public ownership of companies under the N.E.B.) is largely motivated by the desire to minimise unemployment. Presumably the same motive was important in the earlier nationalisation of coal and the railways. Telephones were nationalised to prevent or offset the loss of Crown revenues from the telegraph, which in turn was nationalised to protect the postal monopoly. Taking water, electricity (and gas?) into public ownership facilitated the provision of these utilities in rural areas, financed by the more lucrative urban areas. In other words, it would almost seem that the purpose of nationalisation was not generally to promote the efficient allocation of resources, but precisely to prevent it!

9. A Reappraisal of the Role of Nationalised Industries

If the argument of the previous sections is correct, it suggests a need to review the approach which economists have traditionally taken towards the nationalised industries. It is not merely their pricing and investment policy which is called into question, but their entire role in society and the institutional framework within which they operate.

It was once customary to draw a distinction between the determinants of Production and the determinants of Distribution. Economists have implicitly treated nationalisation as an aspect of Production. It is a means of overcoming the problem of natural monopoly. The task of economists has been to identify the price and output policy which would characterise an industry if it were perfectly competitive. Considerations of income redistribution or political pressures are constraints on the ability of the industry to allocate resources efficiently. These considerations are to be determined (by the government) and the task of the industry is to take them into account with as little disruption to efficient resource allocation as possible.

The view to which we have been led in the previous sections (and which probably coincides more closely with that held by political scientists) is quite the opposite. Nationalisation is an aspect of Distribution. It is primarily a means of redistributing income, either in cash or in kind. Goods, services and employment are provided which otherwise would not be, or not on such favourable terms. Certain groups in society are protected from adverse changes which the market would otherwise generate. These benefits are financed either out of taxation or by cross-subsidies from other consumers. Considerations of efficient resource allocation are relevant only insofar as they constrain the ability of the industry to redistribute income.

If this second view is adopted, it becomes immediately obvious why government and the nationalised industries have shown little interest in the questions posed by economists, and even less enthusasm towards implementing the policies they recommend. It is evidently futile to expect nationalised industries to strive to allocate resources efficiently if cross-subsidation is their very raison d'être.[32]

The alternative view also explains why most of the original nationalised industries were granted statutory monopolies even though (as alleged natural monopolies) they should not have needed this protection. Cross-subsidisation is impracticable in the face of competition.[33]

The effect of taking the alternative view of the role of nationalisation is not so much to suggest different answers to the standard questions, as to suggest that different questions be asked:

What determines which interest groups receive benefits and which groups pay for them? What are the limits to the extent of redistribution? What are the relative roles of government and the Board of the industry in this process? Under what conditions is nationalisation chosen rather than some other method of redistribution? What pattern of redistribution ought to take place? Is nationalisation an efficient means of effecting redistribution? How far can and should considerations of allocative efficiency be divorced from redistribution? What is the appropriate framework for the nationalised industries to work within? and so on.

Our immediate task is to consider whether nationalisation is an appropriate method of redistributing income. Only in the light of the answer to this can we determine what role nationalised industries should play in the British economy, and what framework of control should be imposed upon them.

10. Nationalisation as a Means of Income Redistribution

Nationalisation is only one of many methods by which the government intervenes to redistribute income. Other methods include taxes and subsidies, import duties, legal controls, informal pressure, etc. Are there reasons to believe that nationalisation is a particularly effective method in some circumstances? It might be argued (1) that the industry itself is more familiar with the needs of its customers, employees and suppliers than is the government or any agency set up to redistribute income; (2) that public ownership reduces the likelihood of funds being absorbed by the owners or employees where this is not intended; or (3) that cross-subsidisation between customers is difficult to effect in a private firm.[34]

Whatever merit there is in these arguments, there is one additional consideration which seems important, namely, that nationalisation is a convenient method of redistribution. Certainly the act of nationalisation itself is a difficult step. But once this has been taken, there is no further need for explicit Parliamentary approval and bureaucratic procedures, all of which can be time-consuming, expensive and uncertain in outcome. It requires only that the Minister and/or the Board of the industry be prepared to implement the measure involving the redistribution. Relatively little publicity and public debate is involved.

This convenience of implementation, which is a major advantage of nationalisation from the point of view of the beneficiaries, is precisely the major disadvantage from the point of view of society as a whole. Redistribution takes place without fuss because the nature and extent of the redistribution are obscure; so, too, are the extent and location of the costs. In many cases, those who ultimately pay are only dimly aware of this, and certainly have not volunteered to do so. Nor has the pattern of redistribution usually been sanctioned by society as a whole, via Parliamentary debate or government decision. Ministers are extremely reluctant to issue explicitdirectives, for which they can be held accountable. For the most part, redistribution via nationalised industries reflects the politcal power of pressure groups rather than a unanimous and considered "social welfare function".

It is true that the original decision to nationalise an industry is an explicit one, subject to due parliamentary procedure - though even here the costs and effects may be obscure to parliament and the electorate. But providing the industry succeeds in breaking even, its subsequent operation is, in practice, largely independent of parliament. Since the future development of the industry, and the market in which it operates is not known with

certainty, the future pattern of redistribution is also unpredictable in detail. On the other hand, there is no doubt that the position of the original beneficiaries becomes entrenched; changing the pattern of redistribution or reducing its extent is a difficult and thankless task.

The case against using the nationalised industries as a means of redistributing income is thus not that the resulting redistribution is excessive or in the "wrong" direction (though both of these may be true). There are extensive subsidies channelled to and through the private sector which may be comparable in magnitude and direction. The objection is that the pattern and cost of income redistribution consequent upon nationalisation is neither well known to, nor explictly approved by, society as a whole. Nationalisation is a means of redistribution which is not conducive to informed public debate, and which inevitably leads to "unauthorised" redistribution; in that respect, it is inferior to other, more explicit, methods of redistribution.

Several conclusions follow from this. (1) The case for nationalisation, rather than some other method, as a means of achieving social or political goals, must be argued more explicitly than it hitherto has been. (2) The disadvantages of "unauthorised" redistribution of income must be set against any advantages of nationalisation in achieving a more efficient allocation of resources elsewhere (e.g. in countering natural monopoly). (3) Where nationalisation is used as a means of redistributing income, explicit directions should be given by the Minister (for which he will be held responsible in parliament) as to the nature and extent of redistribution, the means by which it is to be financed, the scope for discretion left to the industry itself, and the likely effects of these directions.[35] (4) Devices should be sought to reduce as far as possible the scope and incentives for "unauthorised" redistribution on the part of both government and industry.

In the light of this analysis, the NEDO proposal of Policy Councils is subject to severe deficiencies. The appointment of major interest groups to the Council in effect "authorises" the present pattern of redistribution, regardless of whether this is acceptable to society as a whole, and facilitates subsequent unauthorised changes in this pattern.

11. Nationalisation as a Means of Efficient Resource Allocation

It is argued that nationalisation is conducive to the efficient allocation in two major respects: it enables the structure of an industry to be substantially modified, which would otherwise only take place, if at all, with delays and suffering;) second, it enables the advantages of large-scale organisation (often nation-wide) to be enjoyed without the threat of exploitation by a private, perhaps natural, monopoly.

There are two difficulties with such arguments. The first is that we simply do not know, on theoretical grounds alone, what structure of industry is most efficient. Moreover, what is an optimal structure will change over time as demand and cost conditions change and new technologies are developed. The size and scope of each industry needs to adapt, in ways which cannot be foreseen in advance.

A serious disadvantage of nationalisation, especially when accompanied by a statutory monopoly, is that it imposes an inflexible and perhaps inappropriate structure on an industry. The power of competition to experiment and adapt is relinquished. There is a built-in bias in favour of the status quo, making it necessary to convince almost everyone concerned, even those who are adversely affected, before any change in structure is contemplated.

The second difficulty with the argument for nationalisation is that, while it identifies a possible problem (e.g. natural monopoly) it does not establish that nationalisation is a more effective means of handling it than any other market structure.[36] Various alternatives are available.

(1) Where there is substantial competition from abroad, a private organisation even on a national scale may have little monopoly power.

(2) The same applies, though to a lesser extent, where there is substantial competition from substitute products.

(3) Industries may be jointly owned by government and private industry, so that the government can influence the firm's behaviour as a substantial shareholder.

(4) A private organisation may be regulated, at least where its monopoly power seems greatest.

(5) Private firms may compete for the market, for a specified period of time, by offering more favourable terms than other bidders.[37]

What are the comparative mertis of nationalisation and regulation? Nationalised industries have an incentive to charge monopoly prices only insofar as the complaints from the affected customers are outweighed by the gratitude of those to whom the resulting revenues are redistributed. But there is evidence that this does happen,[38] and furthermore any misallocation of resources resulting from pricing below cost in other areas must be counted as a disadvantage of nationalisation.

The profit motive associated with private ownership, which provides greater incentive to raise prices, at the same time provides greater incentive to seek out and adopt more efficient ways of doing things (i.e. to reduce costs) and less incentive to practice income redistribution (i.e. to cross-subsidise). Of course, regulation reduces all three of these incentives, is costly, and induces distortions of its own.[39] Nonetheless, regulated private ownership is probably superior to nationalisation if the objectives are efficiency and adaptability to change.

The type of ownership is likely significantly to affect the nature and extend of government control of the industry. We have seen that the nationalised industries have been used fairly freely as instruments of macro-economic policy and as devices for redistributing income in response to political pressures. The costs of these policies have fallen partly on consumers and partly on taxpayers. If the industries were privately owned, or even had an element of private shareholding, it would be difficult for the government to exert the same influence; certainly, the opposition would be stronger and more concerted. From the government's short-run point of view this may seem a disadvantage; however, the foregoing argument suggests that any protection which can be gained for the industries (and the government) against "unauthorised" political pressures is to be welcomed.

12. Summary and Conclusions

Let us now attempt to draw together the threads of the argument in this paper.

For the last forty years or so, economists have tended to see public ownership (and regulation) as a means of overcoming the problem of natural monopoly. Accordingly, their task has been to design rules for pricing and investment which will reproduce the working of a perfectly competitive industry.

Rules of this kind were eventually embodied in the 1967 White Paper on the financial and economic obligations of the British nationalised industries. However, there was resistance on the part of the industries, and the government issued over-riding directions as a means of implementing its macro-economic policies.

Many economists argued that the 1967 principles should be clarified, extended and reaffirmed. Other observers argued that any such "arms-length" relationship ignored the prevailing political pressures. In its 1978 White Paper, the government claimed to adopt the economists' view, but in fact the specified pricing and investment rules became optional rather than compulsory.

In the present paper I have argued that the 1967 pricing and investment rules were inadequate to achieve the desired aim of increased efficiency in resource allocation, since (i) these rules were (unlike the financial targets) couched in such a way that compliance could not be effectively monitored by the government, (ii) they took no account of the need to generate improvements in efficiency and stimulate alertness to new opportunities for improving resource allocation.

This, I suggest, is inherently the case with nationalisation. Its fundamental purpose is not to increase efficiency but to redistribute income, if necessary at the expense of efficiency.

Any proposed framework for controlling the nationalised industries must first take a view on this issue. I have argued that nationalisation is an undesirable means of redistributing income, not because the redistribution is undesirable per se, but because nationalisation tends to conceal the direction, extent and cost of redistribution. To a significant extent, the redistribution which takes place reflects not a deliberate decision by society but successful political pressure by special interest groups.

The "economic" arguments for nationalisation are also weak: it tends to rigidify the structure of the industry, reduce the incentives to seek increased efficiency and increase the incentives for "unauthorised" redistribution of income. There is thus a strong case for reducing the extent of nationalisation.

For those industries that remain nationalised, the introduction of private capital and competition is more likely to stimulate efficiency than is government monitoring; indeed, an important part of the problem is to reduce the extent of government influence, and private capital and competition are likely to have this effect.

Finally, the nationalised industries should be charged a market rate of interest on their borrowing from the government; financial targets should be imposed to ensure a rate of return on this borrowing equivalent to that earned in private industry; and any social or political objectives should be explicitly specified.

The practical implementation of these ideas would require a separate paper, taking account of the particular pressing problems in each industry, the scope for competition and the attraction of private ownership there, and the political pressures for or against a change. The purpose of the present paper will be served if it leads to a questioning of the economists' traditional approach to the control of the nationalised industries.

My theme may briefly be restated. The present constitution of the nationalised industries is inherently incompatible with the pursuit of efficient resource allocation. If it is desired to pursue that aim, then nationalisation is not the appropriate means. For those industries which must nevertheless remain nationalised, the main tasks are to introduce incentives to efficiency and to restrict the ability of the government to thwart this objective. If, as I suspect, the introduction of elements of private capital and the relaxation of the statutory monopolies can substantially achieve these tasks, the problem of redesigning optimal pricing and investment rules is no longer of much consequence.

Footnotes

1. A comprehensive introduction to the subject is given by Tivey (1966).

2. E.g. Meade (1944), Fleming (1944, 1950), Coase (1945, 1946), Wilson (1945), Ruggles (1949-50 a,b), Graaff (1957), Wiseman (1953, 1957), Thirlby (1946, 1960), Farrell (1958). A similar list could be drawn up for the U.S.A.

3. Reported by Coase (1970 p.115).

4. Treasury (1961).

5. Treasury (1967).

6. Cf. Turvey (1971).

7. Again restricting the list to Britain, articles include Meek (1963, 1968), Turvey (1964, 1969), Rees (1968), Littlechild (1970), Kay (1971), Pyatt (1972), Gravelle (1976, 1977); textbooks include Turvey (1968), Millward (1971), Webb (1973, 1976), Rees (1976); the only critical papers of which I am aware are Nove (1973), Littlechild (1977 pp 12-15, 1978 ch. VII), Wiseman (1978).

8. Cf. Heald (1978), Webb (1979), Rees (1979).

9. National Economic Development Office (1976).

10. Treasury (1978).

11. op.cit. fn.8.

12. E.g. J. B. Heath in Select Committee (1979 p.2), also Garner (1979).

13. The Guardian 3, 21, 23, 24 July and 8 August, Daily Mail 25 July. In addition, the Civil Aviation Authority has ordered British Airways to relinquish Scottish air routes to private airlines, and British Rail is proposing a partnership with the private sector (The Guardian 23 July and 1 August). The National Enterprise Board has to dispose of assets worth £100m. and BNOC oil fields worth £1b. are to be sold off (The Guardian 20, 27 July).

14. Cf. Baumol and Bradford (1970).

15. E.g. Hayek (1935, 1937, 1940, 1948), Kirzner (1973), Thirlby (1946, 1960), Wiseman (1953), Alchian (1969), Alchian and Allen (1974), Shackle (1961, 1972, 1979).

16. E.g. Buchanan and Tullock (1962), Buchanan and Tollison (1972), Buchanan (1978), Alchian (1965), Alchian and Kessel (1972), Stigler (1971, 1975), De Alessi (1974), Wiseman (1978).

17. Turvey (1969).

18. Alchian (1959), Turvey (1969); see also Rees (1979 pp.10-11).

19. As stressed by Wiseman (1957).

20. The argument of the section was originally developed by Thirlby (1946) and Wiseman (1953). For a recent and very thorough analysis in similar spirit, see comments by Heath in Select Committee (1978).

21. Cf. Garner (1979 p.16) "Pricing by reference to long-run marginal costs . . . does not compel efficiency in planning or performance. The appraisal of investment by means of a test discount rate . . . provides no protection against unrealistic forecasts of future demand or managerial failures to arrive at the correct technical and commercial judgements".

22. McNulty (1967).

23. Hayek (1948).

24. E.g. Garner (1979).

25. Cf. Hayek (1978, ch.12) ". . . competition is valuable only because, and so far as, its results are unpredictable and on the whole different from those which anyone has, or could have, deliberately aimed at", and ". . . I propose to consider competition as a procedure for the discovery of such facts as, without resort to it, would not be known to anyone, or at least would not be utilised".

26. E.g. Webb (1973 pp.160-4, 1979), Heald (1978), Rees (1979 p.24).

27. See references fn.16.

28. E.g. comment by W. Simpson in Treasury (1979 p.51) "If the Treasury really wants Nationalised Industries to follow the RRR [Required Rate of Return], then the easiest way to get understanding is to convert the shadowy concept of RRR into a real cost by lending money to Nationalised Industries at the RRR".

29. This has frequently been noted e.g. Wiseman (1967 p.693), Webb (1973 p.160).

30. An economist on the Board of one nationalised industry has remarked that he has never heard the words "marginal cost" mentioned there. An enthusiastic application of marginal cost pricing would probably embarrass both the government and the industries.

31. The Guardian 16 March 1979.

32. Cf. the remark by Tivey (1979 p.164) concerning "the second greatest illusion . . . in the history of the industries - that they could be simply told to operate 'commercially'."

33. The standard view is expressed by Tivey (1966 pp.166-7) "There has been a general tradition that publicly owned enterprises are conducted as monopolies. In part this was because it was believed that competition could not work without the profit motive; partly because it was thought that fair competition between privately owned and publicly owned concerns would be difficult to contrive; and partly because the industries concerned were 'natural' monopolies."

These beliefs were no doubt held, but do not suffice to explain why competition should be explicitly prevented.

34. Foster (1971 ch.15) discusses some of these arguments (and indeed most of the issues discussed in this paper).

35. The three White Papers have all promised that such explicit directions will be given, but Ministers have been distinctly reluctant to do so. Cf. Foster (1971) and the discussion by Heath and Garner in Select Committee (1979).

36. It has been argued that this is true of much of welfare economics, e.g. Demsetz (1969), Stigler (1975 ch.7).

37. Demsetz (1968).

38. E.g. "For example, the Sealink subsidiary of British Rail was a staunch defender of a cartel arrangement which the Monopolies Commission found to be against the public interest." (Rees 1979 p.30).

39. De Alessi (1974) surveys the empirical evidence from U.S. electricity utilities.

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