A Bukharian Critique
of Welfare Economics

by

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I Introduction

It is often argued that the labor theory of value is fatally undermined when account is taken of worker preferences among alternative occupations. This argument was very stridently made by Bishop (1985), for example, in the usually fair-minded Quarterly Journal of Economics. The purpose of this paper is to show that similar considerations undermine the "marginal conditions" of conventional Neoclassical welfare economics. What is shown here is that the "MRTS" and "MRT = MRS" conditions do not characterize pareto optimal states when workers are not assumed indifferent to different occupations and to the working conditions of their employment. Needless to say, this "robustness failure" considerably weakens the typical Neoclassical account of the nature of efficiency and welfare optima. The moral of this story is surely that the simple parables of "great visions," whether they be Marxist or Neoclassical, can seldom withstand much scrutiny.

This essay is chiefly concerned with one question: what happens to the usual conclusions of welfare economics when "worker preferences count?" Ironically, therefore, it is not outside the spirit of "The New Welfare Economics," which Samuelson famously described as concerned with the implications of the
"relatively mild assumptions" that more is better than less, and that preferences count (Samuelson, 1943: 605). The only twist of this paper is the insistence that the preferences of workers be counted too.

Another irony is that most of the conclusions derived below are implicit in one of the seminal papers of the New Welfare Economics tradition (Bergson, 1938). Indeed, the model presented in the opening of the analytical portion of this essay is an undisguised version of one of Bergson's models.

The title of this essay was chosen to note the striking similarity between the results of this paper and the themes of Bukharin's (1914) critique of Neoclassical economics. Further discussion is reserved for the conclusion.2

II A Model

Assume that there are n utility maximizing individuals, whose preference orderings have all of the usual properties necessary to assure the existence of continuous, twice differentiable utility functions. These functions and their arguments are specified as follows:

\[ U^i = U^i(x^{i_1}, \ldots, x^{i_m}; y^{i_1}_{11}, \ldots, y^{i_1}_{1t}; y^{i_1}_{s1}, \ldots, y^{i_1}_{st}), \]

for \( i = 1, \ldots, n \), where \( x^{i_j} \) is individual i's consumption of good j, and \( y^{i_{gh}} \) is individual i's performance of labor service g in production unit h.
Thus, in the model to be analyzed first, workers are assumed to be indifferent neither to the labor services that they perform (i.e. their occupation), as indexed by the first y subscript, nor to the production unit within which their labor is performed, as indexed by the second y subscript. The latter assumption is certainly not implausible in as much as worker discussions of their preferences among employers are common, even among economics professors.

Some special and familiar cases of these functions are worth noting because they most commonly underlie presentations of "marginalist" welfare economics, and because they will be alluded to later. First, if individuals are indifferent between performing the same service in different production units, then each "group" of y's may be summed within any utility function (this is Bishop's "occupational choice" model). Second, if individuals are indifferent between occupations and make only a "work-leisure" choice, then only the sum of all of the y's need appear (the "work-leisure" model that is ridden so hard in the New Classical Macroeconomics). Finally, if individuals have no taste even for leisure and supply labor inelastically, then all of the y's may be dropped (the Edgeworth-Bowley box model of most intermediate textbooks).

As usual, the utility functions are assumed to be increasing with respect to each of the x's and decreasing with respect to each of the y's. Each individual is also assumed to have a time constraint such that the sum of his y's is less than
or equal to a fixed constant, $d$ (hours in the day), with any residual being leisure, $\tilde{t}^i$.

Production functions for each of the $m$ goods are assumed to exist using labor services and the services of non-labor factors of production. They are assumed to be continuous, differentiable, and to exhibit constant returns to scale. For simplicity it is assumed that each production unit produces one good and that no good is produced by more than one production unit. We thus have $m$ production functions of the following form:

$$x_j = f^i(y_{j1}, \ldots, y_{js}, z^i_{k1}, \ldots, z^i_{ks}),$$

for $j = 1, \ldots, m$, where $y^i_j$ is the employment of labor service $g$ in production unit $j$, and $z^i_k$ is the employment of non-labor input $k$ in production unit $j$. The supply of each non-labor factor of production $\tilde{z}_k$, is assumed to be given. All in all, there are $n$ individuals, $m$ goods and production units, $s$ labor inputs, and $r$ non-labor inputs.$^4$

III Results

Necessary conditions for a pareto optimal allocation of inputs among production units and distribution of goods among individuals may be found, using the method introduced by Lange (1942), by maximizing the utility of one individual subject to the constraints imposed by the fixed supplies of inputs and the production functions, and to holding the utility levels of other individuals at fixed levels. The relevant Lagrangean is
\[ L = \lambda_1 U^1 - \lambda_2 (\bar{U}^2 - U^2) - \ldots - \lambda_n (\bar{U}^n - U^n) \]
\[ -\sigma_1 (x_1^1 + \ldots + x_1^n - f_1) - \ldots - \sigma_m (x_m^1 + \ldots + x_m^n - f^m) \]
\[ -g_1 (\Sigma y_{gj}^1 + \lambda^1 - d) - \ldots - g_n (\Sigma y_{nj}^n + \lambda^n - d) \]
\[ -\delta_1 (\Sigma z_{j1}^1 - \bar{z}_1) \ldots - \delta_r (\Sigma z_{jr}^r - \bar{z}_r) , \]
\[ \lambda_1 = 1 , \]

where the \( \lambda \)'s, \( \sigma \)'s, \( \gamma \)'s, and \( \delta \)'s are Lagrangean multipliers.

Necessary conditions for a regular interior maximum (excluding constraints) are

\[ \partial L / \partial x_{i,j} = \lambda_1 (\partial U^i / \partial x_{i,j}) - \sigma_j = 0 \]
\[ \partial L / \partial y_{i,gh} = \lambda_i (\partial U^i / \partial y_{i,gh}) + \sigma_h (\partial f^h / \partial y_g) - \gamma_i = 0 \]
\[ \partial L / \partial z_{k}^h = \sigma_h (\partial f^h / \partial z_{k}^h) - \delta_k = 0 \]
\[ \partial L / \partial \lambda_{i} = -\gamma_i = 0 \]

for \( i = 1, \ldots , n, j = 1, \ldots , m, g = 1, \ldots , s, h = 1, \ldots , m, \) and \( k = 1, \ldots , r. \)

In spite of this notational thicket, careful inspection of these equations will show that quite a different set of marginal conditions are implied than in the usual model in which "occupation" and "employer" preferences are ignored. Consider, for example, the MRTS conditions for "efficiency in production." In the conventional models it is true that if the MRTS between any two inputs differs between production units then a reallocation of those inputs can increase the output of goods produced by both production units. The increased output, with no sacrifice in leisure, could, therefore, make consumers
unambiguously better off. In this model, however, because consumers are also workers, a reallocation of labor between production units, even if it results in more goods, may make worker-consumers worse off if it happens that labor is reallocated from a more preferred work environment to a less preferred environment. For this reason, when worker preferences count, equality of MRTS's between production units, when it involves labor inputs, is not required for pareto optimality. This can be seen by comparing the MRTS's between the first labor input, \( y_1 \), and the first non-labor input, \( z_1 \), in the first two production units. They are as follows:

\[
(\frac{\partial f^1}{\partial y^1_1})/(\frac{\partial f^1}{\partial z^1_1}) = \frac{-U^1_u}{\partial y^1_{11}}/\delta_1 = \ldots = -\lambda_n(\frac{\partial U^n}{\partial y^n_{11}})/\delta_1,
\]

and

\[
(\frac{\partial f^2}{\partial y^2_1})/(\frac{\partial f^2}{\partial z^2_1}) = \frac{-U^1_u}{\partial y^1_{12}}/\delta_1 = \ldots = -\lambda_n(\frac{\partial U^n}{\partial y^n_{12}})/\delta_1.
\]

Notice that unless \( \frac{\partial U^1_u}{\partial y^1_{11}} = \frac{\partial U^1_u}{\partial y^1_{12}} \), that is, unless workers are indifferent between performing the same task in different production units, "efficiency in production" will not require equality of these MRTS's. In fact, the notion of "efficiency in production," per se, becomes hazy because it is not definable independently of preferences. With the exception of MRTS's between non-labor inputs, all "efficiency ratios" between marginal products will be preference dependent. No complete "objective" description of "efficiency in production" is possible without reference to the "subjective" data of worker preferences. In the popular parables, "efficiency in production" and "efficiency in consumption" are separable. If it were "robust,"
this separability would have important policy implications because improving "efficiency in production" could be confidently viewed as welfare improving. In this model, efficiency improvements of this type are not necessarily welfare improving for the simple reason that technical changes have "human" consequences.

Even the remaining traditional equality of MRTS's involving non-labor inputs would be lost with a slight modification of assumptions. That is, if workers are also assumed to have preferences among techniques of production, then a reallocation of non-labor inputs between production units, even if it resulted in increased outputs, would not make worker-consumers unambiguously better off. The reason is that changes in technique implied by a reallocation of inputs might well have adverse utility effects. This assumption, though not as analytically tractable as the Bergson assumptions used in the previous paragraphs, is certainly as plausible, possibly more so, and most certainly more important. Worker reactions to mechanization and automation are largely expressions of "technique preferences" of just this sort.

A similar examination of the necessity of the usual MRT = MRS conditions when workers have occupation, employer, and technique preferences would yield similar results for similar reasons. The MRS = MRT conditions do not characterize pareto optima. To suppose that they do is to assume that worker preferences do not count.
The production possibility frontier, so favored in the presentation of the "principles" of economics, is irrelevant and obscurantist in this model, but illustrative of why the traditional marginal analysis of efficiency goes awry when worker satisfaction is assumed away. For workers, movements in the output space in which production possibility frontiers are drawn involve occupational, employer, and technique changes, none of which is welfare neutral. Nothing can be said, a priori, about the welfare effects of movements either toward or away from such a frontier. Contrary to the use made of it in textbooks, it is heuristically useless.

Only in the Edgeworth Bowley box model are all of the textbook "marginal conditions", including those related to the production possibility frontier, valid, for only in such a model are worker preferences irrelevant to individual choice and welfare.

IV Conclusion

There is an interesting connection between this analysis and Bukharin's (1914) critique of early Neoclassical doctrine. While in exile from Czarist Russia, Bukharin attended lectures by Bohm-Bawerk and composed a critique that he entitled The Economic Theory of the Leisure Class. He argued that the Neoclassical analysis embodied the values of a "leisure class," whose satisfaction derived from consumption, independently of the conditions of production. One of the genuine advances of the New
Welfare Economics was its requirement that the values of the theorist be clearly specified prior to and as a basis for the welfare conclusions to be drawn. The values of the theorist are expressed in the functional form and arguments of the assumed individual utility functions and in the underlying social welfare function. As implied above, when utility functions are specified such that only consumption influences satisfaction and that worker preferences count for nothing, as they are for Bukharin's "Leisure Class," then and only then can all of the traditional marginal conditions be maintained. The textbook set of marginal conditions might well, therefore, be called "the welfare economics of the leisure class," because from the point of view of a class that does no work they are descriptions of an optimum. When the satisfaction to be derived from working is brought to a par with the satisfaction to be derived from consumption the marginal conditions vanish.
NOTES

1 I use Bator's (1957) well-known terminology throughout this paper to describe the marginal conditions characterizing pareto optima.

2 This essay, the core of which was worked out in the early 1970s, covers much of the same ground as a paper by Pagano (1983; see also Pagano, 1985). The main difference between this paper and Pagano's is that it uses a simpler and more familiar model and has a narrower focus: the relevance of the canonical marginal conditions of the "New Welfare Economics."

3 Note that this specification of the utility function implies that labor service inputs affect preferences among commodities. In this sense "consumer goods preferences" are endogenous. Marginal rates of substitution between goods, like beer and classical music, depend upon work performed and the circumstances within which work is performed.

4 This notation is cumbersome, but the model is simple and the points at issue are fundamental if individual choice and welfare are considered to be related not just to the level of consumption but also to the conditions in which goods are produced. There is nothing eccentric, counter-intuitive, or
obscure about this. It does not seem legitimate to defend ordinary Neoclassical welfare economics because it is more tractable. Nothing is gained when fundamental issues are obscured for the sake of tractability.
REFERENCES


