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Keynes and the New Keynesian on the Role of Uncertainty and Information

J.A. KREGEL*

Competitive Markets: Failure or Inexistence? The Early Critics

A telling comment on the current state of confusion in economics is offered by the decision of the Swedish Academy to award this year's Nobel Prize to Ronald Coase, only a year after awarding the Prize jointly to Harry Markowitz, Merton Miller and William Sharpe for their analysis of financial markets based on the principle of perfectly competitive efficient markets. Amongst the many interpretations of Coase's ideas is one which says that the "auctioneer" of Walrasian theory cannot remain exogenous to the analysis of price formation. Real, live market makers, whether they be auctioneers or dealers, expect to be remunerated for their time and effort and to earn the market rate of return on capital employed. These are what are now referred to as "transactions" costs, and they lead to all sorts of anomalies when introduced into efficient, perfect market theories.

In perfectly competitive conditions, if the costs of maintaining the auctioneer exceed the benefits of exchange, then competitive equilibrium may not be reached by the free market; in competitive conditions new entrants should bring down transactions costs or new transactions technologies or organisational forms should be introduced in order to reduce transactions costs. As Coase suggests, one competing form of organisation is to internalise transactions within a central coordinating mechanism to replace the auc-

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tioneer and which is commonly called a firm. It is interesting that traditional theory has been no more prolific in analysing the firm than it has in analysing the life and habitat of the auctioneer.

If the excessive costs of using the market lead to replacing it with an internal organisation called the "firm", this will reduce market transactions and further increase transactions costs associated with the market, creating a vicious circle in which eventually no transactions take place via the market. The introduction of the traditional competitive process into the analysis of the provision of the transactions services of the market leads to the paradox that without intermediaries markets cannot function, but when intermediaries are too costly, the market may not exist.

There is a more direct way of seeing the difficulty of combining perfect competition with the existence of intermediaries or market makers: where market makers use bid-ask spreads to earn their income, a price range exists within which prices may vary without provoking any impact on supply or demand, and two different prices may exist for the same good without generating any profitable arbitrage to eliminate the discrepancy, violating the basic conditions of perfect competition and the law of one price. However, if the wage or return given by the spread is above the market wage or return, new entry will drive down the spread; if it drives it down to zero, all market makers withdraw and the "market" disappears. The simple introduction of individuals who make markets, whether they be live auctioneers or intermediaries, threatens the existence of competitive equilibrium and the existence of the perfect market of neoclassical theory.

It is important to remember that Coase defined those forces (now defined as transactions costs) which produce the impetus to innovation in market organisation (such as firms) as arising from the "uncertainty" associated with using the free, competitive market to organise transactions. A similar argument was made by G.B. Richardson in a slightly different way in a 1959 Economic Journal article and a 1960 book. He argued that if prices in a competitive market were to produce signals leading to the appropriate allocation of resources, then they must reflect changes in prospective rates of return to investment across sectors. But, if a rise in the prospective return from one sector is signaled by a rise in the price of its output all other producers would be induced to shift resources. If everyone follows the price signal and shifts resources this will lead to excess supply and actual returns which are lower than those which were signaled by the initial rise in price.

Richardson argues that in order for producers to make rational resource allocation decisions the intentions of all other agents must be known. However, if prices reflect the future intended actions of agents, then they will not rise and no one will receive the signals necessary to produce the appropriate reallocation of resources. If all producers have perfect information, none of them will undertake investments for fear of loss, and the new equilibrium cannot be achieved; if prices are perfect predictors of future resource commitments in the sector, then they should not rise, for they should reflect the new flow of resources to the sector which will cause a rise in output which reduces prices. Thus the paradox: if prices do not change then no new investment will take place.

To resolve the paradox a market co-ordinator or auctioneer is required to provide the information that is necessary in order for the competitive process to operate; since it is not in the interest of any single producer to provide the information he possesses concerning his own intentions he cannot be relied to do so without remuneration; but, the information concerning his intended actions is only useful if no one else possesses it. The individual is thus naturally led to conceal his intentions.

It is interesting that both the Coase and Richardson arguments, which might be called competitive market "impossibility" theorems, have been well-known for some time. It is also interesting that both rely on the idea that it is the operation of the competitive market mechanism itself which produces uncertainty in market transactions. This is what has been called endogenous, rather than exogenous, disequilibrium or instability. They are arguments of the "beauty contest" variety cited by Keynes in Chapter 12 of the General Theory and as such are compatible with what I would call the post-Keynesian approach to a monetary production economy which considers uncertainty as arising from the very operation of the perfectly competitive market in conditions of capitalist production, conditions which make the use of money a response to that uncertainty, and in which money itself can then introduce endogenous elements of disturbance.

1. Richardson apparently gave up economics in despair of the lack of recognition of the implications of his work; Coase did not give up, but recently (1988) lamented the fact that no one has taken any notice of the implications of his work. It will be interesting to see his Nobel Lecture.
Competitive Markets: Incomplete or Inefficient or Just Lemons?

In response to the success of the market-clearing, perfectly competitive equilibrium assumptions of the Rational Expectations Hypothesis, there have been a number of attempts in the 1980s to formulate a criticism of the self-regulating nature of the competitive market economy which builds on the idea of incomplete information or incomplete markets produced by externality or moral hazard type problems.

This approach was initiated by George Akerlof's (1984) application of the "lemon principle" to used cars. Trying to answer the question of why the secondary market price of a new automobile is substantially lower than its primary market price, he noted that the price difference is not really between a new and a "used" car, but between buying in the primary market with a "high" probability of getting a "good" car, and buying in the secondary market where there was a "high" probability of getting a "bad" car or a "lemon". He argued that a car purchased in the secondary market (irrespective of the extent of its physical deterioration or "use") has a higher probability of being a lemon than a car purchased in the primary market.

Before proceeding, note that the analysis presumes that there are "good" and "bad" cars produced and sold in the primary market without quality control procedures being able to distinguish bad cars, and that there are objective probability distributions explicating the occurrence of each event which are equal to the subjective distributions held by agents.

Thus, we know that there are good and bad cars, although no one knows the category of the particular car he buys when it is acquired. Purchasing and operating (using) a car produces "inside" information, available only to the (user) owner. New and used cars are thus different products for a "used" car has more information attached to it, but that information is only accessible by the owner.

If both new and "very recently" new cars sold in the market at the same price, the buyer of a new car which had revealed itself to be a lemon as a result of use could resell it in the second-hand market and buy another new car until he succeeded in finding a "good" new car. His information would have been gained at the expense of buyers in the secondary market. In these conditions no one will pay the same price in the secondary market for a

"used" car (here "used" no longer refer to physical use, but to the learning by using that has caused it to reveal its true identity as a lemon) as the primary market price for a new car. Thus, even if a "liquidity trader", i.e. someone who has to sell in order to finance current expenditures rather than someone adjusting his portfolio as the result of a change in his evaluation of existing information concerning the fundamental value of the asset, has to sell a "good" car in the secondary market, the most it will fetch is the price of a "lemon". Thus two "different" goods sell at the same price, which in itself does not reflect the "fundamental" value of the car. No one should rationally sell "good" used cars, for they will not fetch a "fair" price. Akerlof notes that if there are degrees of "lemon-ness", then the above argument implies that one should not sell a better than average "lemon" because it would only receive the average lemon prices, and so forth. This leads to the limiting result that only the very worst cars (below average lemon quality) will be offered on the market and implies that there will be no buyers because everyone is certain that it is the worst of the worst lemons. Thus the secondary car market disappears.

Now, there is always a common-sense response to paradoxes of this sort. Might it not be possible for a technically competent auto mechanic to act as a middle-man, offering to sell information on the lemony qualities of cars traded in the secondary market. Certainly there should be some space for intermediation and profitable arbitrage as a result of this specialised knowledge of car quality.

Incomplete Competitive Markets: Lemons and the New Keynesians

Stiglitz, and an increasingly diversified portfolio of co-authors, have adapted the Akerlof argument to markets in general, and to financial markets in particular, to deal with this very question. If there are people who know the value of used-cars and, to be symmetric, people who don't know the value of anything but the price of everything, and who believe that quality is a positive function of

2. Note that normally primary issue market prices and secondary market prices for securities are uniform; what we learn about old securities reflects on the prices of new ones, the distinction between good and bad IBM shares seems implausible to the imagination.
price so that higher prices reflect better quality cars, then they will be attracted to cars with higher prices. Since “informed” traders can identify “good” cars without reference to relative prices, they can buy irrespective of price (this is an adaptation of Grossman & Stiglitz, 1980). By doing so they drive up prices of good cars, creating signals to other buyers. Since they buy before the price goes up they can sell the cars for a profit.

If the uninformed notice that there is easy money to be made in becoming informed about car quality, more of them should decide to become experts. But, the increase in the number of experts increases competition for good cars and this reduces the benefits of buying first. Being informed is only valuable if you are in a minority.

If it is costly to become expert, the decreasing benefits of buying first may no longer offset them, for the number of people trying to be first is continually increasing; when everyone is informed it is no longer worthwhile, so everyone stops trying to evaluate lemon quality and the second-hand car market again risks disappearance. If everyone is perfectly informed about cars there is no benefit which offsets the costs of acquiring information, while if prices perfectly reflect information then no one needs seek information and it is impossible for prices to perfectly transmit information.

The similarity of this argument with the Coase paradox should be sufficiently clear not to require explanation. But, the differences should also be crystal clear, for this is a case in which all necessary information is available; it is simply costly, not impossible, to obtain: a little elbow grease and we have “learning by using” increasing the completeness of our information. The incompleteness of information is a state of nature, but it is not the result of the operation of the system. Note that there appears to be very little difference from Stigler's original analysis of the cost of information.

But, it was not enough to use lemons as stones to throw at the devil. The intervention of the invisible hand, they have recently been transmuted into apples which, as anyone knows, may be good or rotten, and the rotten ones may spoil the barrel, or produce involuntary unemployment or insufficient investment, not necessarily in that order. To see how Akerlof's orginal story can be extended to provide the New Keynesian explanation for unemployment and stable unemployment equilibrium, assume that there are “rotten-

apple” workers, and there are employers who insist that it would be irrational to hire more labour when it is offered at a lower price, for certainly they will be all rotten apples, “shirkers” only willing to work for lower wages because once hired they have no intention of working as hard as other workers. Thus, there are fewer employed workers because good workers who are unemployed cannot manage to get themselves hired in place of the shirkers, not even by offering to work for lower wages, because employers can't know if they will be good workers.

The same type of story applies to the shortage of investment due to the unwillingness of bankers to lend to entrepreneurs (Stiglitz & Weiss, 1981). In the place of workers who want to work, we now have entrepreneurs who would like to invest, and are even willing to take lower rates of return on their own equity by paying higher than prevailing interest rates to the bankers, but can’t convince the bankers that they are not “bad eggs” or “Ponzi” financiers. This is because the banker facing the entrepreneur reasons just as the entrepreneur facing the worker: if the entrepreneur is offering to pay over the odds for a loan it can only be because he has no intention of putting the money to work, but rather intends to misappropriate it.

Thus, an honest entrepreneur, who could make a profit on his investment project at the current interest rate, is denied funding while the bank ignores his request to borrow at higher rates (excess demand for funds) and refuses to raise interest rates to efficiently allocate credit because it believes that this will simply cause the quality of the loan portfolio to deteriorate, charge-offs to rise and the bank's return to fall. This is because, as interest rates rise to accommodate the “bad egg” borrowers, the honest borrowers with projects paying lower rates of return will repay their existing loans or withdraw their current loan applications, so the bank is left in the limit with only “bad eggs”.

In this version of the story the level of investment is kept too low because the marginal efficiency of capital cannot fall to equality with the interest rate. (Of course, this difference could also be explained by means of a borrowing and lending spread which would prevent equality of the interest rate and the return to capital). This is the “New Keynesian” interpretation of Keynes: “Keynes’ analysis of investment was, however, basically a neoclassical analysis: it was failure of the real interest rate (the long-term bond rate) to fall sufficiently that was the source of the problem.” (Greenwald, Stiglitz and Weiss, 1984, p. 194).
There is always some who are unconvinced by a “new” theory: What if the entrepreneur finds an investment banker who is unconcerned to ruin his reputation and advises him to issue shares to replace the absent bank lending? Now the lenders are not sceptical bankers, they are sceptical institutional portfolio managers (Greenwald, Stiglitz & Weiss, 1984). A new share issue dilutes the return on existing shares and prices fall (except in Japan where the opposite regularly occurs). A fall in prices represents an increase in the costs of borrowing to the firm, the equivalent of a rise in interest rates. The portfolio manager now asks himself, why is an entrepreneur willing to pay higher than market interest rates to borrow via an equity issue? Or they might also think that good managers will be more willing to undertake more risky bank borrowing (they don’t know the New Keynesian economics and thus do not realise that it is precisely the good borrowers that the bankers do not lend to), so that any firm which is increasing equity must be a bad firm and share prices are will be appropriately reduced in price.

In another variant bankers consider that since managers should recognise that borrowing increases leverage and thus the manager’s potential remuneration, while share issues give all the extra profit to shareholders so the managers should become slackers (less) as the debt/equity ratio falls (the managers apparently don’t hold stock options nor do they set the dividend rate). On the other hand, it might be reasoned that higher debt/equity ratios have higher risk and a higher risk of bankruptcy and loss of employment for the managers: managers thus work harder with higher debt/equity ratios (again, no golden parachutes). There are enough reasons for bankers not to lend to firms which cannot borrow in debt markets, so that the effective constraint is the cost of bank borrowing and the constraint on the full employment level of investment is the failure of the rate of interest to come into equality with the real return on capital.

Note that in all these cases the “normal” laws of supply and demand are inoperative: wages do not fall when there is excess supply of labour (marginal productivity of labour is below the wage), interest rates do not rise when there is excess demand for loans (marginal productivity of capital is above the interest rate). This produces the conclusion of the New Keynesian economics that employment will settle at an equilibrium level in which there is excess supply (excess demand for capital) with perfect competition. We thus have the traditional fixed wage and fixed interest rate model, but now explained in terms of incomplete markets produced by imperfect information. If there were an omnipotent economist who could produce perfect information, the system would naturally produce full employment.

Competitive Markets: Incomplete and Risky or Inefficient and Uncertain?

I would not want to argue that these are not important insights into the operation of markets but I believe they do not take into account the range of factors which led both Coase and Richardson to reject the traditional explanation of the operation of perfect competition. First, all the information in these models is known by someone—it is an information coordination problem. Second, the kind of information that is assumed to be known in general cannot be known: entrepreneurs know the mean and the distribution of the real marginal product of their investment projects, borrowers know their probability of paying off a loan, workers know the mean and distribution of their real marginal product. But we know from Coase and Richardson that in a market economy these values cannot be known, ex ante. We also know from the capital theory controversies that they cannot be unambiguously defined without assuming the type of operation of the perfectly competitive market that the New Keynesians are trying to argue cannot exist (the knowledge of the real marginal products which the theory requires can only exist on the basis of conditions which it shows cannot exist).

If we look at the simplest version of incomplete information in the bank debt market, it still remains true that the interest rate which is charged does not have any impact on the mean rate of return to the investment project, so that the separation theory of traditional theory which makes the behaviour of real variables independent of monetary variables still holds. Nor, in that model, does credit rationing have any role in explaining unemployment, since an increase in the rate of interest which reduces rationing also decreases the supply of loans, so that total investment falls as the interest rate rises, just as in traditional Keynesian theory. The New Keynesian credit rationing caused by incomplete information on borrowers turns out to be precisely equivalent to that which
would have been imposed by the price mechanism. The argument then returns to the interest rate being "too high" relative to full employment marginal efficiency, and we still have to use the assumption of a fixed supply of money to explain why the interest rate is too high.

This leads to the final observation — these models are purely exogenous money models. No bank run by Basil Moore (e.g. 1988) would ever run into such conditions for they would lend to all comers at the prevailing rate established by the central bank which would then have to come up with the reserves to support it — if there are dishonest borrowers the bankers can always get the central bank to lend to them as a last resort.

But, this is not the most disturbing factor about the approach. In the tradition of the Modigliani-Samuelson neo-classical synthesis, it excludes monetary factors from a role in generating instability. Although the New Keynesian tradition appears to be asking the right "Keynes-type" questions and producing "Keynes-type" answers, what does all this have to do with Keynes? My understanding of Keynes' argument, and the interpretation of Keynes' theory of monetary production which has been given by Doyen Barrère in all his writings (most recently 1981), is that even in the presence of a perfectly functioning competitive price mechanism, there was no necessity for full employment to result. A decrease in wages in the face of excess labour supply would not bring about full employment, and an increase in interest rates certainly could not, although a decrease might, depending on how expectations responded. It is the recognition of the monetary nature of production which produces the explanation of these, natural but unsatisfactory results in any real economy. It is not that information is incomplete, but that the information that the market requires simply does not exist, could not be discovered, even by hiring a firm of consultants, nor by waiting or by "using" cars. Entrepreneurs have to form expectations about values of variables at future dates about which there is no currently existing "objective" information. As a result the economy would be prone to fluctuate as expectations fluctuate, although usually not violently, around a level of output below potential and below full employment. Since expectations are formed in part on the basis of the functioning of the economy and in part on the "imagination" of entrepreneurs, they will have both endogenous and exogenous elements.

Aside from any discussion of whether borrowers misrepresent the probability of successful outcomes or to the proportion of shirkers and slackers due to moral hazard, it is necessary to explain this expectations formation process and the uncertainty which makes it necessary. This is what Keynes attempted to do in the monetary theory of production, an aspect of Keynes work that has gone unnoticed by most of the profession, but which Doyen Barrère has dedicated most of his writings. It would appear that the New Keynesians would have much to learn from a French Keynesian.

REFERENCES


La macroéconomie monétaire contemporaine : une mise en perspective

Edwin Le Héron* et Pierre Lévy**

L'analyse dichotomique de la sphère réelle et de la sphère monétaire a fait l'objet d'un large consensus parmi les économistes jusqu'au XIXe siècle si bien que la théorie quantititative de la monnaie fut longtemps le canal d'intégration privilégié de la monnaie. Dans le cadre des fondements microéconomiques de la macroéconomie néo-classique, le quantitativisme constituait alors le seul développement de l'analyse libérale en termes globaux, si bien que macroéconomie et monnaie sont depuis longtemps difficilement séparables. Mais, en supposant la neutralité de la monnaie à long terme et l'offre de monnaie exogène, le rôle actif de la monnaie était alors réduit à la détermination du niveau général des prix.

C'est donc le réexamen de la théorie quantitative de la monnaie par K. Wicksell, précisant le modus operandi de la monnaie sur les prix par le mécanisme indirect d'un effet de la quantité de monnaie sur le taux d'intérêt, qui fut à la base de bon nombre de tentatives de dépassement de la théorie statique traditionnelle par le développement de l'analyse dynamique des cycles monétaires (avec des positions très diverses, de Hayek [1931] à Myrdal [1931]). C'est dans cette perspective que doit être restituée la réflexion monétaire de J. M. Keynes, qu'il s'agisse du Treatise on Money ou de la Théorie Générale.

Avec ce dernier ouvrage, Keynes a donné une forte impulsion à

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