in the determination of prices. An alternative to the neo-classical formulation, which is consistent with the essence of Marxian theory and the recognition of choice, is the conception of mark-up pricing. Firms set prices by marking up over prime costs to the extent that their market power over consumers and over competing firms allows, and adjust their output to the level of consumer demand. Real wages are determined through wage bargains and the pricing of consumer goods, and hence are affected by the relative market power of capitalists and workers, as well as by the degree of capitalist price competition.

Further, rejecting the labor theory of value does not mean, as the commentators imply, that one must reject the concept of a working class as divorced from the means of production; "homogeneity of workers with respect to the means of production" is preserved without the labor theory of value. Going beyond the labor theory does however allow Marxists to better understand the staunch support of the U.S. working class for capitalism, especially for the economic freedoms it allows them.

Julie Mathieu
Wellesley College, Wellesley, Massachusetts 02181

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"Temporary General Equilibrium Theory", by Jean-Michel Grandmont
A Review Essay
Harvey Gram

Neo-classical theorists continue to search for an intellectually satisfying explanation of persistent unemployment—an explanation not inconsistent with the concepts of supply and demand equilibrium and efficient allocation characteristic of Walrasian general equilibrium. In pursuing this will of the wise, theoretical problems arise which are not motivated by any particular concern for the political economy of macroeconomic policy-making. Rather, these problems are internal to models which deny the completeness of markets and/or the flexibility of prices within the Walrasian framework, a framework which is taken as the self-evident starting point for any rigorous theoretical investigation into Keynesian problems. It is not an exaggeration to say that the theory of general equilibrium is regarded by the majority of economists as a sort of headquarters—an incorruptible citadel of proven results in relationship to which all new propositions must ultimately bear a logical consistency. This methodological position tends to create an intellectual environment in which problems are well-defined only insofar as they are expressed in such a way as to give full recognition to the sanctity of established neoclassical theory. Stating problems in such a way as to deny the central importance of the concept of efficient equilibrium is to invite blank misunderstanding and to be suspected of ideological bias.

Developments in the theory of temporary general equilibrium illustrate how the terrain over which neo-classical theorists feel confident in making authoritative statements has been extended. In a recent survey, Grandmont (1982) divides the subject into two parts: temporary competitive-general equilibrium and temporary equilibrium with quantity rationing. Unemployment does not arise in the first class of models; yet they reveal some fascinating aspects of the recent efforts to provide new mathematical foundations for ideas originally propounded by Hicks (1946). The initial attractiveness of the models, despite the typical assumption that endowments of perishable goods are parametric in each period (which is to say that the process of production is ignored), is that plans, which are sets of contingent future actions, need not be mutually consistent even though, when the future becomes present, the actions taken are market-clearing. This goes hand in hand with the incompleteness of markets. For-

*Department of Economics, Queens College, Flushing, New York 11367. Grandmont's paper is in Arrow and Intriligator (1982).
ward contracts—promises to deliver or receive specified quantities of goods depending on future market-clearing prices—are entered into, but the prices are not known until the future arrives.

The main theoretical problem which arises in the effort to establish the existence of a sequence of supply and demand equilibria concerns the belief that unlimited profitable arbitrage is possible. There must be a sufficient fear of loss to prevent such bets against the future, and, indeed, the main theoretical result of this literature appears to be that "a necessary and sufficient condition for the existence of [a sequence of temporary equilibria] is the occurrence of some agreement among agents about future spot prices" (Grandmont, 1983, p. 893). The probability of bankruptcy remains, however, if pre-existing debts are taken into account or if the penalty for going bankrupt is low. It is remarkable that the mathematical argument points to a problem which raises questions about the relevant institutional context (what are the non-economic penalties associated with bankruptcy?) and the structure of markets (unlimited forward positions at given prices would not possible under imperfect competition). It is even more remarkable that the theoretical solution, dictated by the requirements of equilibrium, suggests arbitrarily postulating sufficient agreement among traders as to the future state of markets without inquiring into the political and institutional arrangements which might be conducive to such agreement.

Theoretical difficulties associated with differing views about the future multiply prodigiously when production and hence firms are introduced. The reason is that, in order to sustain the overall conception of a supply and demand equilibrium, the differing expectations of the owners of the assets and liabilities of firms concerning future distributions of profits must somehow be made compatible with sequential market clearing. The problem is so difficult that some theorists have chosen to treat the firms as having objectives distinct from its stockholders. Such an apparently reasonable procedure is "obviously unsatisfactory" (Grandmont, 1982, p. 803) since it introduces an ad hoc element into the underlying conception of a Walrasian equilibrium in which consumers supply-resource owners are the only legitimate decision makers. There is almost a touch of conceit in references to work along these lines.

A similar attitude has been taken toward macro-economists. They are sometimes adored for their adventurous spirit, which has led them away from the calm of established theories into the jungle of actual events, but it is clear that the belief can be hoped for is that these young explorers (few of whom are young anymore) will return with a roughly formulated argument which will eventually yield to the rigorous standards of the master craftsmen, changing its very nature should that prove necessary. Thus, in speaking of temporary equilibrium with quantity rationing, Grandmont observed that these new models yield "a sound microeconomic basis for the analysis of phenomena such as unemployment which were studied traditionally mainly by macroeconomists" (Grandmont, 1982, p. 904).

The popularity of models of temporary equilibrium with quantity rationing is to some extent a consequence of the assumption that quantities rather than prices (which are fixed) do the adjusting within each period.

The short side of each market prevails in the short run. This leaves open the question as to how prices change between periods, and so the assumption of rigid prices is offered with apologies. Still, the arguments are regarded as a major theoretical advance because of the seemingly coherent taxonomy of cases which this approach yields. Both Millanvad (1977, 1980) and Grandmont (1982), for example, present small-dimensional quantity rationing models which are capable of displaying various regimes. At the center (literally, in certain diagrams with, say, the real wage on one axis and the real money supply on the other), is a position of full employment Walrasian general equilibrium. Arranged around this point are positions of Keynesian unemployment, classical unemployment, and repressed inflation. The various peculiarities are thus defined in terms of the central position. Grandmont's discussion of a model inspired by Bennassy (1979) provides an illustration.

Initial money stocks, money wage income, and the full distribution of money profits are offered by an aggregated household to an aggregated firm in exchange for current output of a single good. The household also offers its fixed labor supply to the firm, whatever the wage may be. The firm supplies output and demands labor, maximizing profits (which are instantaneously distributed to the household) at the given real wage. Disintermediate returns to labor are assumed along a well-behaved production function (presumably because of some fixed input, although capital is not mentioned). The government's demand, G, is exogenous (but less than full) employment output multiplied by the share of household expenditure devoted to the purchase of money) and is paid for with an increase in the supply of money. It is then shown that there exists an initial real wage and an initial real money supply at which profits are a maximum at the full employment level of output, and full employment output net of government demand is just equal to household demand. The change in the supply of money occurs at the end of each period even though the government is always served first. The length of the period is not specified or related to any aspect of the model other than the lag between prices changes.

Keynesian unemployment is said to occur in this model when the real money supply and the real wage are too low. Firms cannot sell more than a certain output and so households cannot sell more than a certain amount of labor (which is to say that firms never have unsold goods). Higher government demand would help as would a lower price of goods which would entail a higher purchasing power of money and a higher real wage (close to the existing marginal product of labor). Effective demand would be higher and overall demand and employment would be higher. The firm is evidently off its demand curve for labor, but on its production function—its sales constrained; the household is off the (vertical) supply curve of labor—it, too, is sales constrained.

Alternatively, the real wage may be too high in the sense that it exceeds the full employment marginal product of labor, but not so high as to reduce output below G since this would make consumption negative. (The real wage also exceeds the marginal product of labor that would prevail if output were equal to what the household and the government want to buy at the correspondence level of income, given initial real money balances.) In this case the household is constrained in what it can buy (G coming off the
top), and in what it can sell (the firm wants only enough labor to bring the marginal product of labor into line with the high real wage). The firm is not constrained since it is on its production function and on its demand curve for labor. This situation is described as a classical unemployment equilibrium, the solution to which entails a lower real wage. If the money wage were lower (the price of output held constant), employment, output, and income would be higher. If the price level were higher (the money wage held constant) the same would be true and, in addition, the real value of the stock of money would be lower thereby reducing real purchasing power to that extent.

Finally, there is a third regime which Grandmont calls a repressed inflation equilibrium. The firm is on its production function but, as in a Keynesian unemployment equilibrium, it is off its demand curve for labor although now it is on the other side. The real wage is lower than its Walrasian general equilibrium value and the firm is constrained by the fixed supply of labor employing a smaller amount of labor than that which would maximize profits. At the same time, the real value of the stock of money is higher than its Walrasian general equilibrium value so that aggregate demand at full employment exceeds aggregate supply. This tends to push the somewhat higher price of output (i.e., a higher real wage) would be associated with a lower demand for labor and for output.

In the model in which these arguments are displayed, there are three things to be exchanged: money, goods, and labor; but there are only two markets because government spending is given and the government is served first (all rationing models require a rationing scheme) so that the household (receiving all wages and profits, by assumption) has no choice about getting the extra money. Thus, there are four logical possibilities: excess supply of goods and labor (Keynesian unemployment equilibrium); excess supply of labor and excess demand for goods (classical unemployment equilibrium); excess demand for goods and labor (repressed inflation equilibrium); and excess supply of goods and labor (Keynesian unemployment equilibrium). In that discussion it is assumed that firms carry no stocks. It is interesting that this last case is left out since it would be in the uncharted territory of temporary unemployment equilibrium. The question of the treatment of the investment behavior of firms in the three cases considered, rationing arises because the short side of the market prevails. A rationing scheme is necessary to determine who gets served and/or to what extent demands are met.

The recognized weaknesses of temporary equilibrium with quantity rationing fall into three categories. (1) Since offers to trade are not necessarily implemented the rationing scheme. If a person determines what traders actually buy or sell, may well affect the original offers. If, say, a larger demand results in a quantity received closer to demand, the rationing scheme is said to be manipulable, and so the question arises as to the rationality of the original level of effective demand. If the scheme is non-manipulable, the final allocation is independent of the level of effective demand which therefore remains unexplained. (2) The different regime models, such as the one we have summarized, appear to yield policy implications which are not robust. In the above discussion, a higher money wage in the Keynesian regime is not associated with higher output and employment because profits are, in any case, instantaneously distributed; in Malinvaud (1957, 1980), who uses a similar formulation, a higher money wage would be associated with higher demand, but other specifications of his model apparently lead to the reverse result (Grandmont, 1982, p. 915). (3) There is no adequate theory of how prices adjust in rationed markets at the end of each period.

Which of these natters is crucial? The first raises gase theoretic problems and the whole question of the institutional context of the argument. Rather than using the theory to reveal the nature of the problem, the temptation is to adopt a rationing scheme that allows one to proceed with the analysis. Secondly, the lack of robustness of results of policy changes simply indicates a taxonomy of cases and, barring the help of some facts, a lot of empty boxes. It is the third weakness which is seen as crucial. It is not a new problem for there has never been a satisfactory theory of price formation to lend credence to the invisible hand metaphor. One might well conclude, therefore, that for now, at least, the temporary equilibrium approach, insofar as it is intended to provide an explanation of unemployment has led precisely to the point from which it started, it is the in flexibility of prices which creates the most serious analytical problems for supply and demand theories. Without a theory of price formation, the whole concept of markets as a mechanism through which allocation and distribution are affected reduces to meaningless incantation.

It is time to shrug off the straight jacket of pretentious models which aim for completeness on their own terms in order to generate any given phenomenon as the outcome of ultimately coordinated rational behavior. Models are needed which are capable of generating questions about political economy rather than simply providing descriptions of equilibrium. A prising first step is to separate the theory of value and distribution from the theory of output as argued most forcefully by Estelle and Milgate (1983). Sraffa's theory of prices, building on the Classical tradition, is independent of the supply of output and bears no connection to the theory of quantity and demand equilibrium. And, it has the enormous advantage of giving clear expression to the characteristic feature of competitive capitalism: the tendency towards equalization of the rate of profit via adjustment in the structure of the stock of produced means of production. It is, of course, well known that the consequences of this process for prices of production is to destroy the basis for the old idea of an inverse relation between the rate of profit and the value of capital per unit of employment. This means then, that it is not a real wage rate, profit rate, and corresponding technique of production (for any given level of output one may want to consider) which employs the whole labor force. Assuming the appropriate amount and form of substitution among inputs and imposing some condition on returns to scale in order to show that a full employment equilibrium exists at some real wage should hardly count as progress toward an understanding of the problem of persistent unemployment.

The significance of the capital theory controversy for the theory of output as a whole is that it provides a solid theoretical reason for abandoning the fetish of a full employment equilibrium price vector. Testing arguments concerning price rigidities and other imperfections in the allocations of markets can then be removed from center stage, opening up new eve
nuus of research. Certainly, the theory of long run normal prices should be enriched by allowing for imperfect competition and non-uniform rates of profit. In any case, it is but one element of a general theory which requires a theory of distribution and a theory of output and a theory of technological progress while at the same time leaving open the manner in which these complementary parts should be formulated. It is strange that the theorists who are most critical of this effort to revive the tradition of the Classical economists are sometimes the same ones who are quickest to point to the nihilism one faces at almost every new baroque variation on the general equilibrium theme (Hahn, 1973, 1982).

References.


March 18, 1986

Dear Colleague,

The amendments to the Association's by-laws, which the membership recently approved, direct the Editor, subject to the approval of the Executive Board, to appoint a nine-person working Editorial Committee. This Committee, which was previously elected, and had no specific responsibility for reviewing, now reviews manuscript submissions and makes recommendations concerning revisions and publishability to Authors and the Editor.

There are now three vacancies on the Editorial Committee to be filled by appointment for the period through calendar 1987, which coincides with my present term as editor. Besides their reviewing responsibilities, Committee members will meet with the Editor and the Executive Board during the association's annual convention. They will also be consulted by the Editor on matters relating to the association's Journal.

Your interest in serving as an Editorial Committee member is most welcome. Please write to me by May 15, 1986, enclosing all pertinent information.

Cordially,

Ingrid Rina