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## *Ad Hoc* Theorizing about Non-clearing Markets: A Rocky Road

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[M]ost of the debate around the legitimacy of Keynes' notion of 'underemployment equilibrium' was misplaced. It is the notion of a 'full employment equilibrium' which is an artificial creation, the consequence of the artificial assumption of constant returns to scale in all industries and over the whole range of outputs which implies infinite divisibility of everything. ... [M]ost of the voluminous literature concerning the reconciliation of Keynesian analysis with Walrasian general equilibrium – in terms of 'disequilibrium' economics, inverted velocities of price and quantity adjustments, absence of the 'heavenly auctioneer', etc. – is beside the point. The two kinds of theory cannot be reconciled, simply because one concerns a purely artificial world of perfect competition, etc., whilst the other attempts to generalise about the real world.

Nicholas Kaldor [1983, p. 13]

Keynesian economics used to be the mainstream. Now, the younger generation of macrotheorists and econometricians regard it just as a backwater, look to Monetarism for navigable channels, and find their real white water thrills in the technically demanding rapids of Rational Expectations. This ageing Keynesian thinks the main channel is still where it used to be. But it obviously has silted up, is full of accumulated debris, and must be thoroughly dredged and cleared, before one can hope that it will see much traffic again.

Axel Leijonhufvud [1983, p. 201]

There is an extensive literature about models that explain 'persistent unemployment' in the sense common to Keynesian macroeconomic models. The object of most of these disequilibrium models is to explain how persistent unemployment is possible whenever everyone is assumed to be an optimizer. Persistent unemployment is, of course, just one example of a non-clearing market. Traditionally, the persistence of the unemployment is explained as being the result of 'wage rigidities' but there is seldom any reason given for why the price of labor is not flexible [see Drazen, 1980].

Neoclassical macrotheorists cannot accept explanations of unemployment involving exogenously fixed prices since a fixed price violate, methodological individualism. Furthermore, even some Keynesians do not accept such a definition of Keynesian economics. There is no necessary reason to think that Keynes was arguing in favor of a fixed-price explanation of unemployment – all that might be required is that the wage-rate's speed of adjustment cannot be as fast as that of the prices of final goods. Nevertheless, one can readily understand the neoclassical rejection of Keynesian macroeconomic models whenever the existence of a fixed price is used to distinguish Keynesian from neoclassical models.

Our concern in this chapter will not be limited to the question of persistent unemployment. We wish to consider the explanation of a disequilibrium in which the usual calculus properties of an equilibrium (which we discussed in Ch. 3) are not appropriate. We will also look at an alternative view of Keynes' so-called macroeconomics to see whether he may have already introduced the means by which the methodological limitations of neoclassical economics can be avoided.

### 1. Exogenously Unintentional Disequilibria

The first question that must be addressed is whether any acceptable neoclassical model could ever explain the persistence of a disequilibrium. Of course, it is easy enough to explain away the appearance of disequilibrium. We could just say that it is only a temporary phenomenon which disappears once we broaden our perspective by asking whether the disequilibrium would persist in any long-run situation. This merely avoids the challenge and so we will ignore such a tactic. For the same reason, we want also to avoid the tactic of claiming that any observed unemployment is really voluntary. The task at hand is to consider how a state of disequilibrium such as 'involuntary unemployment' could persist for a significant amount of time and could still be explainable in terms consistent with methodological individualism.

The usual reason given for any market's failure to clear is that the

price is being held rigid or that it does not change fast enough. Such an explanation will only beg the question of why the price is rigid or inflexible. So, when the disequilibrium theorist turns to explain why prices are rigid, what are the usual exogenous variables? Will they violate methodological individualism? When it is thought that we must explain the adjustment of prices by introducing the appropriate implications of imperfect competition models, we beg the question about why there is a barrier to entry into the industry. One might wish to explain the choice of market structure so as to render it endogenous [e.g. Coase, 1937; Williamson, 1967; see Loasby, 1976]. But, what new exogenous variables are introduced in this step? Usually, it is some sort of exogenous transactions cost schedule. This begs the question of what exogenous variables determine the transactions cost. If the transactions cost is in any way influenced by prices, the explanation becomes circular or at best incomplete.

No matter which variable is declared to be exogenous to explain why the prices fail to adjust fast enough, all that is usually created is a model with a so-called 'temporary equilibrium' which merely plays the same role as Marshall's short-run equilibrium. In a temporary equilibrium either the price or the quantity is held fixed while the other variable is allowed to be the only means of adjustment. The question for models of this type is whether it makes sense at all to discuss equilibria when one is trying to explain disequilibria. This question arises for those models which try to base the rigidity of the price on an imperfectly competitive market structure. Presuming imperfect competition to explain the existence of a non-cleared market is a mixed blessing. Under certain interpretations (see Ch. 2), the explanation merely presumes another type of equilibrium, and thereby precludes the possibility of disequilibrium. Under other interpretations, such as comparisons with ideal states of perfect competition, the explanation of rigidity implies some sort of sub-optimality and hence that at least one market is not in equilibrium. While imperfectly competitive equilibrium models may imply a certain kind of disequilibrium, in the sense that there is an equilibrium amount of excess capacity, they are employing a static equilibrium to explain a dynamic disequilibrium. And, as already mentioned, there is still a question of why there should be such a market structure.

The primary reason why many theorists turn to imperfectly competitive situations to explain either price dynamics or a non-clearing market is that, as Arrow recognized [1959, p. 44] and we explained in Chapter 9, the knowledge requirements for an imperfectly competitive equilibrium are always much more demanding than those of a perfectly competitive equilibrium with equilibrium-price takers. The firm which is not a price-taker must also know the whole demand curve it faces.

Knowing the whole demand curve before putting one's product on the market necessitates knowledge of what every consumer is going to demand at every conceivable price. Is this knowledge acquired inductively? Obviously, knowledge of the whole demand curve requires too much for any realistic imperfectly competitive equilibrium, but that is all right since, for many theorists, it seems to provide an essential reason for why, at any one point in time, there might be a disequilibrium [e.g. Fisher, 1983, p. 190]. Any disequilibrium is easily explainable as the failures of demanders or suppliers to optimize due to misperceptions of the relevant constraints.

## 2. Deliberate Disequilibria: Keynes-Hicks Generalized Liquidity

In neoclassical theory any disequilibrium always implies that someone is failing to maximize short-run utility or profit. For the labor market, an unemployment equilibrium means that some workers are capable of providing more labor than is demanded. Excess demand for labor would mean that some firms are using less labor than they desire and thereby are producing less than their capabilities. In a market for a good, a disequilibrium means either some consumers are being forced (because of excess demand) to purchase inside their budget-defined affordable set or that some suppliers are producing at a level that represents an excess of productive capacity. In other words, a disequilibrium failure to meet one's objective in the market is always seen as one of being somehow forced to choose a point that is not optimum because it is not on the boundary of one's capabilities. Is the reverse true? That is, whenever we see people operating inside their capabilities, must this be evidence of a disequilibrium?

Why should we think that the individuals who are not operating on the boundaries of their capabilities are actually failing? This is a question which is inherent in Keynes' assault on what we now call neoclassical economics. It is a question which puts all the concern over disequilibrium model-building into an entirely different light. According to Keynes:

I doubt if many modern economists really accept Say's Law that supply creates its own demand. But they have not been aware that they were tacitly assuming it. Thus the psychological law underlying the Multiplier has escaped notice. It has not been observed that the amount of consumption-goods which it pays entrepreneurs to produce is a function of the amount of investment-goods which it pays them to produce. The explanation is to be found, I suppose, in the tacit assumption that

every individual spends the whole of his income either on consumption or on buying, directly or indirectly, newly produced capital goods. But, here again, whilst the older economists expressly believed this, I doubt if many contemporary economists really do believe it. They have discarded these older ideas without becoming aware of the consequences.

[Keynes, 1937, p. 223]

Let us now examine the consequences that Keynes had in mind. What is still not appreciated is the contradiction between what Keynes called the ‘psychological law underlying the Multiplier’ and the neoclassical method of explaining the consumer. The ‘psychological law’ he is referring to here is simply the idea of an exogenously given marginal propensity to consume. As we learn in any elementary macroeconomics course, we are to assume that an individual never spends all of an extra dollar of income earned but just some fraction of it. That Keynes would take this ‘law’ as a psychological given might cause some concern, as it is not directly related to the microeconomics textbook idea of a utility maximizing consumer facing a given income or budget. The microeconomics textbook consumer is thought to spend all of his or her budget. If the consumer’s income increases, planned purchases will be expanded to fully spend the extra income so as to be on the boundary of the consumer’s capabilities, that is, to be operating on the boundary of his or her income constraint. This does not seem to be the case for Keynes’ psychological law as expressed in even a simple Keynesian macroeconomic model such as the following:

$$Y_d = C + I \quad [10.1]$$

$$C = a + bY_s \quad [10.2]$$

$$Y_d = Y_s \quad [10.3]$$

where  $Y_d$  is the demand for aggregate output,  $Y_s$  is the income paid out to those who produced it,  $C$  is the demand for consumption goods and  $I$  is the exogenous demand for investment goods. Equation [10.2] is Keynes’ psychological law, where it is assumed that  $b$  is a positive fraction less than one. While this assumption is required for stability (as is the requirement that  $a$  be positive), for Keynes it is a psychological given. If we want to know the effect a marginal change in the one exogenous variable,  $I$ , would have on the equilibrium solution, we would calculate the equilibrium aggregate output ( $Y$ ) and then calculate  $dY/dI$ . This derivative is the investment multiplier and is determined as follows:

$$dY/dI = 1/(1 - b). \quad [10.4]$$

We see immediately that his psychological law ( $0 < b < 1$ ) is essential if we are to have an investment multiplier greater than one, as well as ensure that an equilibrium  $Y$  exists. What is important for us to recognize here is that his ‘law’ requires all individuals to be operating inside their income constraints.

We have carefully glossed over any distinction here between micro- and macroeconomic definitions of the variables in this simple macroeconomic model. Of course, the variables are all aggregates, except for the psychologically given one, namely, the marginal propensity to consume,  $b$ . It does not matter whether all individuals have the same  $b$  so long as Keynes’ psychological law is true. Whenever individuals differ regarding their personal marginal propensities to consume, the  $b$  in equations [10.2] and [10.4] is merely the average for all consumers.

What is important to remember here is that neoclassical equilibrium methods of explanation always see all individuals operating on the boundaries of their capabilities which implies  $a = 0$  and  $b = 1$ . But, according to Keynes, it is important to recognize that individuals do not operate on the boundary of their individual capabilities. One could successfully operate on one’s boundary only if one was absolutely certain about the future. Given any uncertainty, it might be wise to leave a little room for error or for the unexpected. Many people save for this very reason and not just to earn interest on their savings since this reason is another form of optimization. Of course, saving is ‘not-consuming’ hence, Keynes claims, any psychological need to save yields a  $b$  less than one.

For the most part, Keynes’ famous book [1936] is about this contradiction’s consequences for those economists who wish to continue using the Marshallian-type neoclassical methods of explanation. Despite what he said in his 1937 article, most students are taught that the significant aspect of his book is his emphasis on ‘expectations’ or on ‘liquidity’. Unfortunately, most students are taught that Keynes’ ‘liquidity’ was only important for his considerations of monetary policy effectiveness. This misses the major point of his criticism of neoclassical economics. The essential importance of ‘liquidity’ is that it represents a deliberate choice to be inside the boundary of one’s capabilities and thus represents a direct conflict with neoclassical methodology at a fundamental level.

This aspect of the idea of liquidity is not easy to see in Keynes’ book because he presents it primarily in terms of financial liquidity. Of course, financial liquidity is closely related to the question of investment

that concerned Keynes. What we need is to see how important the concept of liquidity is for understanding what Keynes meant by ‘the consequences’. But to do this we need a more general concept. John Hicks [1979] provides such a general view:

Liquidity is freedom. When a firm takes action that diminishes its liquidity, it diminishes its freedom; for it exposes itself to the risk that it will have diminished, or retarded, its ability to respond to future opportunities. This applies both within the financial sphere and outside. I have myself become convinced that it is outside the financial sphere (very inadequately considered, in relation to liquidity, by Keynes) that liquidity is potentially of the greater importance. ... Liquidity preference, for the financial firm, is a matter of marginal adjustments, as Keynes very rightly saw. But the liquidity problem of the non-financial firm is not, as a rule, a matter of marginal adjustments.

[Hicks, 1979, pp. 94–5]

Hicks is arguing that in a Marshallian world of comparative statics where there is always enough time to make marginal adjustments, there is no need for liquidity. In the real world where many things are happening simultaneously, the Marshallian method of explanation is usually misleading. The keystone of Hicks’ argument is the idea that every decision maker forms a ‘plan’ based on the perceived givens, constraints and prices. If every decision takes time to execute, the passage of time means that the original givens might have changed, or may even have been wrongly perceived. This is the same idea we discussed concerning what we called Hayek’s contingent equilibria (Ch. 6). By the time the decision plan is executed the resulting decision may not be optimal.

For example, car manufacturers might think that the future will always favor large fuel-inefficient personal automobiles. If they also think there is an unlimited amount of fuel, their optimal plan might be to specialize in the production and marketing of such autos. If, for any reason, the market should abruptly shift in favor of small fuel-efficient autos, or if the supply of inexpensive fuel disappears, the manufacturers’ profit potential will be drastically altered. This example might be too dramatic for ordinary decision-making, but the same possibility would exist where a specific size of a market is anticipated by one firm, but where subsequently there is a sudden increase in its demand due to a strike or fire at a competing firm. In either case, if the previous level of planned output was the one corresponding to the usual neoclassical or Marshallian long-run equilibrium (i.e. the output was set to where price equals average

costs), there is no extra capacity since it is not needed. Here, the firm would not be able to respond competitively to the new market potential by increasing output (even though the price may have risen above average cost). It could respond only if the firm were not actually producing on the boundary of its production capabilities, but this is contrary to the requirements of a long-run equilibrium. An increase in capacity would take time but, as always, even if the firm immediately invests to increase capacity, by the time the higher capacity is realized it might not be the optimum. The conditions that prompted the capacity increase, such as the strike or the fuel shortage, may be over. It would seem that zero excess capacity – that is, the absence of any liquidity in the non-financial sense – would be sub-optimal. However, in a changing world, a true optimum with respect to excess capacity or liquidity may not be knowable by the firm because its calculation depends on the unknown contemporaneous happenings and decisions of other people. Calculations are made even more difficult whenever their optimality depends on the unknowable future.

What is being argued here is that liquidity is a deliberate choice variable and that, from Keynes’ viewpoint [1937], such liquidity is simply good business practice (as illustrated in our examples). It is not, however, just a matter of investment. Whenever the labor market is not clearing because the current real wage is above the one which would clear the market, there is excess supply and thus by neoclassical standards, we would have a sub-optimal disequilibrium. But, from this Keynes-Hicks viewpoint, such excess supply may very well represent a desirable state for the employer. For some firms the ability to expand production immediately whenever necessary is a desirable position. This may also be true for the employee. A thirty-five hour work week can be an optimum for an individual, even though he or she is capable of being satisfied working a fifty hour week at the going wage-rate. Leaving a little free time for picking up emergency money when it is needed may be more desirable than signing a contract to work to one’s limits.

We do not want to restrict these considerations to just the questions of static capabilities. It may be desirable to have the ability to choose one’s speed of adjustment to changing conditions. Sometimes, a fast response is more appropriate than a slow response and at other times it is the reverse. Flexibility is the key idea here. But is flexibility a variable that can be chosen in the same way one would choose a quantity of food or a quantity of capital required to achieve the current objective? Both Keynes and Hicks seem to be arguing that one’s choice of liquidity, be it financial as Keynes discussed or non-financial as Hicks noted, is not a variable that is amenable to Marshallian optimization analysis. The type of flexibility or liquidity that is appropriate for any conceivable situation

always depends on the value of variables that cannot easily be determined. However, knowledge of the variables affecting the choice of an optimum plan would be essential for the usual neoclassical explanation even when those variables are thought to be merely stochastic distributions.

The point to stress here is that a consideration of a choice variable like the Keynes-Hicks concept of general liquidity may immediately explain the existence of a persistent excess-supply disequilibrium. For such an explanation we must continue to define the supply curve as that indicating the supply that would be chosen according to a neoclassical optimization explanation. If the firm were producing to its full capacity as might be required by a maximization process, the supply would be greater than what is supplied when a provision is made for a certain margin of liquidity. This viewpoint, of course, merely raises the question of whether there is an optimum amount of liquidity. If such an amount of liquidity could be defined, liquidity would be just another choice variable like capital itself; and so there would be no persistent excess supply since the amount supplied was the optimum output.

Liquidity is not usually considered in a typical neoclassical theory of the firm or individual. To appreciate the significance of stressing the desirability of liquidity we need to see why it is not part of the usual neoclassical model. Consider Figure 10.1 which merely represents the production function for good  $Y$  using the available input  $X$ . What the production function really shows is the *physical maximum* amount of  $Y$  that can be produced, that is, it shows the productive capabilities [see Samuelson, 1947/65, p. 57]. The production function is the boundary of productive capabilities. But, it is the shape of this boundary (i.e. its slope) that is used to determine the optimum combination of input and output levels. The usual textbook assumes that the firm chooses the combination which maximizes the net difference between revenue and cost for the given prices. The cost here is the sum of the fixed cost,  $A$ , and the quantity of input measured in terms of the output (i.e. multiplying the input by its price and dividing by the price of the produced good). That is, the firm facing an output price  $P$  and input price  $W$  chooses the input-output combination where

$$dY/dX = W/P. \quad [10.5]$$

In Figure 10.1 the optimum point will thus occur in the usual way where the slope of the production function and the slope of the real-cost curve are equal. And this is the essential point of this elementary discussion. When the firm chooses to allow for some liquidity, it in effect chooses to be below the boundary formed by its production function (such as output level  $Y_0$  for input level  $X_0$ ). In doing so, we cannot use the slope of the

production function to explain the firm's choice of an input-output combination since we cannot be sure whether this is a decision to waste input ( $X_0 - X_1$ ) or to stay below the maximum output level,  $Y_{max}$ .

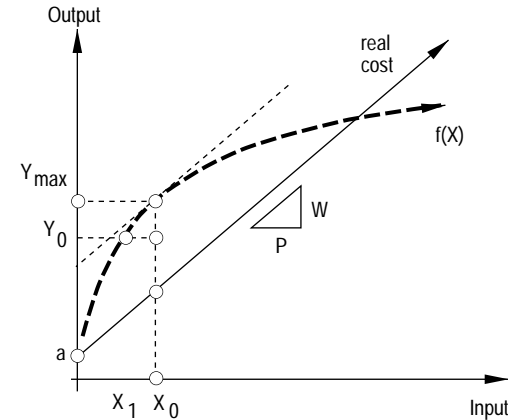


Figure 10.1. Optimal input-output

If prices and price changes are to matter, as the price system requires, it is essential for the neoclassical firm to be operating on the boundary of its capabilities such as  $Y_{max}$ . If either  $W$  or  $P$  change in our illustration there will be a predictable reaction along the boundary. While it is not shown in our illustration, being on the boundary is essential for all the arguments in favor of the ability of a competitive price system to produce a socially optimal allocation of resources in the long run. We can see that such optimality does require that inputs are not being wasted. Some might see that being on the boundary is a minimum requirement for efficient production.

The essential idea of a competitive market system is that everyone should use prices as appropriate information in making decisions about what to produce or buy. When the price of fuel-inefficient autos is falling relative to efficient autos, such a price reduction is important social information. If the firm responds to such a price reduction by reducing the output of inefficient autos, the firm is doing just what society wants. But what happens to the competitive market system when the firm is not operating on its capabilities boundary – that is, for example, when it is deliberately providing liquidity in the form of excess capacity? For one thing, equation [10.5] will not be satisfied and thus net revenue is not being maximized with respect to the available level of the input. Worse than this, the prices no longer act as appropriate information for other decision-makers. The competitive market system will not necessarily lead to the ‘best of all possible worlds’.

Despite what some critics of neoclassical economics might believe, the introduction of a variable representing liquidity or flexibility into an otherwise neoclassical model of the firm or household does not necessarily conflict with the assumption of optimization. When we say that the firm lacks sufficient information to calculate the optimum, we do not preclude the firm from inadvertently choosing the optimum amount and thereby inadvertently providing the equality of the marginal productivity of an input and its real price (i.e. equation [10.5]). Specifically, whenever the firm is allowing for liquidity, maximization cannot be logically precluded. Nevertheless, Keynes stressed the recognition of liquidity in decision plans which take time to be executed. There is no good reason for us to think that firms have consciously chosen the optimum amount of liquidity. Moreover, it is important to recognize that any claim that a firm is not optimizing does not deny a conscious attempt on the firm's part to choose an optimum amount of liquidity. But, of course, given any ignorance about the future it would be unlikely for the firm to be successful in such a choice.

Recognizing that ignorance of the future is likely, liquidity or flexibility is one means the firm can use to avoid the difficult task of calculating the optimum decision plan. Nevertheless, there still is the logical possibility that liquidity has been chosen optimally. However, there is one overwhelming exception – the idea of an optimal amount of liquidity is self-contradictory. If liquidity or flexibility could be chosen just as any other productive input, there would be no need for liquidity or flexibility [see further, Boland, 1983b]. So, it is quite possible that whenever we recognize a necessary role for liquidity, we thereby also recognize what amounts to a deliberately chosen disequilibrium relative to the equilibrium defined in the ordinary neoclassical explanation of demand or supply.

### 3. Methodological Individualism vs. Deliberate Disequilibria

An interesting dilemma faces anyone attempting to provide a methodological-individualist explanation of the persistence of a disequilibrium. Obviously, a disequilibrium can be considered either unintentional or intentional. The choice, however, is not arbitrary. When the disequilibrium is explained as an unintentional consequence of intervening exogenous variables, we have to explain them, if they are neither individualist nor natural givens. But, once we explain the exogenous variables, we have in effect explained the disequilibrium away. This, of course, is a violation of the original task which was to explain the persistence of the state of disequilibrium rather than explain

why it does not exist.

All things considered, it is doubtful whether there could ever be an acceptable neoclassical explanation of a persistent disequilibrium. Every neoclassical explanation must view the disequilibrium as being the consequence of the intentional acts of autonomous individuals. In this regard, the Keynes-Hicks concept of deliberate liquidity is a denial of deliberate short-run optimization but it would seem to hold more promise of an internally consistent explanation of disequilibria than would the neoclassical concept of deliberate maximization. And more important, the choice of liquidity instead of optimization is clearly an act of autonomous choice. By being inside one's limits, one is not forced to make choices that are uniquely defined by circumstances, as would seem to be the case in so many neoclassical models [see Latsis, 1972].

We are using the term 'autonomous' here because we wish to stress that the individual does not have to be identified with his or her psychological state, as is commonly done in neoclassical economics. But we also stress this because distinguishing between 'autonomous' choices and psychologically determined choices (e.g.  $0 < b < 1$ ) highlights an important aspect of Keynes' criticism of neoclassical equilibrium models. Like most neoclassical economists, Keynes obviously accepts psychologism – the identification of individuals with their psychological states. Nevertheless, the deliberate use of liquidity, whether it be in the form of excess capacity or the marginal propensity to consume a fraction of any extra dollar of income, still directly confronts the neoclassical presumption that individuals are optimizing and thus operating on the boundaries of their capabilities (i.e.  $b = 1$ ).

While any neoclassical explanation of disequilibria as intentional states of affairs is necessarily self-contradictory, such is not the case for the Keynes-Hicks explanation based on deliberate liquidity. But the question remains whether a Keynes-Hicks explanation can ever be both complete and consistent with the requirements of methodological individualism.