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MR. LERNER ON "THE ECONOMICS OF CONTROL"

I

From Adam Smith to the nineteen-thirties professional economists, in this country at least, believed in competition and the virtues of allowing the pricing mechanism to bring about the most economic use of resources. The development of the "economic calculus" was the basic purpose of economic study. During the nineteen-thirties and more recently a different strand of economic thought has developed. The imperfections and inadequacies of the competitive system and of the pricing mechanism (which were always recognised to a greater or lesser extent by economists) have been so emphasised by some recent writers that the whole idea of an economic calculus has been abandoned by them. Consumers' irrationalities and ignorance of what is good for them; wastes due to imperfections in competitive markets; external economies and diseconomies which necessitate a divergence between the private and social interest; the evils of unemployment; the difficulty of improving the distribution of income without interfering with the price system—the realisation of all these phenomena has led some people to the view that the price mechanism is a snare and a delusion and that the quantitative planning of production and consumption by the State provides the answer to our economic discontents.

This development of thought has already, in its turn, provoked some reaction. Professor Hayek, in *The Road to Serfdom*, leads a counter-revolution, the main purpose of which is twofold: first, to reassert the usefulness of the competitive price-mechanism; and, secondly, to assert the arbitrariness of all acts of centralised planning and to establish the danger to freedom of accepting anything but the impersonal conclusion of the competitive market. Thus, the stage is set for a battle royal between Planning and *Laissez-faire*.

There is, however, a third school of thought, ably represented by Mr. A. P. Lerner's recent book.[1] Mr. Lerner believes passionately in the principles of the economic calculus, in the use of the price mechanism, in the avoidance of arbitrary centralised planning, and in freedom of choice for consumers and workers;

[1] *The Economics of Control: Principles of Welfare Economics*. By Abba P. Lerner. (New York: The Macmillan Company, 1944. Pp. xxii + 428. $ 3.75.)

but he does not believe in unqualified *laissez-faire*. He preaches the "controlled economy" by which he means an economic system in which the price mechanism is made to work, at the dictation of the free choice of the individual consumer, in such a way as to attract factors of production to the uses in which the valuation set by consumers on their marginal product is highest. In many cases, according to Mr. Lerner, this can best be achieved by competition; in other cases it is necessary to institute socialist production to achieve this end of equating prices to marginal costs. The "controlled economy" is the economy in which controls are introduced of a kind and on a scale necessary to achieve just this object of making the price system work, and from which all other regulations are removed.

Mr. Lerner himself was for many years an advocate of an extensively socialised economy, run expressly on these impersonal principles of economic pricing.[1] In his present book, while he still advocates socialisation where competition will be imperfect, he has swung markedly towards a more extensive use of the competitive mechanism. But, fundamentally, he remains consistent: to him the important question is not so much the means (whether socialism or *laissez-faire*) as the end of so using the pricing system as to achieve the most economic satisfaction of the freely expressed desires of the consumer.

In Mr. Lerner's opinion, the weapons of State intervention for the controlled economy are various. A system of monetary and fiscal policy should be adopted to ensure that there is a sufficiently high demand throughout the economy to give full employment without inflation. Such a policy will involve intervention by the State in taxation and spending (so as to affect the total demand for goods and services) and in borrowing and lending (so as to affect the rate of interest at which money can be borrowed for new capital development) (cf. Chapter 24, on "Functional Finance").

In Mr. Lerner's system the State should also intervene to ensure a more equal distribution of income, both through a progressive income tax (pp. 234–240) and also through the payment on an egalitarian principle of any "social dividend" which it may be necessary for the State to pay out in order to maintain consumers' purchasing power in the interests of the maintenance of full employment (p. 267). Mr. Lerner argues on familiar lines that the total satisfaction achieved from any given income will

[1] A type of non-arbitrary socialism, the feasibility of which Professor Hayek dismisses in a footnote (p. 30) of his *The Road to Serfdom*.

be maximised if that income is so divided among individuals that its marginal utility is the same for everyone; but he adds an interesting and elegant proof of the proposition that (on the assumption that the marginal utility of income declines in the case of each individual) the maximisation of *probable* total satisfaction is attained by an equal division of income, even although we cannot directly compare the satisfactions of different individuals (pp. 29–32).

In order to ensure the best use of resources it is necessary to bring it about that prices are equal to marginal costs in all lines of production. This, says Mr. Lerner, can be done in either of two ways: by promoting competition where perfect competition is technically possible, since in such circumstances the search for private profit will itself automatically result in the equating of marginal costs to prices; or by the socialisation of industry and its decentralised operation by managers who are under instructions to obey The Rule (p. 64) that they must take on each factor up to the point at which its price is equal to the value of its marginal product.

Mr. Lerner definitely prefers the competitive to the socialist solution, where perfect competition is technically possible, on two grounds: first, because the competitive solution automatically provides just the correct incentive for the owners and managers to act efficiently and economically; and, secondly, because "alternatives to government employment are a safeguard of the freedom of the individual" (pp. 83–85). Above all, competitive speculation (*i.e.*, speculation carried on in conditions in which the speculator cannot by his own individual action affect the buying or selling prices of the commodity in which he is speculating) should be positively encouraged, since by transferring resources from less valued to more valued uses it confers an unequivocal benefit on the community (pp. 69–71).

Competitive conditions can, according to Mr. Lerner, in many cases be preserved by the device of government "counterspeculation." That is to say, the State can deny to individual buyers and sellers the power of affecting prices, and thus exercising a monopolistic influence, if it is willing itself to enter the market and to buy and sell freely at the price which it considers to be the competitive price (pp. 55–56).

There are, however, serious difficulties connected with this idea of government "counterspeculation." If, for one reason or another, private producers are in a position to restrict output and to hold prices above the competitive level, how can the

Government prevent this merely by expressing its willingness to sell *ad lib.* at the lower competitive price? Will it not itself have to buy at the higher monopoly price in order to sell at the lower competitive price? And, in this case, will not the demand for the product exceed the supply which the Government can obtain for resale to the consumers?

Perhaps the answer to this conundrum lies in Mr. Lerner's later statement that the State should, in certain circumstances, itself undertake production in competition with private enterprise (pp. 85–87). This would, no doubt, be a means of ensuring that sufficient supplies were forthcoming at the competitive price; but in this case it would be the State production rather than the "counterspeculation" which would hold the monopoly in check.

In any case, where there are important economies of large-scale production, "counterspeculation" alone, as Mr. Lerner points out, will not suffice to preserve the results of "perfect competition." In these cases monopoly may be inevitable, and the sale of the product at a price equal to its marginal cost may involve the continuation of production at a loss (p. 179). Here, socialisation is the remedy proposed by Mr. Lerner. For example, the public utilities (which, in the absence of a clear recognition of the simple rule that prices should be equated to marginal costs regardless of the effect upon total profitability, are the subject of "unending regulations") should be socialised and run according to The Rule (p. 181).

Such socialisation—undertaken solely in order to make the pricing system work, and based upon decentralised control of socialised industries by managers who would have simply to obey The Rule (p. 64) equating prices with marginal costs—is, of course, something quite different from centralised quantitative planning and control over the economy. For such a system Mr. Lerner, on the grounds that it would make impossible any rational use of prices and costs as the means of allocating resources to their most economic use, has nothing but contempt. "Any attempt to run the economy from a central office must result in utter confusion, although it can all be adjusted satisfactorily with the proper use of the price mechanism" (p. 170).

Mr. Lerner maintains that the "controlled" economy would involve less State regulation than the "uncontrolled" economy, since this system would involve sweeping away many "partial and haphazard" regulations which did not promote (to say nothing of those which actually hindered) the competitive or

socialist process of equating prices with marginal costs (pp. 2–4). His programme is thus one of freeing the competitive process from a host of regulations; extending the socialisation of industry (on the principle of decentralised management) where monopoly was inevitable; maintaining a mixed system of State and private enterprise; using the device of Government "counterspeculation" to preserve, wherever possible, competitive markets; and employing the fiscal and monetary functions of the State both to achieve a more equal distribution of income and to maintain aggregate demand at a level sufficient to maintain employment without inflation.

In exposition of this type of economic policy, Mr. Lerner has written a brilliant book, full of stimulating ideas and presenting in a fresh and elegant manner the main principles of welfare economics. But it is also a queer book. Mr. Lerner delights in dressing up even the most familiar principles in provocative and sometimes unnecessarily unrealistic disguises; there are strange omissions from, and strange inconsistencies within, this closely packed analysis of welfare principles; and Mr. Lerner, who in some of the passages of his book seems to be explaining familiar first principles at great length to the untutored schoolboy, on the next page engages in complexities and niceties of the most advanced analysis which only those with years of training in the traditions of the modern school of English-speaking economists will be able to understand. But it is always easy (though never profitable) to reproach a pioneer for failing to display a perfect sense of proportion. If the remaining paragraphs of this review are devoted mainly to an examination of some of the more surprising omissions, inconsistencies and oddities in Mr. Lerner's book, this is not meant to imply that the reviewer has anything but the most profound respect for Mr. Lerner's achievement.

II

The conclusions of welfare economists, such as Mr. Lerner, depend on the correctness of the basic assumption that the choice of the individual consumer should determine the use of economic resources. The doctrine of Consumers' Sovereignty is the crux of the problem.[1] If this doctrine is accepted, it is difficult to see how the general principles of "marginalism"

[1] The points gathered together in this section are familiar to most economists; but I am indebted to Mrs. Robinson for suggestions about their systematic arrangement.

developed by the welfare economists can be challenged. If this doctrine is rejected, then much of the type of economic analysis deployed in Mr. Lerner's book becomes irrelevant.[1]

The "marginal" principles of the welfare economists would follow at once if it were right to assume that each consumer represented a separate island of satisfaction, the degree of which depended solely on the amounts of the various goods and services which he was at that moment consuming. In this case, total satisfaction would undoubtedly be maximised by a system which (*a*) so divided income among individuals as to make the marginal utility of income equal to all consumers, (*b*) allowed consumers to compete freely for the available supplies of consumption goods, (*c*) caused factors to move to the production of those commodities for which the valuation set by consumers on the factors' marginal product was highest, and (*d*) caused total consumers' incomes to be maintained at a level which forced no resources to remain in involuntary idleness.

Mr. Lerner in effect makes just this simple assumption. Yet this assumption so clearly needs modification if it is to be made realistic, and is so central to the argument, that it is a little disconcerting to find a welfare economist of Mr. Lerner's stature failing to examine it more carefully. The assumption of Consumers' Sovereignty will no longer hold good in an unqualified form, if (i) the consumer can enjoy some things most economically only by means of their joint consumption simultaneously with other consumers, (ii) the consumer's present enjoyment depends on what others are at present consuming, (iii) the consumer's present satisfaction depends in part on what he or others have been in the habit of consuming in the past, or (iv) the consumer does not know what he wants or does not know what is good for him.

(i) *Collective Wants.* There are some goods (such as public parks, public monuments, etc.) which are normally provided in the modern community by the State collectively for all citizens. It might be possible to leave it to private citizens to use their private incomes to provide each his own little private park; but

[1] That is to say, it would no longer be suitable to use the pricing system to decide whether the production of commodity *A* should or should not be expanded at the expense of commodity *B*. But, having decided on other principles how much of *A*, *B*, *C*, *D*, etc., should be produced, it would still be appropriate to use the pricing system to determine by what means these commodities could be produced most economically. For it is only if the ratio between the marginal products of factors *X* and *Y* are the same in all lines of production (*A*, *B*, *C*, *D*) that it is impossible to produce more *A* without producing less *B*, *C*, or *D*.

this would clearly be a wasteful form of consumption. It might be possible to leave it to private initiative to form voluntary clubs to provide out of the incomes of the members a rather larger park than any one member could himself provide; but once the park was there, it would probably be uneconomic to exclude non-members from its use. It might be possible for the State to provide the park but, by charging an entrance fee instead of financing it out of taxation, to lay the burden of its cost upon those who were willing to use it at a cost. But part of the charm of a public park may, after all, be that it is a public park freely open to all; and, in any case, it would clearly be uneconomic to surround parks or monuments with large screens and to dole out the enjoyment of a sight of these public amenities only to those who were willing to pay the necessary charge for a peep. Such goods are, in fact, the extreme case of those in whose production there are "internal economies"; once a monument is erected the marginal cost of its enjoyment is zero. Nor is the division between those goods which should be collectively consumed and those which should be privately consumed a simple one to draw. Many goods may be rather more economically consumed collectively than privately; but private consumption may help to avoid the dangers (*a*) of taxing one class of person who gets no benefit from the type of collective consumption which is undertaken to the exclusive benefit of those who do, and (*b*) of putting much too much or much too little of the community's resources into this particular type of product.

(ii) *External Economies and Diseconomies in Private Consumption.* Individual A's increased consumption of commodity X may increase or may decrease the satisfaction of individual B. When a man spends money on beautifying his house, this may give pleasure to his neighbours as well as to himself. When he wears a top-hat or displays his diamond ring, his display may cause his envious neighbours deep dissatisfaction.[1] Broadly speaking, there are external economies connected with any individual consumption which beautifies or otherwise improves conditions for others, and external diseconomies with forms of luxurious

[1] Display goods may be of two kinds. Thus, although I may have my total satisfaction diminished the more people have top-hats or diamonds to display, yet an increase in others' consumption of top-hats may increase the marginal utility of a top-hat to me (since it is clearly the right thing to wear), but an increase in others' consumption of diamonds may diminish the marginal utility of diamonds to me (since they are clearly not so rare as I thought they were). Moreover, I may react differently to the display of different persons. Increased display by my neighbours may invariably cause me envious pain, but by a public figure may cause me great satisfaction.

consumption which people desire only because it is the fashion, so that each consumer would feel the loss less acutely if all restricted their consumption simultaneously.

(iii) *Historical Factors.* An individual may enjoy a particular form of consumption because he is used to it, and in fact (although he may not realise it) he might not miss the commodity at all once he had got used to going without it. On the other hand, he may enjoy a commodity because it is novel, and may grow tired of it as soon as he grows used to it. These are merely special forms of the irrational element in consumption discussed in the following paragraph.

(iv) *Irrational Factors.* An individual may not know what is good for him, while the State does. The clearest example of this is probably to be found in the case of nutrition. The consumer may not know what foods contain what vitamins nor in what vitamins his diet is deficient. In this case, clearly, unguided consumer's choice will not maximise satisfaction. But there is a less clearly defined form of irrationality in consumer's choice. He may in a more fundamental sense not really know what he wants. He has money in his pocket to spend, and all the experts in salesmanship proceed to spend money in competitive advertisement simultaneously to persuade him to consume X instead of Y and to consume Y instead of X. Many consumers' preferences for many articles are based on sound and rational foundations. But it is probable that many are not; and while many of the most blatant wastes of this type of imperfect competition would be automatically removed by the principles of pricing advocated by Mr. Lerner, yet the problem would still remain unsolved whether (and if so, how, and to what extent) the State should attempt to distinguish between rational and irrational consumers' preferences.

Many of these complicating factors on the side of demand may go together. Thus, suppose that each consumer wanted oranges because others had oranges to eat, because he had always eaten oranges (though he would not miss them when he got used to going without them), and because he over-estimated the difficulty of obtaining the same nutrient elements in his diet from other sources. Then, in time of war, there would be much to be said for eliminating supplies of oranges altogether. Such an argument would not, of course, square with the familiar "marginalist" argument that the way to release factors of production with the least harm to consumers would be to reduce consumption of all commodities at the margin (thus preserving

consumers' surpluses on the remaining supplies) rather than to eliminate one or two objects of consumption altogether.

Mr. Lerner pays little or no attention to these complicating factors on the side of demand. He makes a passing reference (pp. 21–22, 43) to the fact of irrationality in consumers' behaviour. In one passage, where he is explaining in small print the first of his six "welfare equations" (p. 76), he uses a form of words which is compatible with an awareness of the possibility of what has been called above "external economies or diseconomies in private consumption"; but the possibility is ignored in all that goes before or follows after. In discussing the distribution of income (pp. 33–37, 41) he discusses a number of complicating factors which affect the principle of an equal distribution of income. Some of these (such as the possibility that the satisfaction which one derives from one's income depends on how much income one has had in the past, or how much income one's neighbours have now) are similar to those mentioned above. But he does not discuss how far these factors affect the problem (even when income is ideally distributed) of allocating resources and supplies at the dictation of consumers to their various uses. Yet this is a basic, if not the basic, problem of the welfare economist.

These complicating factors may drive some extremists to abandon completely the consumers' market as a means of determining the use of resources, and to advocate the quantitative planning by the State of all forms of consumers' consumption. But, clearly, there are real differences in consumers' tastes, and it would be most wasteful to neglect these, which can show themselves adequately only in a consumers' market; and others would add that individual freedom of choice was itself an end as fundamental as economic welfare itself. There are, however, a large number of intermediate positions between unadulterated Consumers' Sovereignty in a completely free consumers' market, and complete State planning of consumption. By consumers' guidance and education, individuals may be informed what is good for them and helped to decide what they really want. Moral and psychological training might in some respects (*e.g.*, by diminishing the envy which people feel at others' good fortune) remove external diseconomies in private consumption. Extensions of collective consumption may, in some cases, be desirable. State prohibition or quantitative planning of some forms of consumption (such as in medicines, drugs, nutrients, etc.) may be required. Taxes or bounties on other forms of consumption

might be used to adjust the private to the social interest. Quite a lot of the queer sense of extremism and even of unreality which pervades much of Mr. Lerner's book is due to the fact that these are problems which he has almost completely assumed away.

III

The first two-thirds of Mr. Lerner's book deal with the problem of maximising satisfaction from a given amount of factors of production in a closed economy and on the assumption of full employment. The fundamental propositions and conclusions of this section are not themselves novel. The discussion is, however, carried out in an extremely stimulating manner; and these passages of the book may well become one of the set works of reference on these essential problems of welfare economics.

As has already been indicated, Mr. Lerner's method is to demonstrate, first, that a free market for consumers' goods will maximise welfare from any given supply of the various products and within the framework of any given distribution of income; secondly, that an equal distribution of income will maximise the probable satisfaction to be obtained from any given income; and, thirdly, that resources will be used in the way which will maximise consumers' welfare if (either by perfect competition or by socialised production run according to The Rule) factors of production are moved from points of lower to points of higher value of their marginal products. This third proposition is elegantly examined both for fixed and for variable proportions between both factors and products.

The problems which raise the most complex issues in connection with this third proposition are those concerned with economies of large-scale production. Strangely enough, Mr. Lerner nowhere discusses the problem of external economies in production, in the same way that (as has been observed above) he nowhere discusses the problem of external economies or diseconomies in consumption. External economies, it is now generally realised, may be of either of two types: first, they may be due to internal economies in another industry, when, for example, the expansion of firm *A* increases the demand for railway transport, the development of which, as a result of economies internal to the railway, reduces the cost of transport also to firm *B*; or, secondly, external economies (or in this case, diseconomies) may arise because the conventions of accountancy are such that when one firm expands production it may not

itself receive payment for the whole of the marginal product of the additional factors which it hires (or may not itself pay for all of the additional factors which it uses), as, for example, when the drainage of a particular piece of land improves (or injures) the productivity of neighbouring land.

By implication, Mr. Lerner may be said to have dealt satisfactorily with the first type of external economy, when he argues that in all firms subject to increasing returns (as the result of the use of indivisible factors of production which give rise to internal economies) The Rule should be so applied as to equate the price charged for the product to the marginal and not to the average cost of production. For, if the cost of railway transport to firm A and to firm B is, *as a result of the application of The Rule within the railway system*, equal to the marginal cost of such transport, then there is no reason to take special measures to expand the production of firm A or firm B beyond the level which perfect competition between them will bring about. Each will now bear no more than the cost to society of its own additional demand for railway transport. External economies, due to internal economies within another firm, present no divergence between social and private products, provided that prices are equal to marginal costs in the firm to which the economies are internal.

But it is an unfortunate omission that Mr. Lerner does not refer to the second type of external economy. There may well be perfect competition all round and yet a misuse of resources because, for example, firms are not charged for the damage which their smoke causes in the district; because they are not charged (or rewarded) for the pain (or pleasure) which the design of their building causes as a part of the surrounding landscape; or because of the many other ways in which they are not charged or paid for the various disadvantages or advantages which their actions may confer on others. These possibilities are in many cases indistinguishable from the problem, discussed earlier in this review, of external economies or diseconomies in private consumption. Thus, the effect which the design and planning of my house has in improving or worsening the amenities for my neighbours may be regarded indifferently as an external economy or diseconomy either of the production or of the consumption of my house. Here is a whole range of effects demanding State control (whether by a system of taxes and subsidies or by other means) of which Mr. Lerner does not write.

On the other hand, Mr. Lerner writes at length and to great

effect upon the problem of indivisibilities of factors of production which are the cause of internal economies (Chapters 15 and 16). But in this connection Mr. Lerner falls into an error for which I have recently myself been justly rebuked.[1] I take this opportunity of passing on the rebuke. Mr. Lerner argues that, for technical reasons, factors of production may be indivisible, in the sense that one has to employ a factor for a particular purpose (if one is going to employ it at all for that purpose) in a large and indivisible lump. Such indivisibilities, if they are significant (*i.e.*, if they are large in relation to the total market for the commodity in question), are bound to cause a monopolistic situation.

Up to this point, Mr. Lerner's argument is unassailable. But he then proceeds to argue that in all such cases, if the industry is socialised and run in such a way as to equate the price of the product to its marginal cost, the price will be below the average cost, and losses will be incurred. But this is not the case. It is true that losses may be incurred in this case; but it is also true that abnormal profits may be earned. Suppose that there are two factors, A and B, producing a given product; that factor A is indivisible and fixed in amount for technical reasons; and that successive units of B are applied to the indivisible factor A until so much is produced that the price of the product is equal to its marginal cost in terms of B. Now, at given market prices for A [2] and B there would be a certain optimum or most economical proportion in which the factors A and B would be employed, if the total market for the product were large enough to enable a large number of units of A (instead of only one) to be employed. A huge expansion in the demand for the product would make it possible to produce with a large number of units of A, each served by a rather smaller (or greater) number of units of the divisible factor B. In this case the most economical relation

[1] See symposium on "Price and Output Policy of State Enterprise" by J. E. Meade and J. M. Fleming, ECONOMIC JOURNAL, December 1944.

[2] It may, at first sight, appear meaningless to talk of the market price of A because, being a single indivisible fixed factor, its value will simply depend on the actual profit which it earns; and in this case the statement in the text would merely beg the question of the most economical ratio between A and B. But this is not so. A factor may well be indivisible in one industry, but divisible in many alternative occupations. Thus, the capital invested in the permanent way of a railway system is indivisible in the railway system; but if it were allowed to depreciate, the depreciation funds so released could be invested at the margin in a host of alternative industries in which capital could be employed in small divisible units. The market price of the indivisible unit of capital in the railway system is the price which the same resources could have obtained if they had been invested at the margin in alternative uses.

between *A* and *B* would be found; returns to *A* and *B* together would be constant; average costs would equal marginal costs; and the payment of rewards to *A* and *B* equal to the value of their marginal products would absorb the whole of the product, no more and no less.

But suppose the market for the product to leave room for only one unit of *A*. The market may be too small to allow (on the principle of equating the price of the product to the marginal cost) the amount of *B* to increase until the optimum ratio between *B* and *A* is reached; or it may be great enough to cause the ratio of *B* to *A* to grow beyond the optimum ratio without being large enough to justify the employment of a second unit of *A*. The payment of a reward to *B* equal to the value of its marginal product will mean that in the first case a loss, and in the second case a profit, is made on *A*.[1]

Throughout Chapters 15 and 16 of his book Mr. Lerner assumes that the first case is universally true. He argues (quite correctly) that all industries in which there are significant indivisibilities will be monopolistic; he adds (quite incorrectly) that if they are socialised and run so as to equate price to marginal cost they will necessarily be run at a loss. This contention is all the more remarkable because in the following chapter Mr. Lerner, in connection with a discussion of the size of firms, pays attention to precisely the opposite case in which the ratio of the divisible to the indivisible factors is "too great" and an abnormal profit is made in consequence. There is a strange inconsistency in this. Mr. Lerner writes as if, in one pigeon-hole in his mind, there was a theory about "too great" a ratio of indivisible to divisible factors leading to losses in socialised industries run according to The Rule, while in another pigeon-hole there was a quite separate theory about "too great" a ratio of divisible to indivisible factors, causing positive quasi-rents and affecting the size of firms. In fact, there is only one theory.

Mr. Lerner is right in arguing that if there are significant indivisibilities (*i.e.*, significant in relation to the size of the market for the product), perfect competition will be ruled out. It would, in fact, always pay a firm in perfect competition either

[1] A realistic example may help. The demand for transport on a socialised railway may be so small that the indivisible permanent way, etc., is necessarily excessive in relation to the traffic carried, and losses are made if only marginal costs are charged. But the demand might grow until there was an excessive load of traffic on the permanent way, and marginal costs were in consequence very high, and considerably in excess of average costs. Yet there might not be enough traffic to justify building a second permanent way.

to expand or to close down if the ratio of the divisible factor B to the indivisible factor A were too great or too small. In the former case the firm could always produce at a lower cost per unit by taking on more B with the single unit of A, and in the latter by taking on two units of A instead of one, but taking on rather less than twice as much B. Significant indivisibilities and uneconomic ratios between A and B are incompatible with perfect competition.

Mr. Lerner is also right in arguing that where there are significant indivisibilities, the question whether another unit of the indivisible factor A should be employed or not involves measuring consumers' surplus (pp. 189–198). The employment of a first unit of an indivisible unit does not involve merely adding a small increment to the existing output of the product concerned, the value of which can be measured by the price which consumers are willing to pay per unit. It involves producing a large output of the product concerned instead of producing none of it; and the amount which consumers would pay rather than go without this product entirely is something quite different from the number of units produced multiplied by the price which they are willing to pay for the last unit.

Mr. Lerner has written some interesting paragraphs on this problem. But here is a field, in the reviewer's opinion, in which much further work remains to be done before the pure theory (let alone the practical implications) of this matter can be considered to be adequately covered. The pure theory is really fairly simple when there is an indivisible factor in only one industry. But suppose that the indivisible factor in industry X would also be an indivisible factor in its alternative uses in industries Y or Z. Then it would be necessary to compare the consumers' surplus lost in X with the consumers' surplus gained in Y or Z by transferring the indivisible factor from X to Y or Z. This may be theoretically fairly simple if products X, Y and Z are independent of each other in consumption. But what is the answer if X is a close substitute for Y or jointly demanded with Z? What do the consumers' surpluses for X, Y and Z now mean?

Or suppose that industries X and Y produce close substitutes (gas and electricity), and that each involves the employment of an indivisible factor, though not necessarily of the same factor in each case. Should the community produce (*a*) no gas and no electricity, (*b*) some gas but no electricity, (*c*) some electricity but no gas, or (*d*) some electricity and some gas? How are the

consumers' surpluses for different amounts of the close substitutes, gas and electricity, to be measured simultaneously? It is to be hoped that Mr. Lerner will set his mind to work to round off his system of thought with answers to these basic questions. There are few, if any, economists better qualified than he to discover them.

IV

On page 3 of his book Mr. Lerner writes that "the three principal problems to be faced in a controlled economy are employment, monopoly and the distribution of income." There is, however, a fourth and equally fundamental problem in the economics of welfare—namely, the problem of the optimum supply of the factors of production. It is a pity that Mr. Lerner did not give this fourth basic problem the same consistent treatment which he affords to the others. As it is, there are certain observations on this question made in passing in the various chapters of his book; but when his views on this subject are collected together and considered as a whole, they are found to be less satisfactory than his work on the other fundamental topics; they are both inconsistent and incomplete.

It is not only that the problem of the best supply of the factors has as much formal right in logic to separate treatment as the problem of the full use of resources, the problem of the best use of resources as between different employment, and the problem of the best distribution of incomes. There are likely to be clashes between certain acts of policy which will promote one of these objectives, but react adversely on one of the others. Most of these conflicts can be resolved by one means or another; but there is likely to be a basic conflict between the problem of the best distribution of income and the problem of the best supply of the factors of production. To take an extreme example, a tax system which (in the interests of the distribution of income) was so progressive as to take 100% of income away from incomes above X, while it took nothing away from incomes below X, would clearly have adverse effects upon the amount of work and risk-bearing, to say nothing of the amount of saving, which would be undertaken. And in the case of the amount of work done, it is difficult to conceive of any solution on reasonably liberal lines of this conflict which is not, in fact, a compromise. This conflict is recognised by Mr. Lerner when he writes that "the principle of equality would have to compromise with the principle of providing such incentives as would increase the total

of income available to be divided" (p. 36). But it is to be regretted that he has nowhere systematically treated this problem.

This problem of incentives is often used as one of the principal arguments in favour of the repayment of State debt or even of the accumulation of net income-bearing assets by the State, on the grounds that to the extent to which this is done it will not be necessary to raise revenue by taxation. This lessened incidence of taxation on work, risk-bearing and private savings will, it is argued, improve incentives.

Mr. Lerner nowhere develops this argument. Indeed, he develops a startling argument which is its direct denial. In the first half of Chapter 24 he argues that the interest paid by the State on the internal national debt is in no sense a burden on the community—an argument which is, of course, the direct reverse of the view that it is desirable for the State to earn a net income on State-owned property. But Mr. Lerner's assertion is manifestly not true. Consider two communities which are otherwise identical, but in the first of which there is no internal national debt, while in the second there is a national debt the interest on which is as great as the rest of the national income put together :—

	Communities:	
	I.	II.
Net National Income at Factor Cost .	100	100
National Debt Interest	Nil	100
Taxable Income	100	200
Rate of Taxation of Taxable Income .	Nil	50%
Income after payment of Tax . .	100	100

In community I, individuals earn 100; the State has nothing to pay out, and there is no taxation. Individuals are left with a tax-free income of 100 *on the assurance that they will lose the enjoyment of the whole of any income which they desist from earning.* In community II, individuals earn 100; they receive 100 in interest from the State; their taxable incomes are, therefore, 200, of which the State takes 100 in taxation to finance the national debt interest. Individuals are left (as in community I) with a tax-free income of 100, *but this time on the assurance that they will lose only 50% of any income which they desist from earning.* Naturally, in the second case they will work less hard, and will strike a balance between work and leisure which is more inclined to leisure than the facts of the economic situation really warrant.

Nor is Mr. Lerner able to escape from the logic of this argument by pleading that the national debt interest may not matter

because, on his principles of "functional finance" (see Chapter 24), the correct course may be to continue to borrow and not to tax in order to meet the interest on the debt. Suppose that in both the communities examined above (which—it will be remembered—are assumed to be identical in all respects except the sizes of their national debts) individuals save one-sixth of their tax-free incomes; that there are no profitable outlets for investment; and that the State therefore (on the correct principles of functional finance) borrows 20 and puts this back into circulation, in the case of community I by paying a social dividend to consumers, and in the case of community II by reducing taxation below the revenue required to pay the interest on the national debt. The situation is then as follows :—

	Communities	
	I.	II.
Net National Income at Factor Cost	100	100
National Debt Interest	Nil	100
Social Dividend	20	Nil
Taxable Income	120	200
Rate of Taxation	Nil	40%
Income after Payment of Tax	120	120
Of which :(i) saved	20	20
(ii) spent on goods and services	100	100

Again, individuals will in both cases have the same real spendable income; but while, in community I, an individual will keep the whole, in community II he will keep only 60% of the last units of income which he chooses to earn. Again, he will cut down the amount of work which he does in community II, though not by quite so much as he would have done in the case previously examined.

We may conclude that the existence of a national debt will have an adverse effect upon incentives, unless (on the principle of running a budget deficit just sufficient to maintain full employment but not large enough to provoke inflation) the necessary borrowing is as great as the total interest payable on the national debt. But if this is the case, the continued increase in the national debt will sooner or later bring the interest payable on it above the level of the budget deficit required to maintain employment; and at this point, in order to prevent inflation, increasing rates of taxation will be required to finance the debt interest, with consequential ill effects upon incentives.

To what extent the existence of a large internal debt is a burden to the community will depend, of course, on the degree to which high rates of taxation in themselves exert an adverse influence upon incentives to work and enterprise. On this sub-

ject Mr. Lerner makes a number of observations in different passages of his book; but his position is not entirely a consistent one.

On the one hand, in certain passages he lays great stress on the principle that people should be paid rewards equal to the value of the marginal product of their effort. Thus (pp. 102–105), he examines the proposition that, in order to obtain the optimum use of resources, it is necessary only to see that prices are everywhere proportional, and not necessarily equal, to marginal costs. This solution he rejects on the grounds that this, involving as it does a divergence between the reward of labour and its marginal product, will disturb the choice between work and leisure. In another passage (p. 267) he insists that any "social dividend" which the State may wish to pay to consumers in order to maintain demand may be distributed on any principle considered equitable, the only proviso being "that the amount paid out to any individual should not in any way be affected by the amount of work he does." This proviso, he argues, is necessary in order to preserve an equality between the reward of labour and the value of its marginal product "so as to induce neither too much nor too little labour."

On the other hand, Mr. Lerner's paragraphs on the income tax (pp. 234–240) are largely designed as a defence of this form of tax; and they play down the importance of the principle (of equality between the net reward and the value of the marginal product of labour) which, in the two cases quoted immediately above, he has so much emphasised. And yet a proportional income tax has exactly the same effect as making prices proportional, instead of equal, to marginal costs. True, Mr. Lerner still recognises the problem when he writes of the income tax; and, admitting that the income tax, by falling on money income but not on leisure, may upset the proper balance between work and leisure, he proposes (what must surely be one of his less practical suggestions) that one might add "to a man's income, for income-tax purposes, that part which he was able to earn but did not because he preferred to work less than some standard amount." He admits that, even if this were done, people would still have a bias against the high-paid (though arduous or unpleasant) tasks, but asserts that "these deviations would not be of very great magnitude." He hardly makes any mention of the possible evil effects upon the amount of work done of a progressive income tax, which may greatly reduce the marginal reward below the value of the marginal product of labour. He merely asserts

that "this is not of importance because the high incomes are rarely the result of work. . . . In those few cases where individual effort is of importance the work is usually of a kind that is sufficiently interesting to bring about the socially desirable amount of work whatever the payment for it."

Mr. Lerner does recognise (pp. 238–239) that, theoretically, progressive taxation (on the "heads I lose, tails you win" principle) may be inimical to business enterprise. But, in the first place, he does not recognise that a high rate of tax, as opposed to a highly progressive tax, may discourage enterprise merely by reducing the net reward that remains for undertaking any given risk.[1] And, in the second place, he again stresses the reasons for believing that, in this respect, too, the case against the income tax "is easily exaggerated." This may be the case. But Mr. Lerner must make up his mind whether or not the principle of equality between rewards and marginal products is important; and he must apply the conclusion indifferently to taxation, the social dividend, the relation between prices and costs and all the other problems in which essentially this same analysis is at issue.

There are also a number of passages in Mr. Lerner's book where he discusses what may be called "the optimum rate of savings." There are some passages which suggest that the optimum supply of savings is the amount which people would be willing to save at the current rate of interest in a free market for their savings, *i.e.*, the amount by which individuals would be willing to postpone their consumption in return for earning on this postponed consumption an amount equal to the market rate of interest.[2]

But in certain other passages Mr. Lerner gives a very strange twist to this proposition (pp. 265–269). Having argued that the determination of the level of investment, and so of the proportion of its annual resources which a controlled economy will put aside for the benefit of future production, must be largely a political question, he goes on to suggest that consumers might be left free to save from their income at the current rate of interest, and that their actions in this respect could be used as a guide to determine whether, in the fully controlled economy, steps should be taken (through a change in the rate of interest)

[1] See J. R. Hicks, U. K. Hicks and L. Rostas, *The Taxation of War Wealth*, p. 192.

[2] See, for example, the paragraph beginning at the bottom of page 344, and ending at the top of page 345.

to increase or decrease total investment. The criterion which he suggests seems to be that if consumers lend more than they borrow (however small their net savings may be), then the rate of investment should be increased (however large it may already be). But surely the criterion of consumers' choice can only be used to equate the rate of consumers' saving with the rate of total national investment. There can surely be no point at all in determining whether the rate of investment should be raised or lowered by the criterion whether consumers' savings are positive or negative.

Mr. Lerner does not, in this connection, refer to the criterion for the optimum rate of saving developed by F. P. Ramsay in his article in the ECONOMIC JOURNAL for December, 1928, on "A Mathematical Theory of Saving," nor to the reasons (such as the mortality of the human individual as compared with the practical immortality of the human community) for believing that the aggregated actions of individual savers may differ from the social optimum. Yet if Mr. Lerner had studied the implications of Ramsay's conclusion that the optimum rate of saving was independent of the rate of interest, he might have seriously modified his analysis.[1]

V

In Chapters 20–25 of his book Mr. Lerner turns to the problems of Investment and Employment, his previous discussion of the principles of welfare economics being based on the assumption that all factors are fully employed.

Mr. Lerner opens this section with what is probably the most stimulating and original part of his work (Chapter 20), in which he outlines a theory of interest for the economy which is in equilibrium with full employment. He argues that it is the nature of capital that productive methods which take time increase the total product available. For this reason, the resources which are released by refraining from producing 100 units of steel this year are able to produce 110 units of steel next year. Steel this year is a different commodity from steel next year; but since, in equilibrium, the cost of the factors must be equal to the value of the marginal product of those factors, it follows that the cost of 100 units of steel this year

[1] Mr. Lerner does not consider the problem of the optimum population, which is also an essential problem of the optimum supply of the factors of production.

must be equal to the value of 110 units of steel next year. In other words, the price of any commodity must be falling at a rate equal to the rate of return on the postponement of its consumption.

Mr. Lerner then proceeds to point out that this general decline in the price level is prevented by the device of a rate of interest on money. The rate of interest must be added to the cost of this year's factors before their cost is equated to the value of next year's product. Thus, in equilibrium, the money rate of interest plus the rate of decline in prices is equal to the rate of return on capital. What started off as a startling and paradoxical new truth turns out to be the familiar distinction between the money and the real rate of interest in a new form. Nevertheless, the method of analysis is extremely novel and stimulating.[1]

Passing from the theory of interest in a state of full employment to the theory of unemployment, Mr. Lerner has much of interest to say. The reader is referred to his discussion on Keynesian lines of the mechanisms by which an uncontrolled economy corrects a position of unemployment and of the various points at which this mechanism fails to operate effectively (Chapters 22 and 23); and to his highly satisfactory discussion of the relationship between the marginal productivity of capital and the marginal efficiency of investment (graphically represented on page 336).

Unfortunately, it is not possible here to explore thoroughly all the ideas developed in this part of his book. But it may be useful to expound briefly and to comment on the main prescriptions of employment policy which Mr. Lerner outlines in Chapters 21 and 24. The steps in his argument seem to be as follows :—

(i) In the controlled economy, steps should be taken (*e.g.*, through the rate of interest) to see that investment proceeds at the correct rate from the point of view of obtaining the optimum allocation of resources for future as opposed to present uses (pp. 264–265).

(ii) Through its taxation policy or, if necessary, through the payment of a "social dividend" to all consumers, the State should see that this level of investment is accompanied by a level of consumption sufficient to give full employment (pp. 266–270).

[1] Unfortunately, there is no space to explain here the way in which for a dynamic world in which relative prices are changing, Mr. Lerner works out the relationship between the rate of interest and rates of productivity and of price change of the various commodities.

(iii) Such action may admittedly involve a continuing budget deficit.[1] But Mr. Lerner argues that a budget deficit is innocuous, because an internal national debt is innocuous. He argues for what he calls the principles of "functional finance," namely that the State should lend or borrow money in order to affect the rate of interest, and so the incentive to invest, and should tax or pay money out in a social dividend in order to affect consumers' incomes, and so the level of consumption. By these means the State should control the total national expenditure in such a way as to achieve full employment without inflation, regardless of the effect upon the budget deficit or the national debt, which are really matters of complete indifference.

Reasons have already been adduced above for doubting whether the size of the national debt is really in effect a matter of indifference. Some may, therefore, wish to add to Mr. Lerner's objectives the balancing of the budget, or indeed some net repayment of the national debt over the average of years. There would seem to be two main ways of aiming at this objective without prejudicing the objective of full employment.

In the first place, a monetary policy which reduces the money rate of interest (or a price policy which allows for a rising level of money prices) will reduce the real rate of interest and will, thus, stimulate the level of investment. If, however, the level of investment has already been fixed at the optimum level from the point of view of the division of resources between present and future uses, this method would maintain employment and the balance of the budget at the expense of devoting too large a proportion of resources to future uses.[2]

Secondly, fiscal changes might be adopted to persuade people to spend a larger proportion of their income on consumption and to save less. Mr. Lerner discusses one such type of change (p. 319) by redistributing income through heavier taxes on the rich and lower taxes on the poor, who save a smaller proportion

[1] The continuation of a budget deficit for the purpose of stimulating consumption (*e.g.*, by tax remission or the payment of a " social dividend ") would, of course, mean that investment was continually less than the amount which consumers decided to save out of their incomes. If, as has been suggested earlier in this review, there are passages in Mr. Lerner's book in which he suggests that the correct level of investment corresponds with the amount which consumers freely decide to save, the continuation of a budget deficit of this kind would indicate that investment had not, in fact, been fixed at the optimum level.

[2] But if the optimum use of resources for the future is defined as that which corresponds to the free savings of consumers, there can be no conflict of principle between the balanced budget and the correct division of resources between present and future uses.

of their income at the margin than do the rich. But, as has been suggested earlier in this review, beyond a point, progressive taxation may have a serious effect upon incentives; and it is therefore to be regretted that Mr. Lerner has not also considered the possibility of taxes which, apart from their effect upon the distribution of income, might induce people to spend a larger proportion of a given income upon consumption.

VI

Mr. Lerner concludes his book with a series of chapters on the application of his principles of welfare economics to foreign trade and to external economic relations in general. These passages (Chapters 26–29) provide an interesting exercise in the application to external relations of the principles of pricing which have been developed at length for the internal economy in the earlier chapters.

Unfortunately, this review has already reached such a length that it is impossible to discuss these chapters in detail. But they are as interesting and provocative as the rest of Mr. Lerner's book, and are highly to be recommended to the reader's attention. It must suffice here to draw attention to one particular "Lernerism." On pages 356–362 and 382–385 Mr. Lerner provides an ingenious formula for the optimum rate of tax on foreign trade which a country should impose "if it is desired to exploit the foreigner." The technical economist will be fascinated. The commonsensical reader will be puzzled when he realises that the formula involves taxes on exports as well as on imports, and altogether discouraged when he learns that if the foreigner retaliates, the formula falls to the ground and all parties suffer an economic loss.

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