Resource Allocation and Entrepreneurship

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The critique developed in this paper involves the neglect of the entrepreneurship role in the theory of the resource allocation process of the economy. My critique is similar to and related to that advanced by Israel Kirzner in his book, Competition and Entrepreneurship (Chicago, 1974). It also has close affinities with the classic work of Joseph Schumpeter, whose book, Theory of Economic Development, was published in its first version as early as 1911.

I. An Elementary Statement of the Coase Theorem

Persons trade when the relative evaluations of the units traded differ. When trade ceases, the traded units are held by those persons who place relatively higher value on such units than other persons. When there are no impediments to trade, all valued units are allocated to their highest valued uses, with values being settled at the moment of trade.

The elementary statements made above can be interpreted as one version of the now-classic Coase Theorem on the allocation of resources. But, as stated here, the question immediately suggested is: Why would anyone have thought differently? We can, I think, point to some reasons for the modern oversight of the quite elementary propositions that the Coase Theorem embodies. If we look, not at the *trading process,* but at the results or end-states of trade, and, further, if we look at the characteristics of equilibrium end-states, and implicitly make the assumption that all traded items are divisible into small units, the elementary statements made above do not hold. In equilibrium, all persons place the *same* relative evaluation on any unit of any traded item or commodity. Conversely, separate units have the *same* value in each use. The possible differential evaluations placed on inframarginal units of potential use become irrelevant in equilibrium adjustment. The relative evaluations placed on the inframarginal units will, of course, determine where the margins are located; that is, the evaluations over the inframarginal ranges will determine the final allocation of the total stock of any given traded item among separate traders, or among all projected uses or employments. In the simplest of trading examples, that of two-person trade in two-goods (A and B trade apples and oranges), with given initial endowments, we cannot predict how many apples and how many oranges each person will have acquired when equilibrium is reached until and unless we know something about the evaluations over the inframarginal ranges of anticipated usage. We can say, however, that for the quantity of any item purchased in unimpeded trade, the purchaser will place a higher relative value on such quantity than anyone else. This statement holds even if, for a marginal unit (and any unit if marginal), relative valuations are identical as over all persons.

To this point, I have done nothing more than restate some of the most elementary principles of economics. I want, however, to use this restatement for a purpose. I want to examine some of the implications of the proposition that the stock of traded items is allocated among all potential purchasers or users so as to insure possession or ownership by those of the group who place the relatively highest value on all units of the stock. To my knowledge, the implications of this elementary proposition have not been fully explored.

II. The Allocation of Final Goods

Initially and by way of introduction, we may restrict analysis to trade in final goods, or consumption end-items. We can say, almost tautologically, that unimpeded trade will generate an allocation of a fixed stock of such a good among persons such that "utility", evaluated in some numeraire good, is higher than that achieved in any other

conceivable allocation. Since, however, "utility" is not interpersonally comparable, this statement really adds nothing at all to understanding. There is no way of getting at the question: Why does Mr. A value the bundle of oranges that he retains in full-trading equilibrium more than Mr. B? To answer such a question, we should have to get "inside" Mr. A's utility function itself, something that economists have been reluctant to attempt.

Until and unless we could begin to answer such questions, however, there is no predictive content in economic theory at this level. By our unwillingness and/or inability to measure "utility", we insure that there is no empirical, "objective" content in analysis. There is no way that the economist can lay down presumably objective conditions or standards, which might be empirically checked, in order to guarantee efficiency (highest value) in the use of a final good. By his own methodological constraints, the economist is forced to search for his efficiency criteria by an examination of the trading process rather than by any examination or testing of the end results. The economic theory of the exchange economy, with initial endowments of final goods, must be beyond the pale for "positive economics" in the modern sense.

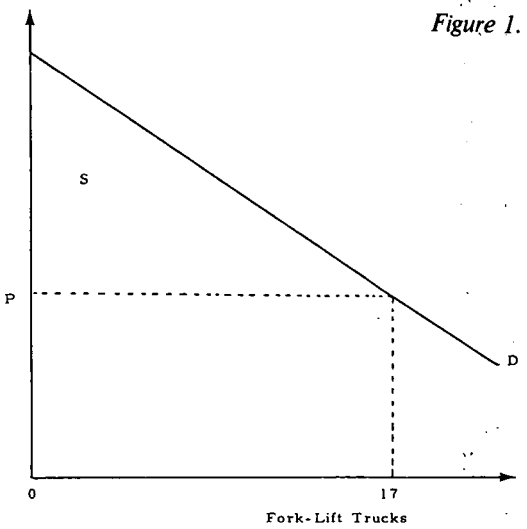
III. The Allocation of Intermediate Goods

The initial consideration of the proposition with respect to trade in final goods is useful for purposes of contrast and comparison with the implications for intermediate goods, those goods, resources, assets, or services that do not enter directly as end-items in the individual's utility function. These goods are traded, but they (or their services) are not consumed directly (transformed into utility). These goods are indirectly consumed via a productive process that involves their transformation into final goods and, through time, into "utility".

The characteristics of the trading process are unchanged. Such items or goods are allocated to their most highly valued uses to the extent that trade is unimpeded. But, if these items do not yield direct utility to their purchasers-users, why should they be valued *differently* by different persons? Complexities arise at this point if we remain within the certainty paradigm of much modern theory. If the "capacity to produce" is something inherent in a unit of intermediate good, and if this "capacity" is known with measurably objective certainty, and by all persons, it follows that all persons will value such a unit at precisely the *same* amount. In this case, we should observe no trade to take place. To rationalize or to "explain" trade in nonfinal or intermediate goods, therefore, we must introduce differences among potential traders in their subjective assessments of the potential "capacity" embodied in units of such goods. In general, a purchaser does not buy a fork-lift truck because he has a "taste" for this equipment. The prospective buyer must somehow think that a unit of an intermediate good or service has a higher capacity to produce final goods, and hence utility, in some ultimate sense, than does the person who might enter as a prospective seller on the other side of a trade.

Let me go through some elementary economics by way of getting to some of my main argument. Consider an example, that of a potential owner-operator of a warehouse, who enters the market for fork-lift trucks. In the familiar diagram of Figure 1, we can depict his "demand" for units of the good, and, given the fixed supply price, he will purchase, illustratively, seventeen units. This quantity will maximize the purchaser's rental value of the complementary resource inputs (labor, pallets, space), as shown by the "buyer's surplus" triangle, S. We can think of this same owner-operator as entering the market for each one of these complementary inputs, and we might depict his surplus-maximizing solution in the same manner as that shown for fork-lift trucks in Figure 1. We can model his decision process as one of simultaneous determination of the surplus-maximizing rates of purchase (or hire or lease) in all of the input markets.

Figure 1.



In full competitive equilibrium, the payment for all inputs will just equal revenues derived from the sale of the goods or services produced; there will be no economic profits. In his decisions, however, the owner-operator of the warehouse must seek, and he must expect to find, positive profits. He will try to maximize net surplus or net rents. If he has no anticipation of securing profits, over and beyond the required outlays on the resource inputs purchased, he will not, of course, organize production. That is, he will not "trade" with the suppliers of these inputs, since, by assumption, he has no "taste" for the inputs, as such.

IV. The Circulation or Evenly-Rotating Equilibrium in the Stationary Economy

I get confused, however, when I try to think out the full implications of this elementary account of the behavior of the entrepreneur in a competitive environment. In full competitive equilibrium, as noted, we cannot allow for returns to pure entrepreneurship over and beyond the opportunity costs of the resource inputs actually used. But does this fact alone not suggest that an equilibrium becomes *logically* impossible? There seems to be nothing in the system to "make the wheels go round," so to speak. Schumpeter speaks about the circular flow in full stationary equilibrium, where all economic agents find that their expectations are fulfilled, and where they repeat the same behavior period after period, given no change in the exogenous parameters of the system (wants, resources, technology).

I can model such a circular flow process, the evenly-rotating stationary state, under the assumptions of a pure exchange economy, in which each participant commences with an endowment of end-products, the same each period and received in some "manna-from-heaven" distribution. In such a setting, each person would repeat the same behavior in each period; he would trade the same units of his initial endowment for the more highly valued end-items in order to maximize his utility. Failure to behave in this fashion would mean lower utility attainment. The same prices will be reestablished in each period; the same final allocation of goods to persons will be consumed.

In a similar way, I have no difficulty with a production economy when each person is assumed to be endowed with a capacity to produce a single end-item, and where the use of this capacity is also an argument (a bad) in each person's utility funtion. Nor is there any difficulty in relaxing this restriction to allow that productive capacity may be used in producing several consumption goods, so long as we describe the utility function to include arguments for each use of the inputs. In both of these models of a production economy, the individual's utility maximization behavior will, just as in the pure exchange economy, lead to the same allocation of capacities in each period, the same set of prices, the same final allocation of consumption among persons.

The reason for the constant repetition of the equilibrium allocation, period after period, is found in the fact that each person, by behaving any differently, will be in a worse position. There must be differential advantages to be gained from behaving so as to generate the repeatable equilibrium solution, even if these advantages be infinitesmal at the appropriate behavioral margins.

Consider the case of a person who can produce either gidgets or widgets with his talents. Why would he spend two hours on gidgets and six on widgets each and every day? He would do so only because any different behavior would reduce his utility. Hence, producers' surplus serves the self-same allocation purpose as consumers' surplus in the allocation of final end-items.

As normally stated, however, producers' surplus, scarcity rents, profits, are not supposed present in the abstracted general equilibrium of the fully competitive economy. Owners of resource inputs are presumed to be confronted with alternative employments, each one of which yields the same return, and, further, these resource owners are presumed to be indifferent as among the separate potential uses. In such a setting, however, why will the equilibrium allocation be repeated period-by-period? Clearly, there is nothing unique in the solution if rents are wholly absent, even for a single, solitary unit of input.

I offer no answer to my own puzzle here. I leave this to the so-called "economic theorists", but you can see how this puzzle relates directly to my interest in entrepreneurship and its role in the allocative process. If rents or profits are allowed as possible, or even if they are only thought to be possible, entrepreneurial activity will "drive the system", and, of course, competitive entry will always put pressure on observed profits and rents such as to erode these. I ask only whether or not we have modelled an internally contradictory structure that leaves no room for producers' surplus, profits, or rents, and

whether or not such a modelling has inadvertently modified the mind-set of the economists who then come to think of idealized allocations without allocators.

Should we drop the very notion of general equilibrium, even as a logical construction, once we recognize the contradiction? Or should we try to reconstruct it so as to allow universalized producers' surplus? Note that if we allow entrepreneurs in the model, we do get a solution to the allocation problem, *ex ante*. All resource units flow necessarily to the most highly valued uses, as viewed by the entrepreneurs who implement and carry forward the input combinations and who organize production.

V. Optimistic Entrepreneurs

The potential producer, the entrepreneur, must be relatively "optimistic" about his ability to combine resources so as to achieve a positive rent or surplus. He places a higher expected value on the bundle of resource inputs that he decides to purchase than anyone else in the economy or trading network. What does this statement imply about realized values, about realized rents or surplus, realized profits? As noted above, at the moment of entrepreneurial choice, expected returns, expected profits, must be positive. In competitive equilibrium, however, profits will disappear. To the extent that unimpeded trade, including freedom of entry and exit into and from all markets, generates any adjustment toward equilibrium, even if such a state is never attained, realized rents will tend to fall below expected profits. From this it follows that the entrepreneurs, as a group, or in some representative sense, must be *disappointed*. This result must hold despite the possible presence of individual cases in which realized rents might exceed expected rents. Realized rents or profits may range the spectrum from higher-than-expected levels at the one extreme to large negative values at the other. Entrepreneurs in the first group, that is, those whose initial optimism pays off beyond expectations, need not be disappointed. But, by necessity, these entrepreneurs represent only the tail of the distribution that we may assume to be symmetric in some fashion.

The tendency of the market process to insure that resources come into the usage and ownership of those persons who are most optimistic about their productivity, who place the relatively highest value of these resources *ex ante,* is, at the same time, reflected in the mirror image of ubiquitous entrepreneurial disappointment. Plans are not realized, and, on average, rents fall short of those anticipated. The disappointment of entrepreneurs has several important implications. Because plans do not live up to expectations, entrepreneurs will be led to turn over assets, to modify their projects, to change their rates of purchase of resource units, more frequently than that rate that might be predicted under the standard assumptions that are imbedded in economic theory. Under the latter assumptions, error leading to negative profits may be made, leading to corrective adjustments on the part of entrepreneurs. When the generality of entrepreneurial disappointment is reckoned on, however, it becomes clear that entrepreneurs will tend to modify plans and to shift among separate projects even when realized profits may be positive, possibly strongly so.

For illustration, consider two separate projects undertaken by two separate entrepreneurs, projects that are not directly related, one to the other. Each of the two entrepreneurs expects to secure, say, $ 1000 in net profits when he makes the decision to organize production and proceeds to purchase the inputs required. (Note that we cannot define expected profits in terms of a "rate of return" on anything.) Both are typical or representative entrepreneurs, and, hence, are disappointed to find that realized profits or surplus amounts to only $ 500 in each, each still positive but not so high as anticipated. Each entrepreneur, viewing the alternative project to his own, may now consider switching his efforts, despite the presence of an observed profit level that is no greater than that realized. It is quite possible to get such a switching among projects without any change in the total of profits realized. This result could not emerge under the standard assumptions of economic theory, which would suggest, in this example, that both of the entrepreneurs would remain in production of the projects initially commenced.

This tendency to shift resource combinations, to change projects, will, of course, be dampened to the extent that specificity is a necessary component of project choice. If an entrepreneur, in organizing production for an initial project, finds it advantageous to convert transformable units of resources into forms that are specific to the project, the differential between realized quasi-rents and the scrap or disposal values of assets may seriously inhibit the switching of production or production technique.

VI. Managerial Rotation[1]

One direct implication of this analysis of entrepreneurial disappointment involves the rate of turnover or rotation of managers of enterprises. Entrepreneurs hire managers to supervise production; managers are among the resource units purchased. But, by definition, managers "manage"; that is, they are expected to exercise discretion in the supervision of other input usage. Managerial talents tend to be readily transferable as among alternative employments. These qualities of management, combined with the ubiquity of entrepreneurial disappointment, suggest that managers will be quite vulnerable to discharge and rotation, and quite independently of any problem in the internal incentive structure that may affect the behavior of managers themselves. In other terms, the effect described here would occur even in the extreme case where managers behaved, in each and every instance, as if their own interest should be identical with that of the entrepreneur.

Professional sports enterprises offer an exellent real world illustration of the argument here. Owner-entrepreneurs are optimistic about the prospects of franchises, and they tend to assign expected values to franchises in excess of any values that might be realized. They hire managers, and they tend to be disappointed with managerial performance, quite independently of any measure of the actual quality of managerial decisions. Frustrated when results do not match up to anticipations, owners fire managers and hire new ones, for the most part from the pool of available persons who have, themselves, been fired by other owner-entrepreneurs and for the same reason. We observe a high rate of managerial turnover without noticeable changes in the relative fortunes of the separate franchises.

VII. Entrepreneurship and Risk-Taking

Entrepreneurs act because they expect to make profits. Their action has no relationship to the bearing of risk or uncertainty, as such. An entrepreneur may exhibit risk preference, risk neutrality, or risk averseness. To the extent that he is risk averse, the expected profit from any project necessary to bring him over the threshold of positive action will be greater than that which would be necessary under risk neutrality or risk preference. The risk-averse entrepreneur would never undertake a project that promises a marginally-positive expected surplus, if there is risk or uncertainty involved.

It may be argued, further, that since each entrepreneurial choice is unique, genuine uncertainty must be present. As Shackle has stressed, since the properties of the whole experiment, which may embody Knightian risk rather than Knightian uncertainty, cannot be relevant to the unique choice that must be made, entrepreneurs must choose among actions that are necessarily uncertain as to outcomes. This argument may be, indeed must be, granted, but there remains the possibility of arraying, at least conceptually, the entrepreneurial choice situations in terms of their uncertainty characteristics. In the one extreme, an entrepreneur may be "relatively certain" that the outcome he predicts will, in fact, occur consequent to his action. The entrepreneur who buys wheat in one market and sells it simultaneously in another, and for a different price, is acting under conditions of "relative certainty". When we examine entrepreneurial choice under conditions of relative certainty somewhat more carefully, we can show that profits, the residual rewards to entrepreneurship, are not properly described or defined as a reward for risk or uncertainty bearing on an economy. Consider the entrepreneur-arbitrageur who buys wheat in one market and sells it simultaneously in another. There is little or no risk or uncertainty involved, and such an entrepreneur may be higly risk averse. The profit that he makes rewards him for his ability to "see" the profit opportunity and to act upon it. He is rewarded for "creating" value by sensing the differentials in price. Without such a prospect of reward the value would not, in fact, exist or come into being at all.

In most conditions for entrepreneurial choice, of course, decisions must be made under uncertainty, and entrepreneurs must, in one sense, accept such uncertainty bearing as a necessary characteristic of their choice situation. But a willingness to bear uncertainty is surely not a sufficient condition for entrepreneurship. There may exist many persons, who are genuinely risk-loving, and who will gladly take on the uncertainty of investments in projects that are presented to them. Such persons may, however, wholly lack any ability to see profit opportunities, to invent in their mind's eye new arrangements, new technology, new resource combinations. There may be no correlation at all between personal talents in this respect and personal proclivities to take risks.

VIII. Entrepreneurship and Time

To this point, I have done little more than recast slightly, and with the somewhat interesting managerial implications, the theory of entrepreneurship presented by Kirzner. I want now, however, to diverge from Kirzner's conception in one important respect, namely in his emphasis on the absence of any necessary relationship between ownership and entrepreneurship. I can appreciate Kirzner's purpose; he sought to divorce or to separate the economic function or role played by the owners of capital assets from the role or function of the entrepreneur. I have no quarrel with such separation, which is essential for logical clarity. As Kirzner emphasized, the pure entrepreneur need hold no assets at all. His idealization is the instantaneous arbitrageur, who simultaneously enters separate markets on differing sides, seeking profit in the process.

This idealization is a biased one, however, and is best described as an extreme end of a possible spectrum of models for entrepreneurship, and in no way "representative"of the sort of entrepreneurs Kirzner seeks to place in his motivating roles in a competitive economy. Almost universally, entrepreneurs seek their profits by holding, or owning, assets *through time* rather than the instantaneous arbitraging modelled by Kirzner. I do not suggest that they hold capital assets "as capitalists", that is, in order to secure a rate of return of the ordinary sort. Quite the contrary, and Kirzner is quite correct in stressing the difference here. My point is rather that, in order to engage in entrepreneurial arbitrage, defined in the large, most "traders" must work in time. They do not "hedge" as if they are the classic-case flour millers. Most entrepreneurs buy in one market *now,* and expect to sell in another market *later,* or vice versa, or at least I should argue that this is a more representative model of entrepreneurial activity than Kirzner's instantaneous or simultaneous model.

This model suggests that confusion about the pure entrepreneurial role is especially likely to emerge, since the temporal aspects suggest the risk or uncertainty-bearing function previously discussed as well as the capitalist or pure ownership function associated with the productivity of capital itself. The pure entrepreneur, however, sublimates as inessential or inconsequential *both* the risk-bearing and the ownership role, which he may, nonetheless, be required to occupy in order to take advantage of the profitable opportunity that he thinks he sees before him. The pure entrepreneur may, of course, borrow sufficient funds to finance the required outlay on the assets to be transferred to his ownership, and the rates at which he borrows may be even higher than any nominally-computed "return" on the value of these assets. In this setting, the entrepreneur is not at all a "capitalist" in any net-asset or net-wealth sense. He may be, and probably is, more normally in a net debtor than a net creditor position. But nonetheless, the entrepreneur must secure, and hold, title to the particular asset, or asset bundle, that he purchases in order to secure for himself the anticipated profits from later resale at a higher price. This "arbitrage through time"model of entrepreneurship can incorporate examples extending from ordinary speculation in real estate through the organization of production of final goods and services.

IX. Entrepreneurship and Inflation

Unless the temporal setting within which entrepreneurial action takes place is recognized, the effects of anticipated inflation upon entrepreneurship, and, through this, on the dynamics of the economic process, tends to be obscured. Implicitly, or by presumption, the role of the entrepreneur, and of entrepreneurship, discussed in preceding sections of this paper is carried out in the context of an economy described by monetary stability, at least within limits of tolerance. That is to say, the individual entrepreneur, who purchases resource units for the purpose of exploiting a profit opportunity that is not universally seen by all participants in the economy, acts in the expectation of being able to create *real value,* as measured by the response of market participants when confronted with the opportunities that he constructs. Although individual entrepreneurs are not conscious of such unintended consequences, their action, in net, is generative of increases in real product value in the economy. Resources are reallocated via entrepreneurial creativity in such fashion as to increase overall value productivity.

Let us superimpose upon this dynamic model of economic process governmentally-generated, continous, and anticipated inflation. The predicted effects are clear. Opportunities for entrepreneurial profits emerge that do not necessarily generate increases in real value. Anticipated inflation opens up generalized opportunities for arbitrage-through-time rather than the specialized opportunities open to ordinary entrepreneurship in con-

ditions of monetary stability. Attempted exploitation of the generalized opportunities here will drive up the prices of real-valued assets that are durable relative to prices of either nondurable goods or of claims to nominal-valued assets. The specialized opportunites for genuinely creative entrepreneurship will, of course, continue to exist, potentially, in the inflationary setting. However, exploitation of these opportunities is made more difficult by the relative bias introduced in the structure of temporally-designated prices of goods. To take advantage of a genuine opportunity, an entrepreneur must secure title to real-valued assets. In order to do so, he must assume a fixed-value liability; he must issue "bonds", denominated in nominal yields. If the purchaser of such "bonds" (the seller of the real asset) and the entrepreneur place the same expected value on the anticipated rate of inflation, and, further, if this rate is universally expected by *all* persons in the economy, the effects that have been suggested here need not arise.

If, however, we allow the more plausible realistic model in which *some* but not *all* persons in the economy fully anticipate the inflation, the relative price bias note must emerge. This point is worth developing in some detail.

Assume that the government is committed to maintain a specific rate of continuing inflation. Assume, further, that the full effects of this policy are predicted by only *some* of the economy's participants (facetiously, we may call these "the economists"). Members of the latter group will see the arbitrage opportunities available to them as a result of their superior knowledge about the effects of the government's announced behaviour. These persons (the "new entrepreneurs") will, therefore, reduce current holdings of money and nominal claims ("bonds") and increase current holdings of durable assets that are expected to appreciate in value over time. Prices of the latter assets will rise; prices of "bonds" will fall.

There is, however, no necessary intersection between the set of "true entrepreneurs" and that set of "new entrepreneurs" attracted to invest in real assets solely because of the anticipated inflation. For members of the former set who are not, simultaneously, members of the latter set, the terms-of-trade will have shifted dramatically against them. Potential profit opportunities which might exist in monetary stability vanish in the *ex ante* sense, and no entrepreneurial reallocation of resource toward generating higher real values takes place. The dynamic development of the economy is dampened.

The effect on economic process generated by this dampening of entrepreneurial acitivity is not inconsistent with *ex post* findings that, as a group, entrepreneurs secure relative gains from inflation. We get the somewhat paradoxical result that while inflation may substantially reduce the number of entrepreneurial projects, among those introduced there will be relatively few failures or bankruptcies. Entrepreneurs may gain, *ex post,* from inflation due largely to the net monetary debtor status or, what amounts to about the same thing, to entrepreneurs' necessary role in the temporal arbitrage process. To the extent, however, that the set of "new entrepreneurs", created by the inflationary expectations, and the "true entrepreneurs" do not match precisely, inflation must have the effect of preventing some resources from those employments or usages where they are most highly valued, in the *ex ante* sense. A land parcel held for potential inflationary gains by a "new entrepreneur" may not be worth the asking price to a "true entrepreneur", who may envisage genuine development prospects but who may not fully anticipate the inflationary effects of government policy. As a result, the economy produces lower real value than otherwise might have been produced.

Resources flow, via the activity of entrepreneurs, to those uses that promise the highest value, as estimated by entrepreneurs at the moment of market exchange. The introduction of inflation does not modify this basic proposition. But inflation does have the effect of distorting the prospective values estimated by entrepreneurs. In this context, it is worth keeping in mind that the "highest valued uses" do not exist independently of entrepreneurial estimates. "Highest valued uses" for resources are "created" in the imagination of entrepreneurs, and any distortion introduced into entrepreneurial estimates may destroy potential value never to be replaced.

As noted earlier, the effects of anticipated inflation discussed here take place only so long as some potential entrepreneurs fail to incorporate the correct inflationary anticipations in their own estimates. If and when *all* potential entrepreneurs come to act upon the same anticipated rate of inflation, along with all other participants in the economy, the distortions will, of course, disappear. Critical errors may be made, however, in the failure to distinguish between an inflation anticipated by *some* persons in the economy and an inflation anticipated by *all* persons in the econ-

omy. The state of "equilibrium expectations" describing the latter situation may not be reached until the end of an extremely long temporal sequence.

X. Conclusions

This paper has developed no central "theme" or "principle". It should perhaps have been entitled, "Notes on Entrepreneurship". In writing this paper, in two versions separated by several months, I have had the feeling that many other implications than those discussed here would emerge. To this point, no others have dramatically appeared. I become more convinced, however, that a "breaking out" of the intellectual constraints imposed on so many of us by the equilibrium constructions of neoclassical economic theory is necessary if we are to understand the economic process properly, and through some such understanding, begin to get some handles on how the dynamic potential of the market order might, once again, be harnessed.

Footnotes

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