The Journal of Libertarian Studies, Vol. V, No. 1 (Winter 1981)

Posing the Problem: The Impossibility of Economic Calculation under Socialism

by David Ramsay Steele
Department of Sociology, University of Hull

The Economic Calculation Argument

For industry to be operated effectively, it is necessary that those in charge be able to perform "economic calculation." It does not matter at all, for the purposes of this argument, whether "those in charge" are professional managers, acquisitive capitalists, workers' councils or other democratically-elected assemblies, or holy men appointed by the gods. The problem of economic calculation which faces them is examined in more detail in some of the following essays, but the general idea can be explained very briefly and simply.

Those in charge of a productive unit, or enterprise (such as a factory), have to make decisions from time to time about how it will be run. They have to decide, for example, whether to instal a new kind of machine, or whether to switch from one technical process to another which will require different raw materials. Often they will have to select one plan out of dozens of possible alternatives. How are they to choose?

At first, the answer might seem obvious. They should choose "the best" or "most efficient." But that is not as simple as it sounds. It is not a task which can be performed unaided by those, such as scientists or technicians, who are familiar only with the physical operations involved. In fact, the major part of the problem is beyond the competence of technicians or scientists, and they are powerless to solve it for us.

As a simple example, suppose that we are in charge of an enterprise, and have to choose between two technical processes, A and B. Process A needs 50 tons of rubber, and 40 tons of timber, per week. Process B requires 40 tons of rubber, and 50 tons of timber, per week. The technical expert has informed us that A and B are both feasible alternatives for reaching a given end, but with that her work is done. Her purely technical knowledge does not enable her to go further, and tell us whether A or B is preferable.

If there were a third possible process, C, which used 35 tons of rubber and 35 tons of timber per week, to attain the same result as A or B, there would of course be no further problem: we would choose C. But between A and B we stand perplexed. Process A would enable us to save on timber, but

at the expense of rubber. Process B would enable us to save on rubber, but at the expense of timber. Except for an improbable coincidence, one of them is the "better" method, the more "efficient," "productive" or "economical." The other is inefficient and wasteful. But which?

It is clear that we need some way of comparing timber and rubber, by reducing them to common units. It is equally clear that any and all *physical* units, such as weight or volume, would be irrelevant. (A gallon of water ought not to be equated with a gallon of mercury, nor a ton of sand with a ton of platinum.) We are perhaps tempted to say, rather hazily, that we want to be able to make a comparative valuation of rubber and timber in terms of their "scarcity," "costliness" or maybe "social importance."

In the market, such comparisons are made by referring to prices. The people in charge of the enterprise look at the market prices of rubber and timber, observing which is cheaper and which more expensive. If the price of rubber is $500 per ton, and the price of timber $1,000 per ton, then process A is cheaper than process B, and is more likely to be profitable.

The timber-and-rubber example is, of course, highly simplified. It would be more realistic to consider more than two processes, each of which utilized *numerous* factors, including various kinds of labor, with some of the inputs common to all the processes, though in different quantities, and some peculiar to one process only, or to a few of them. Then we would have to consider that the end results of the two (or more) processes might be different in detail, so that their comparative assessment might lead, say, to the conclusion that "the product of A is inferior to the product of B, but A is preferable nonetheless because of its considerably lower cost." We should remember that the vital role of economic calculation is by no means confined to major turning points in the life of the enterprise, such as the choice of a whole new technology, but extends also to the innumerable adjustments which have to be made every day, hour or minute. A production decision does not normally begin with all the "technical" facts, and only then proceed to the "economic" choice. Rather, the technician is aware from the outset of market prices, can therefore think in terms of "costly" and "cheap," and hardly ever makes purely technical calculations without the ever-present guidance of the market. Finally, prices change (and prices of factors of production generally change more frequently, unpredictably and substantially than prices of finished consumer goods). Therefore, the enterprise decision-maker does not merely read off the current prices, but tries to anticipate future prices, since the decision to adopt a specific course of action may have to be made well in advance of some of the resulting purchases of inputs. However, current and recent prices offer a very convenient starting-point for estimating future prices. All these qualifications show how much I have simplified the timber-and-rubber example in order to bring out clearly the essential point; but it will be

evident that they do not *diminish* the importance of economic calculation using market prices, but on the contrary *increase* it.

I am not going to claim that reliance on market prices is a perfect method. At this point, suffice it to observe briskly that (a) market prices are spontaneous social products, resulting from an unplanned pattern of interactions among millions of people; (b) market prices generalize, encapsulate or sum up an immense amount of information which need not be, and generally is not, known to any single person or committee; (c) we can easily show that the influences which raise or lower prices, and thereby help to guide the behavior of those decision-makers who use these prices, are influences which would have to be taken into account, in broadly the same way, in any conceivable system for coordinating modern industry; (d) calculation using prices *works*, that is to say, prodigious industrial achievements have been brought to pass within societies which relied upon market prices.

As stated, I do not contend that market prices are *a perfect method* for performing economic calculation in an advanced industrial society. I contend that market prices are *the only method.* There simply is no other way. Therefore, market prices are essential to the survival of any complex industrial structure capable of generating high levels of material consumption.

The decisive demonstration of the impossibility of rational economic calculation under socialism was supplied by Ludwig von Mises in the spring of 1920, but Mises had his precursors. Hermann Heinrich Gossen, forgotten pioneer of marginal utility, had written as early as 1854:

> only through private property is the measure found for determining the quantity of each commodity which it would be best to produce under given conditions. Therefore, the central authority, proposed by the communists, for the distribution of the various tasks and their reward, would very soon find that it had taken on a job the solution of which far surpasses the abilities of individual men.[1]

Several nineteenth-century writers came close to a similar statement. Walter Bagehot pointed out that monetary accounting was indispensable in order to estimate costs of production, in any complex industrial society, and he coupled this with observations on the inability of primitive savages to perform calculations of profits or costs. He did not go on to draw the simple inference that developed industry without the market was an impossibility. Maybe he considered it too obvious to need stating.[2]

The Related Issues

Other writers directly tackled the question of a socialist economic order, but without isolating the calculation problem. Two lines of thought were

pursued, which come very close to the economic calculation argument, but still leave it unformulated.

Wicksteed raised the issue of individuals' *remuneration* under socialism. From Wicksteed's discussion it seems almost certain that he had the economic calculation difficulty in mind:

> If public bodies were the only employers, on what principle should remuneration of the different agents be fixed? Is it possible to conceive of any machinery by which the marginal significance of each should be determined...?[3]

But he did not explicitly separate the question of allocation from the question of payment, because he was examining a hypothetical market socialism in which one enterprise after another was progressively taken over by the state.[4]

Other economists approached the socialist economy from a rather different angle. Without committing themselves on the ultimate feasibility of socialism, they pointed out that *if* a socialist society could and did come about, it would have to employ an allocative system closely parallel to that of the market. Socialism would have to "price" the factors of production, and would be compelled to use "rent," "interest" and "profit," or at least, bookkeeping notions strictly analogous to these. Such arguments were advanced by Wieser, Böhm-Bawerk (both 1889), Pareto (1897) and Barone (1908).[5]

The contributions of Pareto and Barone were to be curiously misrepresented later. Barone was a follower of Pareto, and they both expressed their ideas in mathematical equations based on those of Walras. The point of their arguments was to impress upon the socialists that any hypothetical socialist economy would conform to patterns similar to those found in a market. As far as I know, neither Pareto nor Barone gave a literal, categorical verdict on whether socialism was a practical possibility, though the very strong implication of their words is negative. What they did flatly state was that the function of the price system could never be replaced by the solving of equations. The equations only described the tendency of market prices; they could not be arrived at independently and used to replace market prices.[6] After Mises had raised the calculation issue, it was claimed that he had been refuted in advance by Barone, who had proposed that a socialist society could allocate its resources by the planners' sitting down and solving equations! Barone's blistering rebuttal of socialist misconceptions was hailed as if it had been a pioneering demonstration of the practicability of socialism. This bizarre story was given wide currency by Lange and Schumpeter, and has become part of the present largely fictitious consensus on the economic calculation debate.

Pierson's Contribution

Following Kautsky's well-publicized speech in Delft, Holland, on *The Social Revolution*, the Dutch economist Nikolaas G. Pierson approached the question of the economic viability of socialism in a paper published that same year, 1902. Pierson's main concern is to emphasize that a socialist society would confront a "problem of value."

> The practical problem of value which is automatically solved [by the market]...would not disappear if its automatic solution were made impossible; it would remain in its entirety.[7]

After showing that a number of separate socialist states would have to regulate their mutual dealings with the aid of money prices, Pierson argues that a communist society would be unable to calculate "net income," since it would have no unit to perform the functions now performed by prices. The society would be unable to determine, say at the end of a year, whether it or any of its component parts had made a net gain or loss during that period. To draw up an inventory of all goods at two different points in time would not suffice: all these items would have to be expressed in common units of value.

Pierson examines the ways in which a socialist administration might ration out consumer goods, including the system of labor-vouchers, and shows that trading would re-emerge. He explains that

> the commercial principle, which such a society sought in vain to abolish, comes once more into the foreground....The phenomenon of value can no more be suppressed than the force of gravity. What is scarce and useful *has value*....to annihilate value is beyond the power of man.[8]

Dealing with Kautsky's suggestion that socialist "wages" could be fixed according to labor productivity, Pierson points out that this is not as easy as it sounds. Disentangling the contributions to output of all the different workers—determining the productivity of clerical workers compared with manual workers, for instance, let alone the contribution made by entrepreneurial awareness of fruitful possibilities—will be impossible without some assessment of economic "value." Pierson somewhat confuses the issue here by defending the "productivity" of advancing money. Presumably in Kautsky's socialism, though it retains money and wages, there would be no money loans to business enterprises. The entire question of which enterprises should be folded, which continued and which expanded would be determined by administrative means without the instrumentality of finance. Nevertheless, Pierson's point, that mere knowledge of opportunities can be immensely productive, stands.

All the essentials of the economic calculation argument are presented by Pierson.

1. Society faces specifically economic problems, which cannot be reduced to the fields of competence of technologists or engineers.
2. These problems will not disappear under communism/socialism, but the present solution, the market (for factors of production), will disappear. Communism will have to find some alternative solution.
3. Any solution must take the form of comparing any and all goods according to common units denoting what Pierson calls their "value."
4. (By implication) Apart from market prices, no such units can be found. Therefore communism is impossible.

As Mises later acknowledged, "Pierson clearly and completely recognized the problem in 1902."[9] However, Pierson's approach is that of throwing out a number of suggestions about difficulties in operating a socialist economy. Apparently, he does not himself realize the relative importance of the points he is making. He overstresses international trade, in view of the fact that Marxists believe in world unification.[10] He often fails to separate the questions of allocation and remuneration, though he does clearly see that it "is possible. . . to carry out works at too high a cost, to put up buildings in the wrong places and to design them in a manner inappropriate to their purpose," and that this cannot be a purely technical matter, but must be one of "value."

Pierson's continual harping on the necessity of value may seem strange to a modern reader. But in 1902 any active socialist or critic of socialism would have known almost by heart the celebrated passage from *Anti-Dühring* in which Engels explained how very easy it would be to organize socialist production:

> Society can simply calculate how many hours of labour are contained in a steam-engine, a bushel of wheat of the last harvest, or a hundred square yards of cloth of a certain quality. . . . society will not assign values to products. It will not express the simple fact that the hundred square yards of cloth have required for their production, say, a thousand hours of labour in the oblique and meaningless way, stating that they have the *value* of a thousand hours of labour. It is true that even then it will still be necessary for society to know how much labour each article of consumption requires for its production. It will have to arrange its plan of production in accordance with its means of production, which includes, in particular, its labour-power. The useful effects of the various articles of consumption, compared with one another and with the quantities of labour required for their production, will in the end determine the plan. People will be able to manage everything very simply, without the intervention of much-vaunted "value."[11]

Today, the myopia and economic illiteracy of this passage are painfully evident to anyone.

Weber on Rational Calculation

It often turns out that a crucial breakthrough is made independently and almost simultaneously by several individuals. The economic calculation argument was separately given a full and clear statement in 1920 by Boris Brutzkus, Ludwig von Mises and Max Weber. Weber's version occurs in his *Economy and Society* which was not published until the following year.

Weber's treatment is slighter than those of Brutzkus or Mises, but in its context it is something of an aside, since the work is mainly an attempt to summarize the classification of "ideal types" which Weber believed necessary for the sociological study of modern Western economic and political institutions. This task, however, leads him to point out the limitations of "calculation in kind" by contrast with monetary calculation, an issue which was highly topical since in 1919 two influential socialist theorists, Otto Neurath and Otto Bauer, had each published books advocating a moneyless economy.[12] Weber refers specifically to Neurath, who argued that non-monetary calculation was already well established, that market prices were arbitrary anyway, since they did not measure anything, and that the German war economy had shown the way forward to a new "natural" (moneyless) economy.

Weber's argument is vitiated by his concern with an unsound (and not altogether intelligible) opposition between "formal rationality" and "substantive rationality."[13] He states that only the market can permit the achievement of a very high degree of formal rationality. His concept of substantive rationality is obscure, but it seems that Weber believes either that formal rationality is important in its own right, or else that it is a necessary condition of any substantive rationality. At any rate, he concludes that

> the possibility must be considered that the maintenance of a certain density of population within a given area is possible only on the basis of accurate calculation. In so far as this is true, a limit to the possible degree of socialization would be set by the necessity of maintaining a system of effective prices.[14]

This seems "substantive" enough. Weber acknowledges that non-monetary budgeting may be "rational" under very simple conditions, "so long as the situation does not require a very precise estimate of the comparative utility to be gained from the allocation of the available resources to each of a large number of very heterogeneous modes of use."[15] Non-monetary computation in small-scale, self-sufficient households, once it has to deal with factors of any complexity, is confined to "traditional standards" and "rough estimates," and cannot therefore cope very well with changing conditions.

Rational accounting of any complexity requires money prices, and these require the autonomy of separate units. Fictitious prices, which do not correspond to those actually established by competing enterprises in a market, would be useless.[16] Calculation in kind may work to some extent where different ways of producing the same final good are being compared, or where a given supply of factors may be used in alternate ways to produce one of several kinds of goods.

> But the more difficult problems of calculation begin when it becomes a question of comparing different kinds of means of production, their different possible modes of use, and qualitatively different final products. . . . the comparison of different kinds of processes of production with the use of different kinds of raw materials and different ways of treating them, is carried out today by making a calculation of comparative profitability in terms of money costs. For accounting in kind, on the other hand, there are formidable problems involved here which are incapable of objective solution.[17]

A modern enterprise is perpetually confronted with the question whether each of its parts is paying its way, or whether any part is utilizing inputs that could more rationally be used elsewhere. This can be settled relatively easily and accurately using proceeds and costs expressed in money, but "it is exceedingly difficult to do this entirely in terms of material goods, and indeed it can be accomplished at all only in very simple cases." No technical improvements can save the day for moneyless calculation, asserts Weber: "really exact accounting" in kind is "impossible in principle." The main problem is one of imputation, attributing values to the factors of production. Any non-monetary system of accounting would have to set up "indices of the value" of different resources which would have to play a role similar to that of market prices. But there is no way of establishing such indices:

> Nothing is gained by assuming that, if only the problem of non-monetary economy were seriously enough attacked, a suitable accounting method would be discovered or invented. The problem is fundamental to any kind of complete socialization. We cannot speak of any kind of a "rational planned economy" so long as at this decisive point we have no way of working out a rational plan.[18]

Brutzkus and Bolshevism

Boris Brutzkus was an economist caught up in the Russian revolution, the subsequent Bolshevik takeover, and the attempt by the Bolsheviks to usher in a communist order. In August 1920 the Bolsheviks were at their hour of greatest glory. They had defeated the "counter-revolutionary" forces in the field, and fastened their own unchallenged rule onto the Russian Empire. The abolition of money was in progress: the communist economy was

visibly taking shape. Its impoverishing dislocations of production could still be blamed on the recent wars. At this moment, Brutzkus delivered a lecture to an academic audience in Petrograd, explaining that "the system of Marxian communism, as then conceived, was—quite apart from the conditions produced by the war—intrinsically unsound and must inevitably break down."

Seven months later, the Bolsheviks found themselves compelled, if they wished to remain in power, to abandon the pursuit of communism and deliberately foster the market economy. At the same time, there was a temporary relaxation of political repression. Some criticisms of the regime were permitted to appear, subject to a rather mild censorship. Brutzkus published the substance of his lecture in a learned journal, and only a few paragraphs were deleted by the state. In the summer of 1922, political repression was intensified once more. Many anti-Bolshevik academics were rounded up and ordered to leave the country. Trotsky described this policy as "preventive humanity," and argued that

> Learned ideologists are not at present dangerous to the Republic, but external or internal complications might arise which would oblige us to have these ideologists shot. Better let them go abroad therefore.[19]

Trotsky probably did not dream that the same preventive humanity would before long be accorded to him.

In the 1921 articles based on his 1920 lecture, Brutzkus points out that "scientific socialism" has confined itself to criticizing the capitalist order, without paying any serious attention to the organization of socialist society. Both the Western social democrats and the Russian Bolsheviks found themselves in power without possessing the comprehensive plan which would obviously be required for the construction of socialism. Nonetheless, the outlines of Marxian socialism are clear: it is on a large industrial scale, and it replaces the "anarchy of production" with a unitary plan. There are therefore no wages, profits, rent or other prices.

Brutzkus argues that any economic activity "must obey the principle that its results must correspond to the costs expended upon them."[20] In a primitive, small-scale society this is fairly easy. In the "capitalist system" the principle is obeyed by making sure that goods can be sold at a price which covers their costs of production. "This evaluation takes place by virtue of a spontaneous process, the results of which must be taken by the entrepreneur as data." But when central planning has supplanted the market, these data will clearly not be available.

After dismissing the suggestions of Bukharin and Tschayanoff that calculation in kind could be performed, Brutzkus considers the idea of using "labor" as a measure of production costs. There is no way of reducing all the varying qualities of labor to a single homogeneous measure, and "labor value" would fail to take account of the current scarcity of capital

goods. Furthermore, it is only in a hypothetical and never-to-be-reached equilibrium that market prices would equal past production costs (and hence, if we assume that all production costs can be reduced to labor, to "labor values"). The actual divergencies of market prices from costs of production represent important influences which ought to be taken into account, and which would therefore have to be included in any method proposed to replace market prices.

The socialist planners would have to quantify everyone's needs, and then specify the means of attaining them. Brutzkus believes that even to measure the population's requirements for foodstuffs would be extremely difficult, and to estimate all their needs would be beyond the capabilities of any administrative body.[21] But this is not the main problem. In the market, enterprises must pay their way or close down; but under socialism, "there exists no direct connection between the productivity of an undertaking and the supply of funds for its continuance." Nor could there be any such connection, for

> under socialism there is no general measure of value. Suppose that a Soviet estate has contributed so and so much milk, so and so many pounds of meat, so and so many bushels of grain. How many pounds of best quality seed, how much artificial manure or oil cake, how many head of breeding cattle or suits of clothes and how much fuel may the estate claim in return for its products?...in a society without markets the problem is insoluble.[22]

Brutzkus presents a number of other arguments not central to the economic calculation question. He points out that if the socialist authorities once accept the need to keep material rewards for work in proportion to the productiveness of the work, they will be bound to introduce rent, interest and profit. He argues that there are no grounds to expect any enhancement of personal freedom, much less the abolition of the state, from any attempt at socialist planning, and calls into question the view that people will work more enthusiastically in a socialist society. Finally, he claims that conditions in Russia, with its self-sufficient isolation and highly concentrated industry, have been rather favorable to the institution of socialism. Consequently, its failure there is an especially conclusive refutation.

The Classic Statement

Of the trio which unleashed the economic calculation argument, Weber, Brutzkus and Mises, the outstanding figure was undoubtedly Mises.[23] His statement was published first, it was soon incorporated into a comprehensive critique of socialism in all its aspects, *Die Gemeinwirtschaft (Socialism: An Economic and Sociological Analysis)*, it quickly reached a wide audience of socialists and was so stinging and provocative that it could not be ignored. Judged from the viewpoint of exposing the weakness of

socialism as a practical project (which was not Weber's primary purpose), Mises' contribution was much more pertinent and detailed than Weber's, and also more exact and succinct than Brutzkus'. The socialist economist Oskar Lange, in a sarcastic observation with serious overtones, stated that Mises' services to socialist theory were such that a statue of him ought to occupy an honorable place in the great hall of the socialist society's Central Planning Board. True, the statue has not so far materialized. But then, neither has any Central Planning Board of the kind envisaged by Lange.

In his "Economic Calculation in the Socialist Commonwealth," Mises emphasizes that the way in which consumer goods are distributed is a secondary matter. Like Pierson before him, he points out that once individuals in a socialist society have collected their "coupons," trade will emerge. But this trade will be confined to consumption-goods. Production-goods, because they will be owned by "the community," cannot be subject to commercial transactions.

> Just because no production-good will ever become the object of exchange, it will be impossible to determine its monetary value. Money could never fill in a socialist state the role it fills in a competitive society in determining the value of production-goods. Calculation in terms of money will here be impossible.[24]

Under simple conditions, a Robinson Crusoe, or a family of subsistence farmers, would not only value consumption-goods, but would also be able to impute value to production-goods. If fish were valued, so would be a fishing net. If wild boar were valued, so would be a spear. Even at such a simple level, the producers would have to take account of "the intersubstitutability of goods." Some production-goods could be used for producing alternative consumption-goods in different quantities. Crusoe would have to make a rough-and-ready estimate of the importance of these production-goods, but he would not, of course, be able to total costs of production in money prices. Neither would he have access to any units which could enable him to assess whether a contemplated course of action (such as building a highly elaborate boar trap with materials which could be used for other purposes) was worth it.

In a society with a more complex technology, the rough-and-ready estimates employed by tiny bands of hunters and farmers would be useless. Here, assessment is made in terms of costly or less costly, dear or cheap, as demonstrated by objective exchange-value: market prices expressed in money. The use of objective exchange-values for economic calculation "entails a threefold advantage." Calculation can be based upon the valuations of all participants in trade; there is in monetary profitability an immediate and sure indication of economical production; and values can be referred to a common unit.

Two conditions are necessary before monetary calculation can be

employed in directing production. First, higher-order goods (capital goods) must be exchanged, as well as first-order goods (consumption-goods). It is not enough to be able to value first-order goods, because

> No single man can ever master all the possibilities of production, innumerable as they are, as to be in a position to make straightway evident judgements of value without the aid of some system of computation. The distribution among a number of individuals of administrative control over economic goods in a community of men who take part in the labour of producing them, and who are economically interested in them, entails a kind of intellectual division of labour, which would not be possible without some system of calculating production and without economy.[25]

Second, there must be "a universally employed medium of exchange," money, used in the exchange of means of production as well as consumption-goods. Otherwise it would be impossible to reduce all the many exchange-relationships to a common denominator.

It is no use appealing to existing examples of state-directed concerns, for these are islands of "socialism" within the market, having access to market data. Nor can socialism merely continue what was done previously within the market, for with changing conditions, the old methods of production will "become irrational."

Because the socialist planners will be unable to reduce all the means of production to a common denominator, they will be confined to hazarding "vague estimates." The possibility of exact calculation disappears with the price system. "Where there is no free market, there is no pricing mechanism; without a pricing mechanism, there is no economic calculation."[26]

As a possible way out, Mises considers the division of industry into branches controlled by "syndicates" permitted to trade with each other. However, no useful prices could emerge except where the syndicates' autonomy was such that they held *de facto* property rights in their means of production:

> This would not be socialization but workers' capitalism and syndicalism.[27]

Today we might call this "market socialism," a term that would have sounded very strange in 1920. Mises makes it clear that he regards "workers' capitalism and syndicalism," in this context, as a form of "private ownership of the means of production." It is effective control by sections of society, instead of unitary control of all resources from a single center.

Mises dismisses on two grounds the suggestion that labor-hours could be used to estimate production costs. It ignores the different qualities of labor, and it does not take into account unproduced natural resources. The latter point applies even if, along the lines of the Marxian theory of value, we

subsume under "socially necessary labor-time" all natural resources as and how they are used up in production:

> Let the amount of socially necessary labour-time required for the production of each of the commodities P and Q be 10 hours. Further, in addition to labour the production of both P and Q requires the raw material a, a unit of which is produced by an hour's socially necessary labour; 2 units of a and 8 hours' labour are used in the production of P, and one unit of a and 9 hours' labour in the production of Q. In terms of labour P and Q are equivalent, but in value terms P is more valuable than Q. The former is false, and only the latter corresponds to the nature and purpose of calculation.[28]

Mises also advances the argument that people cannot be expected to display suitable initiative in an organization in which they have no personal stake, but he observes that even if this objection were of no account, the economic calculation argument would be decisive. After a brief review of the inconclusive remarks of Otto Bauer and Lenin on the running of a socialist economy, Mises finishes by declaring that although "rational economic activity is impossible in a socialist commonwealth," this need not deter those socialists motivated by ascetic ideals, nor those prepared to abandon material affluence for the sake of the ethical goal. Mises does not dispute that "socialism" is possible at a low level of technology and consumption.

What Mises Meant by "Socialism"

Mises always made clear what he meant by socialism, a society without private ownership and market exchange of the means of production. Socialism might or might not do away with money altogether, but it would by definition do away with monetary exchange of factors of production. In socialism, social production would be planned and managed as a single unit by a single supreme planning body.

There is no question but that this conception of socialism corresponded to that of the vast majority of avowed socialists in 1920, and for some time afterwards. One indication of this is that Brutzkus and Weber independently took it for granted, and the earliest respondents to Mises did not challenge it. However, Mises did exaggerate slightly in claiming that "all socialists before 1920" held that "socialism necessarily requires the abolition of the market and of market exchange and even that this fact is both the essential element and the preeminent feature of a socialist economy."[29] To make this statement correct, it is necessary to put "Marxist socialists" instead of "socialists," and "market for industrial means of production" instead of merely "market." As a matter of fact, the earliest socialists, the followers of Saint-Simon, did not commit themselves to the total

elimination of the market, and Proudhon was an early "market socialist." The *Communist Manifesto* execrated "bourgeois socialism," which sought to reform instead of abolish "the bourgeois relations of production" (private property and the market). It was the growth of Marxism at the expense of other socialist schools which led by the turn of the century to the predominance of the strictly non-market idea of socialism and which was almost taken for granted in the German-speaking world when Mises penned his critique.

It may clarify matters to distinguish four varieties of projected socialism.

1. Marxian communism. Total abolition of the market, money and prices. Distribution of consumer-goods either by ration tickets, such as labor-vouchers (definitely *not* money) or by free access. Coordination of production to be achieved by central planning, using technical data only, not prices.
2. What we might loosely call "Communist production, market distribution." A market exists for consumer goods only. Either it emerges spontaneously on the basis of the ration tickets mentioned above; or the planning authority deliberately allows for such a market, pays everyone in tickets which can be transferred and accumulated, and somehow prices consumer goods so that they can be acquired from "the community" (i.e., the planning body) in exchange for the tickets. All production goods are owned by "society"; therefore they do not change hands on a market, and have no market prices.
3. Proposed systems which, while not explicitly either of the above, contain features which must lead to one of the above. (For example, if it were proposed that all prices should be fixed centrally by the state, this would mean that the state would have to determine all physical quantities and technical processes, too. The "prices" would cease to be real prices at all, and the market for factors of production would be ruled out.)
4. Out-and-out "market socialism," in which there is a market for both consumer goods and means of production.

According to Mises, the first three are practically impossible, in conjunction with large-scale industry and division of labor. The fourth is entirely feasible, though it amounts to acceptance of everything which most socialists for the past hundred years have been denouncing as capitalism. It is possible that market socialists may reject some of the institutional requirements and social consequences of a market for factors of production, in which case their position is internally inconsistent. For example, a society with a market for factors of production is one where industry is governed by "the profit motive," and where neither incomes nor wealth holdings can be equalized.

Mises defined socialism in terms of ownership by "the community." In passing he indicated that this could mean nothing other than state ownership, but he did not wish to be sidetracked by a merely semantic argument.[30] Although the rhetoric of modern socialism has generally been democratic, appealing to the interests of the masses, the economic calculation argument applies to *any* centrally-directed system:

> A socialist community can have only one ultimate organ of control.... It does not matter whether this organ is an absolute prince or an assembly of all citizens organized as a direct or indirect democracy. It does not matter how this organ conceives its will and expresses it. For our purpose we must consider this as accomplished.[31]

As Rothbard has pointed out,[32] the argument applies equally to the notion of "One Big Firm," a single cartel or trust emerging from the market. Such a firm would be unable to calculate and would swiftly disintegrate. In practice, this means that the free market places a limit on the extent of even partial monopolies. The growth of such monopolies must lead to the indeterminacy of prices, with consequent losses and the re-assertion of competition.

NOTES

1. Quoted in Ludwig von Mises, *Socialism: An Economic and Sociological Analysis* (London: Jonathan Cape, 1951), p. 135.
2. Bagehot, *Economic Studies* (London: Longmans Green, 1898; reprint ed., Clifton, N. J.: Kelley, 1973), pp. 54–58.
3. P. H. Wicksteed, *The Common Sense of Political Economy* (London: George Routledge and Sons, 1933), 2:682.
4. Actually there can be no possibility of separating allocation from remuneration, but this is a conclusion drawn *from* the economic calculation argument, and to state the argument clearly it is necessary, as a preliminary, to separate the two issues.
5. Friedrich von Wieser, *Natural Value* (London: Macmillan, 1893), passim; Böhm-Bawerk (on the need for interest under socialism), *Capital and Interest* (South Holland, Ill.: Libertarian Press, 1959), 2:341–46; Vilfredo Pareto, quoted in F. A. Hayek, *Individualism and Economic Order* (London: Routledge and Kegan Paul; Chicago: University of Chicago Press, 1949), p. 140; Enrico Barone, "The Ministry of Production in the Collectivist State," in Hayek, ed., *Collectivist Economic Planning* (London: George Routledge and Sons, 1935).
6. This point is pursued in the following chapter of the work from which this paper has been excerpted.
7. Nikolaas Pierson, "The Problem of Value in the Socialist Community," in Hayek, *Collectivist Economic Planning*, pp. 60–61.
8. *Ibid.*, p. 75.
9. Mises, *Socialism*, p. 135.
10. Few participants in the economic calculation discussion have paid any attention to the fact that Marxist socialism demands central planning *on a worldwide scale*.
11. Friedrich Engels, *Anti-Dühring: Herr Eugen Dühring's Revolution in Science* (Moscow: Foreign Languages Publishing House, 1962), pp. 424–25.
12. Otto Neurath, *Durch die Kriegswirtschaft zur Naturalwirtschaft* [Through the War Economy to the Natural Economy]; Otto Bauer, *Der Weg zum Sozialismus* [The Road to Socialism]. Neurath's work is now available in English as "Through War Economy to Economy in Kind," in a collection of his writings: Marie Neurath and Robert S. Cohen, eds., *Empiricism and Sociology* (Dordrecht, Holland: D. Reidel, 1973). His argument is briefly dealt with in T. J. B. Hoff, *Economic Calculation in the Socialist Society* (London: William Hodge, 1949), pp. 48–51.
13. Max Weber, *The Theory of Social and Economic Organization* (New York: Free Press of Glencoe, 1964), pp. 184–85.
14. *Ibid.*, p. 207.
15. *Ibid.*, p. 188.

16. *Ibid.*, p. 194.
17. *Ibid.*, pp. 203–204.
18. *Ibid.*, p. 205.
19. Quoted in Boris Brutzkus, *Economic Planning in Soviet Russia* (London: George Routledge and Sons, 1935), p. xvii.
20. *Ibid.*, p. 9. Part I of this book consists of Brutzkus' 1921 articles.
21. *Ibid.*, p. 44.
22. *Ibid.*, pp. 45–46.
23. Mises, "Die Wirtschaftsrechnung im sozialistischen Gemeinwesen," *Archiv für Sozialwissenschaft und Sozialpolitik* 47, no. 1 (April 1920). Translated as "Economic Calculation in the Socialist Commonwealth," in Hayek, *Collectivist Economic Planning*.
24. Mises, "Economic Calculation," p. 92.
25. *Ibid.*, p. 102.
26. *Ibid.*, p. 111.
27. *Ibid.*, p. 112.
28. *Ibid.*, p. 113. If we follow Marx's usage, there would be *no* "value" under socialism/communism and hence no application of the labor theory of value. There is no evidence that Marx intended his labor theory of value to have any bearing on the organization of socialist production; it is a theory to account for relative prices under capitalism. Mises writes of "the labor theory of value" as a basis for socialist calculation, but if we read this as "accounting in socially necessary labor-hours," the argument is not affected.
29. Mises, *Human Action: A Treatise on Economics* (Chicago: Henry Regnery, 1963), p. 707.
30. Mises, *Socialism*, p. 129.
31. *Ibid.*, p. 130.
32. Murray N. Rothbard, "Ludwig von Mises and Economic Calculation under Socialism," in Laurence S. Moss, ed., *The Economics of Ludwig von Mises: Towards a Critical Reappraisal* (Kansas City: Sheed and Ward, 1976), pp. 75–76.