

Notes for a critique of Brewster

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1. He concedes that Cottrell and Cockshott's model is the only coherent intellectual opposition that the Austrian school face from the left
2. He concedes that we have demolished the argument that socialist calculation is too complex to be feasible.
3. He has an argument that what we are doing is no longer socialist calculation because it is not independent of the market (because we allow a market for consumer goods),
4. Following on from 3 he argues that our labour values are no longer labour values because they are contaminated by market effects.

We will reply mainly on points 3 and 4 which, we think, are very weak argument.

Those that Hayek was arguing against like Lange and Dickinson allowed for markets in consumer goods, this did not lead Hayek to say : Oh you are not really arguing for socialism since you have conceded a market in consumer goods, he did not, because there remained huge policy differences between him and Lange even if Lange accepted consumer goods markets. It is thus a very weak argument by Brewster to say that what we advocate is not really socialist calculation because it is contaminated in some way by market influences. There still remains a huge policy difference between us and him. If he wants to argue that what we advocate is not real socialist calculation, well he can do so, but this would be seen as quibbling over definitions of socialism. There remain substantive policy differences and he has now to show that the policies we are advocating would be impossible in practice.

He is wrong in saying that our labour values are no longer labour values since they are now influenced by market prices. In Marxian economics there are three distinct concepts, value in use, value in exchange and labour value. Value in use is held to be non-comparable, it sets up no scale, and is a matter for technology and design study rather than political economy. Value in exchange, is, when represented in monetary prices, a scalar quantity. Labour value is another scalar quantity but is distinct from exchange value. Exchange value ratios closely approximate labour value ratios in capitalist economies[12, 10, 13, 3, 14, 15] but deviate from them under the influence of imbalances in supply and demand. We continue to reproduce these distinctions in the consumer goods market.

The deviation between the two continues to indicate imbalances in supply of final goods.

But it is wrong to say, as Brewster does, that this prevents labour values from being usable for economic calculation when dealing with intermediate goods. They continue to perform several distinct functions. The role of labour time accounting is to:

- De-mystify economic relations by revealing the underlying social division of labour,
- In the process they create a basic presumption towards social equality. Were all all prices marked in terms of hours, and were all payments in terms of hours employees would rebel against current dispensation where they are paid the equivalent of 4 or 5 hours for an 8 hour day's work.
- To provide a decentralised heuristic measure of social cost that aids work units to select among alternative techniques of production those which are likely to be of the lowest social cost. The labour values provide those people, who have to chose between different production techniques, with a provisional indicator as to which is likely to be socially cheaper in the long run. The labour values also provide those people, who have to chose between different production techniques, with a provisional indicator as to which is likely to be socially cheaper in the long run. It is worth our while explaining below why this is only provisional.
- It is necessary to work out the labour values of intermediate goods if we are to have the labour values of final goods, since intermediate ones enter into final ones.
- And we need the final labour values as an index to regulate the consumer goods market.

Today, in a market economy information provided by current prices is only provisional as they are likely to be different in the future and decisions made on todays prices may be invalidated by tomorrows prices. *Market prices have only a short term validity.* The situation is somewhat the reverse for labour values in a planned economy. These have intermediate term validity, *but can not be the sole decision criterion for short term local production plans.* We have never claimed that labour values are more than one component that enters into economic calculation. They have to be backed up by other mechanisms of calculation, just as computation in prices has to be backed up by other mechanisms.

The fact that a given component, say a particular chip, call it the X10a to be used in a computer is cheaper in terms of labour than an alternative component does not mean that sufficient X10as to meet the Northern Star computer factories planned production for next year. That can only be determined at an aggregate social level. So Northern Star computer factor puts forward its proposed models, including one that uses the X10a, and perhaps some older models that use the previous X9b chip.

It is up to the social planning network, which has access to information about all the factories that would like to use the X10a, and about the expected output levels of the plant producing X10as, to select a scale of production of different computer models that will be compatible with one another. In the short term this may mean that Northern Star are told to go on producing more of older models than would appear to be justified solely on the basis of comparing the labour costs of the X10a and the X9b. In the medium term, the decision to design a new model using the X10a will turn out to be justified, but in the short term it is not appropriate. Even in a capitalist economy, firms do not trust price data to be sufficient, not unless they are very naive. A well established firm will back up price data from its suppliers with queries about stocks held, delivery times, expected production schedules.

Why is this?

It follows from basic information theory. The structure of production is a (sparse) matrix, whereas a price system or a value system is a vector. No single vector of prices or values can capture the information structure encoded in the input/output matrix. Values are a solution to a set of equations defined by the input/output system under operations which involve multiplying the rows of a matrix¹. This multiplication operation corresponds in the real world to a change in the scale of output of a product. That in turn implies that inputs can be redirected to or from particular activities. To the extent that labour and other resources can be redirected from one branch of activity to another, labour values labour values are a good indicator, over the medium term, of relative social costs of products. Over the long term they will be misleading as technical advances can lead to substantial changes in relative labour costs. The same restriction applies to prices. A price is only useful to the extent that it can be multiplied by a number of units to be purchased. Since the current production of inputs is finite, a price is only valid for an adjustment in usage that is of the same order as the buffer stocks or excess capacity that exists for that product. Over the short term, values and prices are insufficient unless backed up by holistic information, since there may, in the short term be lags in the production of necessary inputs.

Brewster is dismissive of this sort of holistic calculation associated with Neurath writing :

Their cardinality certainly makes units of socially necessary labor time more plausible as a basis for socialist calculation than comparisons in nature as suggested for instance by Neurath.

then adding in a footnote

One of the glories of the internet is you can now find people who take even calculation in kind seriously.

He is surely wrong to dismiss in-natura calculation in this cavalier fashion. Neurath may have been relatively easy to deride, all the easier because his work was

¹This is true whether one uses iterative or analytic techniques to arrive at the solution.

until recently only available in German[8, 9]. But what of Kantorovich? As long ago as the late 1930s[6] he was showing that precisely the sort of optimisation problem that Mises was concerned with, the optimal choice between alternative techniques of production, was possible using calculations that were entirely in physical quantities. Indeed every economic system must calculate in kind. The whole process of capitalist economy would fail if firms like Honda could not draw up detailed bills of materials for the cars they finally produce. Only a small part of the information exchanged between companies relates to prices. The greater part relates to physical quantities and physical specifications of products. Within capitalists companies, Kantorovich's methods have been widely adopted to optimise the selection of production techniques. For linear programming to work, the sub-system of the economy under consideration needs to be supplied with a target vector from the outside. A capitalist firm is supplied with a vector of market prices from the outside, and using these can apply linear programming to optimise its resource usage. A socialist factory or unit of production is supplied with a plan ray : the ratio in which final outputs must be produced, and final inputs consumed.

This is illustrated in Figure 1. The relative prices provide a capitalist firm with isovals, lines of constant worth, in terms of output, and the aim is to find the intersection between the production possibility frontier and the isoval furthest from the origin: the combination of outputs that will maximise the value of sales. The socialist factory has a plan ray which it seeks to maximise: it tries to select a point on the production possibility frontier that maximises the implementation of the plan. In each case the amount of information required to specify the ray or the set of isovals is the same: for n outputs we need a vector of length $n - 1$ being either relative prices or relative proportions of planned output. Provided with such information there are a number of different computational techniques by which an optimal production plan can be arrived at: Kantorovich's solution[6], the Simplex [5] method, or various interior point methods[7]. In our book[4] we advocated the use of what amounted to an interior point technique.

Provided with either a vector in natura, or a vector of prices, an economic sub-system can optimise. There is no *logical*² reason why the sub-system could not be the entire production structure of the economy. Our argument is that the state can derive a plan ray from a number of inputs:

1. From recording sales and selling prices of final consumer goods.
2. From politically arrived at priorities for public goods.
3. From international treaties such as the Kyoto protocol.
4. From scientific knowledge of the environmental or health risks of different products.

²Brewster is careful to restrict his substantive criticism of us to logical grounds, conceding that we have shown that problems of this scale are effectively computable.

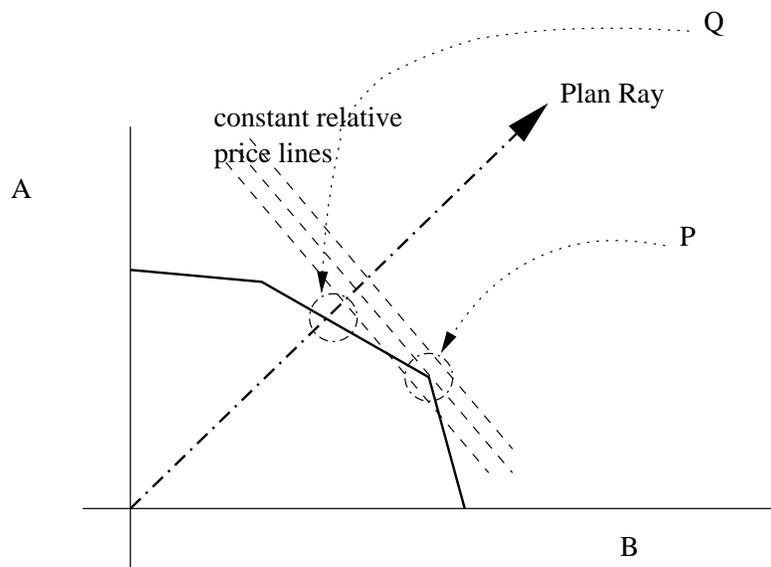


Figure 1: Diagram showing, for the two dimensional case, how linear programming can be solved either by providing a set of hyperplane given by prices as a guide, or a plan ray. The socialist enterprise would select point Q given the plan ray shown, and the capitalist enterprise would select point P given the relative prices given.

Part 1 is a market mechanism. Brewster holds that allowing such a market in a socialist economy is logically impermissible since he asserts that a plan must be independent of the market and the market independent of the plan.

The problem is that in order for any rational socialist plan to be formulated, it must utilize markets, but insofar as markets are useful for planning, they must be unaffected by the plan. However, if there is a plan, the markets cannot be unaffected by it. ([2] p75)

Just why he believes this he does not say. It seems an unreasonable requirement. In no country can the market be independent of the general social context: pattern of property ownership, taxation, government regulation, cultural norms etc. A planned socialist economy will have a very different distribution of income from a capitalist one, and this will certainly influence the structure of the market for consumer goods. But so what?

socially necessary labor time was introduced as an “objective” measure of value and as such proclaimed uncapricious and scientific. It turns out instead to be “subjective” thrice over.¹⁰ It is, as we have seen, created in the first instance by consumer demand, modified or overruled by the planning authority in turn guided to whatever degree by democratic processes. ([2] p 72)

This is to misunderstand what we are saying. Consumer goods would be indeed marked with two numbers, their labour content in hours, and in addition to this, if the good was in short/excess supply, they would be marked with a premium/discount also expressed in hours. Consumers would have pay the labour value +/- the premium or discount when purchasing a good whose supply was not approximately in equilibrium. The labour value gives to the consumer a good idea of what the good is going to be worth in the medium term. If a particularly popular model of MP3 player is marked at a value of 5 hours with a premium of 2 hours, that is a good indication that it will be worth holding off purchasing until the premium drops to zero.

Within the state sector, where public services and industrial inputs are being costed, goods and services would be valued at par. The premiums in the consumer goods market need not penetrate here. Within the state sector there are no further purchases or sales and the appropriate intensities of production of intermediate goods can be directly computed, as indeed Brewster concedes.

Even in advanced capitalist economies, a very substantial part of the economy is in the made up by the public sector. This either directly produces public goods, for example the UK National Health Service or the French Ministry of Education; or like the Navy, it purchases goods made by the private sector. So the fact that a large portion of the social product is allocated according to explicitly political criteria is common to advanced societies. The state orders 3 new aircraft carriers of 70,000 tons displacement and speed of 30 knots³. It

³It is significant that when the British and French governments decide to do this they have to engage in long term industrial planning[1]. The state is not a corner shop. It could not

specifies the construction of 1000 new public schools. It sets targets for numbers of surgical operations and for waiting times for operations. The targets of these public interventions are all explicitly *in-natura*.

In addition there is a growing awareness that we live on a finite planet, whose ability to provide us with inputs and absorb or waste is limited. This results in international initiatives to conserve our environment, the Kyoto protocol, European Fisheries directives etc. These are expressed in physical units : so many million tons of CO₂, so many thousand tons of cod, etc. At the same time advanced society is plagued by problems of ill health and premature mortality caused by excessive consumption of trans-fats, sugars, and addictive drugs, and there is a consequent pressure to regulate the consumption of these products. Such regulation would amount to further politically decided *in-natura* targets that the economy had to meet. But the meeting of such targets by market mechanisms is uncertain, and politically unpopular.

Let us take a two examples: carbon dioxide emission control, the sale of trans-fats and saturated fats. Suppose we want to use the price mechanism alone to restrict carbon dioxide emissions to 1990 levels. Well in principle, a suitable tax on fuels proportional to their carbon content would do the job. But unless one knows the elasticity of demand for fossil fuels as a whole, one does not know at what level to set the tax. The government would have to progressively raise the tax until fossil fuel usage fell to the desired level. But in embarking on this task it does not know how many raisings or lowerings of the tax will be required to before they get it right. Each sequential raising of the tax will be less than popular, making governments loath to embark on this course. If, under a still capitalist economy, a government is serious about reaching such targets it has to set rations for carbon emissions in physical terms. There can be lots of debate as to whether these rations should distributed to existing heavy users of coal and oil, giving them an effective rent windfall, or distributed equally to all citizens, but either way the state is acting to enforce an in-kind constraint on the economy.

In a planned economy⁴, then such in-natura constraints on carbon dioxide emissions can readily be incorporated. One specifies that the final output vector selected by consumer choices be maximised subject to the carbon dioxide constraint in addition to all the other material constraints that the economy must face. The existence of environmental constraints however, means that

1. The simplex intersecting the plan ray will be closer to the origin than it would be in the absence of the additional constraints.
2. If we apply our general rule that the plan ray is adjusted until the ratio $\frac{v_i}{m_i} = \psi_i \simeq 1$ for all commodities i , where m_i is the market price of i and

just order £4billion worth of carriers from a wholesaler, it had to plan how orders would fit in with national industrial capabilities. It is also significant that this planning turned out to focus in large measure on the allocation of labour and the labour demands of the project - just what the Marxian theory of value concentrates on. It was of course when contemplating the problems of war economy that Neurath originally raised the issue of in-natura planning[9].

⁴Let us assume it is planned using either linear programming, or some form of constraint programming.

v_i its labour content, then the plan ray may shift relative to the plan ray that existed prior to the addition of the carbon dioxide constraint. In plain English, people may adjust their consumption pattern if real incomes fall in response to the new environmental reality.

The significant point here is that an arbitrary additional set of constraints in kind can be added to the plan, where they have exactly the same status, from a computational standpoint, as technological constraints.

Consider the problem of obesity in the USA and the consequent fall in life expectancy[11]. Only someone who took the free-market as axiomatically the best of all possible worlds could assert that the combination of free consumer choice and profit maximisation by the food industry was leading to optimal welfare. If one takes the *laissez faire* position, then the role of government in preventing obesity is either nothing, or at most to preach self restraint. The prevention of diabetes, stroke etc, then appears essentially a question of moral responsibility. If on the other hand one says that the social function of the food industry is not to maximise the profit to its proprietors but to provide the nation with a adequate, wholesome and healthy diet, then one can no longer blame an obesity epidemic on moral degeneracy in the US population. Instead, it can be seen as a necessary consequence of a food industry which, in aggregate, produces far too much sugar, salt and saturated fat. This surplus production of fat and sugar, ends up on thighs, waists and around viscera. If the social organisation of production were directed at maximising welfare rather than maximising income, then natural measures of welfare like morbidity and life expectancy would rank as important as consumer preference in shaping output.

In a constraint planned economy one can add additional constraints like: total output of fat by the whole food industry should not exceed 70g per head of population per day. A constraint like this has the same computational status as any other. Some constraints will be set by nature : number of working hours per day must not exceed 24. Some will be social: total working hours per person week shall not exceed 48, total working population does not exceed 25 Million, etc. From the standpoing of linear programming all such constraints simply act to trim the production possibility frontier.

Such a constraint upon production does not interfere with individual choice. People who want to eat fatty food like potatoe chips can still buy them, but the relative price of potatoe chips will rise in response to the imposed constraint on fat. This will produce two results, a) people will 'freely' chose to buy less fatty chips whose production is unconstrained, and whose relative price is thus lower, b) the production of these less fatty varieties would rise. At any given moment, each individual remains free to select the fatty or the healthy option, but the total outcome is a healthier population, since average consumption of dietary fats would then be set by the best nutritional science.

In short, we argue that the market has a place, but only a limited place. It should be restricted to consumer goods, and even here, market indicators are not the *ultima ratio*. They are just one among many constraints that society has to recognise.

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