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SOCIAL GAIN, WELFARE, POLITICAL ECONOMY and a' that

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The economic criterion of public investment choice is aggregate consumers' surpluses and producers' rents generated by the investment. Its analytical model is a social revenue function and a social cost function. It is a welfare criterion only so far as efficiency is a welfare component and then subject to severe limitations. It is argued here that the economist's conclusions rest in part on a set of value preferences; therefore, the test of their rightness is in part their acceptability to the public choice-maker.

Political choice among alternative investments in public enterprise is not new. There is, however, growing awareness that sound criteria for choosing are needed and that new tools are available to facilitate the process.

In an earlier day the public choice-maker turned for advice to the engineer and the businessman who were familiar with the kinds of investments being considered. More recently he has discovered the expertise of the economist and increasingly calls upon him to describe the probable economic outcomes from alternative investments.

Economists, confronted with this challenge to the workability of their sacred writ, responded with critical self-appraisal, with new thoughts about their conceptual systems, and with operational models, more generally called benefit-cost analyses, which are improvements over earlier models available for the empirical testing of these systems. But perfection has not yet been reached. Debate continues among economists and between them and their antagonists over the not-so-easy art of predicting in economic welfare terms the outcomes from public investment of the citizen's funds. Many decisions regarding public investments will continue to be made without benefit of the economist's assistance. More unsettling to him, perhaps, will be those decisions made in disregard of his conclusions. This hurt-feeling syndrome leads to a three-part question for which we shall suggest some answers.

1. What is the nature of the economist's criterion and its operational model?
2. In what sense is it a criterion of welfare?
3. How do we test the rightness of the economist's conclusions?

The Economist's Criterion

The choice criterion applied most easily and objectively by the economist is economic efficiency or net aggregate gain to the collective household. This seems simple enough. Just determine the market or market-like net gains from alternate public investments and select those showing the greatest positive magnitudes until the available funds are exhausted. Everyday familiarity with the world of private decision-making accounts for this easy carry-over of market criteria to the less familiar world of collective household choosing.

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Yet the market economy, basic to the private enterprise system, cannot evaluate gains and losses to the public household nor, in welfare terms, ration expenditures between the public and private sectors of the economy. It was designed instead to ration, through bargaining, productive resources and consumption goods among those who compose the public household. It was, in fact, designed to free the individual decision-maker from interference by the collective choice-maker. Adam Smith's "unseen hand", operating within a competitive market, was relied on to maximize the sum of individual welfares by harnessing the self-interest of competing individuals. Even such an aggregate of individual welfares can be maximized in an impersonal market system only under conditions of perfect competition and decreasing returns to all factor inputs and only within a vaguely acceptable income distribution.

As a matter of fact, maximization of the public economy cannot be achieved by market bargaining although the conventional wisdom of economics is biased in its favour. Conceptual systems to determine collective maximization of economic gains have not attained the sophistication of those developed to determine maximized individual net returns. Urgently needed are principles to guide maximization of economic welfare for the aggregate household. The welfare economists who might have filled this need have devoted their attention to the form and content of the institutional matrix necessary to attain, *through market bargaining,* maximization of aggregate economic welfare in a micro-unit world. However, bargaining among micro-units in the market cannot register the collective preferences of the public household; the optimum of economic welfare cannot be achieved through a micro-unit market regardless of the perfection of its institutional matrix. Even if operated in a theoretically perfect manner, a market economy by-passes certain collectively important economic values—the values of public goods, merit goods and externalities.

Public goods are simultaneously produced and consumed by the collective, no one in the affected group is excluded or can exclude himself from their enjoyment, and consumer preferences for them cannot be revealed in the market—only in the political arena.

Merit goods are those chosen by the collective to be rationed politically to achieve a distribution of benefits and costs more acceptable to the society than that resulting from consumer sovereignty expressed through markets.

Externalities are values that inescapably affect persons other than those whose actions create them.

These three collective goods, by-passed by the market economy, will be referred to, herein, as *social goods* or *social values.*[1]

The economist's criterion of aggregate gain from a public investment includes more than the total of micro-gains generated directly through the market by that investment. *The economic criterion for choice by the public household between alternative public investments is the aggregate of consumers' and producers' surpluses that are generated directly and indirectly by those investments and that accrue to the users of both*

[1] Musgrave, R. A. *The Theory of Public Finance* (International Student Edition; McGraw-Hill Book Co., New York and Kogakusha Co., Tokyo, 1959). The terms *public goods* and *merit goods* and their meanings are from Musgrave. He does not include externalities in his classification.

private and social goods.[2] As Kuhn put it, benefit-cost analyses should be classified as attempts to measure consumers' surplus.[3]

The Analytical Model of the Criterion

The economist's analytical model rests in part on the following assumptions: first, a public enterprise is a system for producing and maximizing want satisfactions in a world of production functions; second, the quantity to be maximized is the value of those satisfactions to the persons for whom they are produced rather than to their producer. But these are the same assumptions one would use in analyzing private enterprise. Thus, the analysis of decision making in public enterprise has the same conceptual form as does analysis of private enterprise; they differ only in their empirical content.

The two analytical concepts basic to the economic analysis of public enterprise are *consumption functions* and *production functions.*

Consumption functions for public enterprise output can be translated directly into demand or marginal revenue functions. In this form they express money-valued satisfactions per additional unit of that output. Herein, the term *marginal social revenue function* will refer to this relation; it is directly comparable to the term "marginal revenue function" or "marginal value product" as used in micro-firm analysis. It encompasses simultaneously the notions of consumption, demand and marginal revenue functions for public enterprise output.

Production functions conventionally portray marginal output per additional unit of input into the public enterprise. In this form their expression is inverse to that of the consumption functions. But in order to relate consumption and production functions, they must be expressed in the same way. The production functions must be inverted to express input per additional unit of enterprise output; by this inversion they become supply or marginal cost functions, herein referred to as *marginal social cost functions.*

Given these two functions it is easy through the equi-marginal principle to determine the public enterprise which is economically most efficient in an array of alternatives. The difficulty lies in their empirical formulation.

The marginal social revenue function for the output of a public enterprise is an aggregation of many particular revenue functions. These functions differ widely depending on the nature of the users of the output —whether firms or consumers, whether primary users or those indirectly

[2] I am concerned herein only with *partial* or *second best* maximizing choices from among specific alternatives within a public budget. Consequently, when I speak of "welfare of the public household", "aggregate economic welfare", or "Pareto-efficient welfare", I refer only to the welfare engendered in the aggregate economy *by virtue of* choices made from among an array of discrete public investment alternatives restrained by a total public budget exogenously determined. I am not attempting to describe choices to attain a true *maximum maximorum* of economic welfare involving public investment as a sector within the economy as a whole. In short, when I speak of an efficiency maximum, I mean only a choice that maximizes gains over sacrifices from some one *particular* choice.

[3] Kuhn, T. *Public Enterprise Economics and Transport Problems* (Univ. of California Press, Berkeley, 1962). Kuhn refers only to consumers' surplus as the measure of public benefit, failing to recognize that producers' surpluses are of identical origin and significance and equally are net social gains from public enterprise. In this connection see Mishan, E. J. "Rent as a measure of welfare change", *American Economic Review* 49: 3, June 1959, p. 386.

affected by them—and depending on the nature of the demand function for each product. Because a public enterprise will typically produce more than one product, some means is required for summing them into a single magnitude. Usually this means will be money values in which case the aggregate function becomes, as described above, a marginal revenue function. In the aggregation process revenue functions for private goods will be summed "horizontally" along the quantity axis whereas revenue functions for public goods will be summed "vertically" along the price axis. The two resulting revenue functions will also be summed "vertically" to derive a total revenue function for the scheme as a whole.

Users of public enterprise output can be divided into three classes: primary final consumers, primary firm consumers, and all others experiencing effects induced by these primary consumers. The gains originating among final consumers both direct and indirect are consumers' surpluses whereas those arising among firm consumers both direct and indirect are producers' rents. The gross gain function for the whole enterprise is the summation of these surpluses and rents into a single marginal social revenue function for the composite output of the public enterprise. This complex function is built up from several elements.

The first element concerns *primary final consumers* of enterprise output and is the aggregate of their marginal consumption functions for each product of the public investment minus the aggregate of their marginal cost functions for acquiring each product and the complementary non-enterprise products required with each. The difference between these two aggregate functions for each product of the investment is the aggregate primary final consumers' surplus function for each product of the public enterprise. The aggregate primary final consumers' surplus function for *all* products of the investment is a summation of these consumers' surplus functions for each separable product.

The second element concerns *primary firm users* of the output and is the aggregate of the marginal revenue functions generated by them for each product of the public investment, minus the aggregate of the marginal cost functions incurred by them in acquiring each product and the other inputs required for its conversion into secondarily useful output. The difference between these aggregate functions for each product of the investment is the aggregate producers' rent function generated for each product of the enterprise by primary firm users. The aggregate producers' rent function for *all* products of the investment is a summation of these primary rent functions for each separable product.

The third element concerns *final consumers* of the output *of the primary firms* described above. It is the aggregate of these consumers' marginal consumption functions for each product of the above class of primary firms minus the aggregate of the marginal cost functions incurred by these consumers in acquiring each product and the other complementary products required with each. The difference between these functions is the aggregate consumers' surplus function for each product of the primary firms to its consumers who are one step removed from the public enterprise. In similar fashion to the elements above, the aggregate consumers' surplus function for the totality of secondary products of the investment is a summation of these functions for each product of the primary firm users.

The fourth element is the total of consumers' surpluses and producers'

rents induced externally in space and time by the actions of the above three classes of consumers.[4]

The marginal social revenue function for the output of a public enterprise is the aggregate of the above consumers' surplus and producers' rent functions that are generated by direct and indirect users of that output. The function, though applied to the public enterprise, does not arise within it but is derived from the private consumer and producer sectors of the economy. Thus, the public value of the output of a public enterprise is sought within the private sector of final and firm consumers—not within the public enterprise. The gross gains attributable to alternative scales of the public enterprise are the integrals of its marginal social revenue function up to each scale point and may be referred to as the *net prime benefits*[5] function generated over a range of scales of that public investment. The net prime benefits function is a *total* revenue function derived from the marginal social revenue function.

Only one blade of the scissors of economic analysis—the revenue or gain blade—is represented by the marginal social revenue function and its derived net prime benefits function. For an economic conclusion relative to each separate public enterprise it is necessary that the revenue function be debited for the sacrifices required of the public for investment in and operation of that enterprise. For this purpose the analyst must develop a marginal social cost function for the output of each alternative public enterprise.

The inputs to the public scheme are for the most part productive goods and services acquired from the private sector through the market. The measure of the sacrifices incurred in committing these inputs to a public enterprise may reasonably be taken to be the money cost of their acquisition in the market. This assumes simply that money prices are opportunity costs since they measure satisfactions foregone when inputs are committed to this public use rather than to alternative uses in the private economy. Important exceptions to the use of market prices as measures of opportunity costs are market interest on capital funds when acquired through taxation or general government borrowing and market wages for labour services acquired during times of under- or over-employment. These exceptions result from noticeable imperfections generally apparent in markets for these factors. For these exceptions opportunity costs must be imputed by estimating the marginal social opportunities sacrificed by diverting capital and under- or over-employed labour to the public use.[6]

[4] I recognize and am sympathetic with the tendency by some analysts to question the operational quality of such super-induced net surpluses as constitute the fourth element. However, the issue regarding them has to do with empirical operationalism, not with their conceptual existence. It is in relation to the latter that I include the category here. In so far as, in practice, this class of benefits proves to be inoperable or non-existent, it simply assumes a zero value in the analysis.

[5] See Kelso, M. M. "Economic analysis in the allocation of the federal budget to resource development", Chapter 5 in Smith, S. C. and Castle, E. N. (eds.), *Economics and Public Policy in Water Resource Development* (Iowa State Univ. Press, Ames, 1964), p. 67.

[6] The imputation of the social opportunity costs of capital diverted to public investment is discussed in the following references, among others: Krutilla, J. V. and Eckstein, O. *Multiple Purpose River Development* (Johns Hopkins Univ. Press, Baltimore, 1958); Eckstein, O. "A survey of the theory of public expenditure criteria", in Buchanan, J. M. (ed.), *Public Finances: Needs, Sources, and Utilization* (Princeton Univ. Press, Princeton, 1961); Marglin, S.A. "The opportunity cost of public investment", *Quarterly Journal of Economics* 77: 2, May 1963, p. 274; Feldstein, M. S. "Net social benefit calculation and the public investment decision", *Oxford Economic Papers* 16: 1, March 1964, p. 114.

Cost estimates will be made for a range of scales of each separate public enterprise. From these estimates the analyst will derive the marginal social cost function for increasing scale of each enterprise which, when related to its companion marginal social revenue function, provides the choice criterion as to scale of each single enterprise and as to relative economic efficiency among enterprises.

The marginal social revenue function for the single public enterprise will in its relevant range certainly decline as scale of the enterprise increases because it includes cost functions for private output that will certainly be increasing. The marginal social cost function for the same single public enterprise may in its relevant range be either increasing or decreasing, depending on the conditions of production in each case. We can represent geometrically the aggregate gains and costs of a single public enterprise as shown in Figure 1. The vertical hatches mark the area of net aggregate economic gain; the horizontal hatches mark the areas of net aggregate economic loss. Let us call these, respectively, simply "social gain" and "social loss" remembering, however, the limitations of these simplified labels.

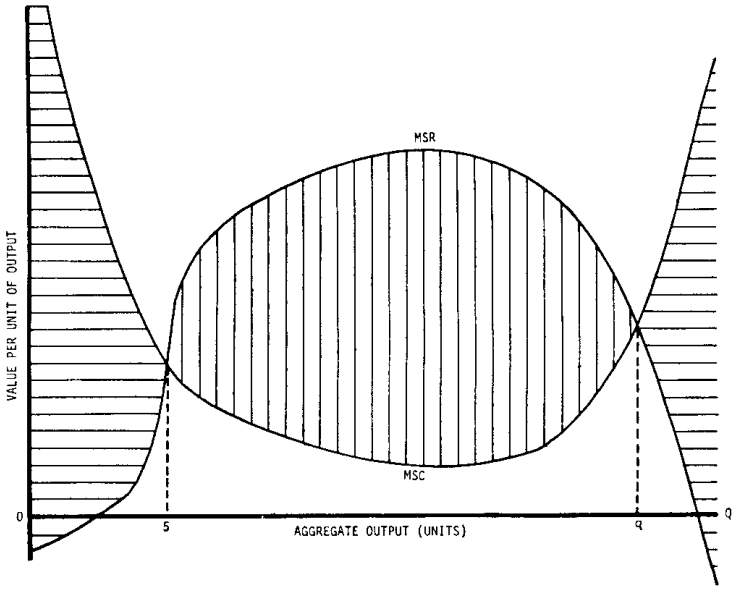

FIG. 1—Marginal social revenue (*MSR*) and marginal social cost (*MSC*) functions for a single public enterprise.

For each alternative quantity of output from 5 to q from this single public enterprise there is a social gain. For outputs from zero to 5 and again beyond q there is a social loss. The aggregation of social gains (and

[7] There is, of course, the possibility that the marginal social cost function may cross the marginal social revenue function before the former has reached its minimum, in other words, while marginal social cost is still falling. In this event average social cost will be above marginal social cost at the output where marginal social cost equals marginal social revenue and the much discussed conundrum concerning the appropriate criterion for a maximizing choice and for pricing the output presents itself. We can do no more here than recognize the possible existence of this problem in particular instances.

losses) realized on output up to q together with social losses for quantities produced beyond q is the net social gain (which may be negative) received from alternative scales of that enterprise.[7] The sum of social gains and losses on units of output up to q is the maximum possible social gain from this public enterprise.

To this point the troublesome problem of the time dimension of the functional relations has been carefully avoided. The criterion of economic choice has been phrased as if the net social gain were a single-valued outcome emerging immediately upon committing a single-valued input to the public enterprise. This is a concept of economic statics and is an intellectual simplification legitimate only for expository purposes. As any economist is well aware, time must be recognized as a variable in any analytical model for solving real-world problems. The inputs to the public enterprise, the products that flow from it, and the net gains generated by it in the private sector are *streams* through time and not single-valued simultaneous quantities. Unit values expected to arise at different points in time carry different weights in present decision-making; time distributions of the revenues and costs of the many kinds of outputs and inputs that compose the enterprise will differ widely; time connected depletion of some or all of the natural resources embraced by the enterprise may be an element to be reckoned with. For all these reasons the marginal social revenue and cost functions must have a dynamic dimension and must be cast in a present value form for usefulness in public decision-making. This is accomplished through the process of discounting which will not be elaborated here.[8]

Is the Economist's Criterion One of Welfare?

It is useful to begin by reviewing what the economic criterion tells the analyst. It tells him in terms of net social benefits expressed in money terms how much one project is better or worse than the best among all other projects at that or any other site (or time). It indicates which project design among the alternatives examined is best in terms of economic efficiency. A prospective *negative* net social gain from a public investment does not mean that the proposed investment will be an economic failure in the same sense that a negative finding would foretell economic failure of a prospective private firm. Neither does it mean that aggregate social welfare in all its many guises will be insufficient to cover the requisite opportunity costs; it suggests, rather, how much any broad social benefits flowing from the scheme but not included in the economic analysis will "cost" the society if the scheme is undertaken. Nor does such a prospective *negative* outcome mean that the private sector firms using the project's outputs will be economic liabilities to the society. Given a correct analysis of the private sector associated with a public investment, only firms and consumers generating positive net gains directly or indirectly from use of public enterprise output will have been

[8] Discounting values to eliminate differences that arise due to time is easy to conceptualize but not easy to do in practice. What should be used as a time discount factor? What is the time earning power of capital in alternative pursuits? Although these are important questions they will not be discussed in this essay. Discussion of the knotty problems involved will be found in Marglin, S.A. "The social rate of discount and the optimal rate of investment", *Quarterly Journal of Economics* 77: 1, Feb. 1963, p. 95.

incorporated into the analysis. A negative net social gain means, then, not that the associated private sector firms will be, as firms, uneconomic but that the total gains they will generate will not be sufficient to cover the opportunity costs of the public funds used to build and operate the public enterprise.

On the other hand, neither does a prospective *positive* net social gain from the enterprise mean that the associated private firms and consumers will be economically viable. It might mean that they will generate more indirect social gains than direct negative rents and consumers' surpluses. Were the situation of this sort, the criterion indicates that the indirect gains to the aggregate economy will more than offset the direct losses to the individuals. This is sufficient for the needs of the efficiency criterion. Admittedly left unresolved are the ways and means for providing the subsidy such non-viable firms and consumers will require if they are to remain active and generate the indirect gains that, in this case, make the whole scheme economically worthwhile.

Is the economist's criterion one of welfare? It certainly is so far as efficiency is an element in welfare. Efficiency has to do with the kind and size of pie produced relative to the costs incurred in its production. Maximized efficiency results from producing the kind and size exhibiting the largest net gain. Benefit-cost analysis is an efficiency criterion of welfare because it is concerned with ranking projects of differing kinds and scales in order of their abilities to produce net gains. This has led many economic analysts to assert that because they have applied a criterion of efficiency their conclusions are value-free; therefore they may be excused from saying whether one public enterprise is best or better than another; they need make only the objective statement that it will generate an aggregate net gain or loss of a specified numerical magnitude.

Economic welfare implies also a distributive or equity question: "How will the pie be cut and who will get the pieces?" This element is excluded from the efficiency criterion but it cannot be excluded from the analytical parameters of the efficiency model. Even in the efficiency model, identification of its elements as benefits or as sacrifices and selection of a scale for their quantification requires value judgments in the form of sets of definitions and rules for measurement. The question is: Whose definitions and whose rules? Furthermore, the content of these definitions and rules will be affected by whatever distribution of income within the society is taken by the analyst to be a parameter of his model. The distribution he assumes may be one he presumes to be best or to be acceptable or to be that which really exists. Whichever it is, a value judgment by the analyst underlies its selection. Can he, then, take refuge under the efficiency cloak and assert that his criterion reveals whether the proposed public enterprise is efficient or inefficient, but that his criterion does not permit him to say whether the enterprise is socially best or even socially acceptable?

Since value judgments are implicit even in the efficiency criterion, it is doubtful that the analyst can assert the investment's *bestness* even in efficiency terms; his assumptions affect his conclusions as to the economic efficiency of the enterprise. To complicate the problem still further, the

public investment itself may alter the income distribution parameter assumed in his model thus altering the content and scale of enterprise that would be most efficient. In short, the scale and kind of what seems to be the most efficient public enterprise will be changed by its own consequences thereby upsetting the very notion of a determinate efficiency criterion. This is frustrating, to say the least. The analyst cannot say the proposed investment is welfare best in the full meaning of that criterion because he has cast his criterion only in efficiency terms. Neither can he say it is efficient best because the value and distributive parameters that surround the efficient outcome are value judgments and are themselves affected by that outcome. The efficiency criterion is in part a consequence of the definitions and income distribution assumed and is therefore not a single-valued maximand even of efficiency, let alone of welfare.

A more subtle difficulty derives from the conventional wisdom of economic analysis which wears so easily the garb of a sham positivism. The received system of economic principles was developed to analyse the behaviour and consequences of a market-regulated micro-unit world. It presumed that aggregate welfare would be maximized when the economic well-being of each micro-unit in the collective economy was maximized coincidentally with that of all others. The system of principles it constructed to explain this micro-macro welfare harmony embraced the key notions of markets, bargaining, and independent micro-unit decision-making in which each unit strives independently to satisfy its own egoistic ends.

Coincident with its growing sophistication, economic theory became concerned over the shortcomings in its welfare specifications which has led it into the new Welfare Economics. Following Pareto, aggregate economic welfare has been defined in Pareto-efficient terms. But Pareto-efficiency in our individualist, capitalist market structure can be attained only within the familiar Scitovsky[9] conditions of perfect competition in the market-place and with declining marginal returns to scale on the part of all participating units. Herein is the subtle danger in conventional economic analysis when maximization of economic efficiency is the desideratum. The analyst may uncritically posit Pareto-efficiency as his criterion, thus implicitly requiring the Scitovsky conditions of competitive market structure and marginal equalities under the rule of competitive prices. By so doing he will seemingly be led to a positivistic conclusion regarding the aggregate economic consequences of a public enterprise—a conclusion that the scheme is Pareto-efficient hence economic or Pareto-inefficient therefore uneconomic.

Such conclusions are normative, however, not positive. They are derived from premises that assert the competitive, atomistic, market-regulated conditions that are required to attain the *maximum maximorum* of economic efficiency. For example, economic analysts generally have argued that prices used in analysis of a prospective public enterprise should be actual or shadow competitive prices because maximum efficiency can be attained only under fully competitive conditions. Therefore, they argue, the efficiency goodness or badness of public enterprise must

[9] Scitovsky, T. *Welfare and Competition: The Economics of a Fully Employed Economy* (Allen and Unwin, London, 1952).

be measured only in terms of perfectly competitive conditions.[10] If they then find that a public enterprise will generate negative social revenue, they are apt to conclude that they have reached a positivistic conclusion that the scheme is uneconomic whereas they actually reached a normative conclusion that the scheme would be uneconomic in a perfectly competitive economic society which, presumably, they believe to be the preferable society since they have taken it as their norm for definitions and measurements.

Political economists should examine the capacity of the public enterprise to improve economic efficiency in the world that is. They should not use some other world that economic doctrine says would be better. Political economists should analyse alternative public investments as economic disturbances within the framework of working rules laid down by the society rather than in a framework of rules that might be. Upon occasion, reform of the institutional rules themselves may be the subject of analysis. In such analyses economists must make explicit the nature of the alternatives considered, from what source or by whom those changes were suggested, and what or whose value judgments give them relevance.

In short, the economist's criterion is a test of the wisdom of a proposed public enterprise only in so far as increased efficiency is the desideratum; even then it is such a test only in terms of the assumed definitions, income distribution, and institutional framework.

How Should the Economist Test the Rightness of His Conclusions?

When does the economist know he has the *right* answer to a problem of public enterprise choice? What is the normative criterion for the economist's own choices? The economist is a person, a family member, a parent, a participant in a broad diversity of cultural institutions—citizenship, voting, membership in government. It is possible for him to speak from any number of vantage points with which we are not here concerned. We are concerned only with the criteria of the rightness of his conclusions *as an economist.*

One criterion of correctness of his judgments obviously is accurate and imaginative handling of his analytical tools—economic principles and logic. A somewhat less obvious criterion is the proper selection of just those tools from his kit which can be applied legitimately to the evaluation of welfare efficiency of a public enterprise. Only those among

[10] To demonstrate that I play no favourites in this stricture upon the practitioners of the economic analytical art, I quote my earlier self—"It is generally accepted that market prices of output so far as the private economy is concerned are acceptable measures of the values of those outputs to the whole economy. Market prices of inputs are similarly acceptable as measures of the values of alternative products which those products could produce . . . this presumption rests on an implicit assumption that the allocation of resources and the structure of prices in the economy are approximately close to those which would rule if the economy were perfectly competitive . . . the validity of this presumption must be severely questioned . . . what is needed is a stand-in competitive price for such non-competitive prices. It is necessary for an imputed price to be imagined as the market price would prevail in the absence of non-competitive elements in the market; . . . Accepting this stricture eliminates the easy out of market prices as the opportunity cost measure of outputs and imputs . . ." Kelso, M. M. "Economic analysis in the allocation of the federal budget to resource development", Chapter 5 in Smith, S. C. and Castle, E. N. (eds.), *Economic and Public Policy in Water Resource Development* (Iowa State Univ. Press, Ames, 1964), p. 68.

his principles are applicable that relate to net social gain within the institutional framework as it exists or as it will be modified by the enterprise itself. If society in its collective wisdom has rejected the Scitovsky conditions for a Pareto-efficient maximum, net social gains from public enterprise, determined by the economist who assumes those conditions, are, positivistically, not good or bad but wrong. The preference framework from which they have been derived is an artificial one, non-existent in the real world; any conclusions derived from it are likewise artificial and not applicable to reality.

What normative preference structure should guide the economist's criterion of rightness in his analysis? As analyst of a possible public enterprise, neither his set of value preferences nor that idealistically posited by the conventional wisdom of economic theory are controlling. The value set he employs must be that held by real life people. If the real world of public choice has rejected competitive prices and an untrammelled competitive market, he cannot argue that choices about public enterprise are right only if they are made within a context of these institutions. Indeed, Buchanan[11] has argued that the only legitimate test of the rightness of an economist's analysis is its acceptability to the political unit within and for which it was conducted.

Efficiency, as argued in the preceding section, can be defined and measured for any political choice process only within the constraining framework of some set of value preferences. The set might be one which is personal to the analyst (an egoistic model); it might be a set presumed to be held by one of the actors in the analytical model (an authoritarian model); it might be one held by a specified group of actors in the model (an elite or republican model); or it might be the set held by the entire group of actors encompassed by the model (a democratic model). For societies of the western democratic type there can be no question as to whose preference set constitutes the constraining framework of analysis as to economic efficiency of public choice—it is the set of the democratic or the republican model.[12]

It follows that if the relevant value system in the economic analysis is that held by the actors in the model, any analysis of economic efficiency of public choice rests upon the economist's presumption as to the preference set held by the collective decision-makers encompassed by his model. Conclusions drawn by the economic analyst from his study of the public enterprise are legitimately phrased in terms such as "if I read your preferences aright, choice of this enterprise alternative will (or will not) improve your efficiency of social output". This conclusion contains two important hypotheses: (i) the analyst's assertion as to the nature of the choice-makers' value system; and (ii) his assertion as to whether or not the choice refereed by that value system will improve economic efficiency in that society. Empirical test of the validity of these hypotheses will require observation of the real world in one or both of the following

[11] Buchanan, James M. "Positive economics, welfare economics, and political economy", *Journal of Law and Economics* 2, Oct. 1959, p. 138.

[12] This is not the place to discuss the basis in political theory for the placement of right and responsibility for choice in government. This subject is outside the scope of this essay. It suffices to say that political choice in a democracy reflects the collective values of the society expressed through some set of voting and pressure institutions either directly by the collective as a whole (pure democracy) or through their selected representatives (representative democracy or republicanism).

ways: first, if the enterprise choice recommended by the economist is accepted and acted upon by the collective, *ex post* analysis of its consequences will determine whether, in fact, it did improve economic efficiency of social output; and second; the *ex ante* decision by the collective to accept or reject the economist's recommendations as to the efficiency of the project and to proceed or not to proceed with the enterprise reveals its acceptance of the value set and criterion used by him. The set of preferences that serves as a parametric constant in the economist's analysis is that held by the collective choice-makers and cannot, except in the long slow process of retribution, be judged to be right or wrong. It can only be taken as given and, if efficiency is to be rightly judged, it must be *correctly* taken.[13]

The economist as educator, member of the idea elite, informed citizen, or interest group protagonist may take a position contrary to that of the collective choice-maker on questions as to the economic efficiency of a public enterprise. In so doing, however, he is in disagreement either over empirical facts of the world or over rightness of the value system held by the collective choice-maker. If the disagreement is over the latter issue, the argument does not have to do with the economics of the case but with the preference set that serves as a constraint on economic choice. This is an argument over values, not over economic efficiency, and cannot be resolved by positive analysis. If the economist disputes the value system that underlies collective investment choice, he assumes the role of social philosopher which, of course, he has a perfect right to do. However, he must be clear in his own mind and should make clear to his audience which role he is playing, that of positive analyst or social philosopher. The canons of valid argument differ as between the two roles.

It may be that economists, because of a psychological make-up peculiar to them or because of a value system they have absorbed from traditional economic doctrine, are biased against the value system of a collective that is unanointed with the balm of conventional economic wisdom. If so, those who want to be positive economic analysts must guard against this predilection, but those who choose to proceed as social philosophers will continue to test the rightness of public choice against the traditional doctrine . . . by so doing they stand in direct line of descent from Adam Smith.

[13] It is also a test of their concurrence in his assessment of their social opportunity costs and his analytical framework of production functions and behavioural premises. There is plenty of room for argument between the analyst and others in the social group about facts in the real world but that is something quite different from argument over the content of the public's system of value preferences. Differences in judgment may well arise over such considerations as the shape and content of the production functions, the form of the behavioural functions that describe the human elements in the analysis, the nature of the risk and uncertainty functions, the pattern and rate of predicted changes in technology, in price relationships, in wants, in population, and in institutions. These are not properly matters for purely subjective opinion by either the analyst or his collective clients but are matters theoretically subject to test as being objectively right or wrong although the test may have to await *ex post* analysis of the efficiency outcomes of the public enterprise. But questions about the content of the value system pertinent to the analysis are a different matter.