

THE MICROFOUNDATIONS OF KEYNESIAN ECONOMICS

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INTRODUCTION

This essay will be concerned with examining the set of models which are generally known as Keynesian, and evaluation of their choice-theoretic structure from a microeconomic viewpoint. It is not primarily concerned with assessing the intrinsic worth of such models, nor, indeed, will the actual worth and relevance of microeconomics itself be considered. The essay can be broadly split into two sections. The first section starts with a methodological discussion of the need to have well-specified and theoretically valid microfoundations for aggregate models, and in doing this will attempt to identify the fundamental basis behind microeconomics. I shall then briefly discuss general equilibrium theory, the "hard core"¹ of microeconomics; and will then move on to consider what exactly Keynesian economics is, and is it possible for it to have microfoundations. This section concludes with a discussion of the microfoundations problem with reference to the Post-Keynesians, such as Davidson, and possibly Shackle.

The second section opens with a very brief historical survey of some of the earlier attempts to root Keynesian economics within a microeconomic framework. I then move on to consider some more recent attempts to obtain Keynesian results using microeconomic foundations; Clower and Leijonhufuud are both considered and the school of predominantly French economists who developed fix-price theory. We will focus on the importance of money in Keynesian models, and on the question of whether Keynesian economics is a 'general' theory. I will finish by looking at some more recent, and perhaps less ambitious attempts to develop microfoundations. One further point before starting; this is essentially a survey essay and, as such, will not attempt to provide any new insights or develop new models. Any technical elements will be relegated to an appendix.

Section I:

The first task is to try and define what is meant by microfoundations. As I see it, the core of microeconomics is that its basis lies in choices made by individual traders. These traders are assumed as being rational and optimizing, by which it

is meant that traders try and maximise their own welfare. This basis then leads to theorizing about exchange and production, in fact to all that constitutes microeconomics. I am not going to venture an opinion on whether it deals with these questions satisfactorily; there are obvious flaws, notably that it tends to concentrate too much on equilibrium positions. How does microeconomics link in with this? The common, rather vague, definition of macroeconomics given in textbooks is that it is concerned with economic aggregated e.g. output, unemployment, inflation etc. Thus macroeconomics deals with aggregated markets², but often it has dealt with them with methods totally different to that of microeconomics. I believe that this is a mistake and that if macroeconomics is to form part of a coherent discipline of economics, it should use the same basis as microeconomics i.e. the rational, optimizing individual.

If we accept the need for microfoundations, then what form should they take? Most writers have seen general equilibrium as the main connection between the two areas. General equilibrium, first conceived of by Leon Walras and given its present form first by Hicks and then Arrow and Debreu, can be conceived of as the 'hard core' of macroeconomics. This phrase is derived from Imre Lakatos' view of scientific progress and is meant to indicate that at the heart of any discipline there exist propositions, assumptions and beliefs that are taken as irrefutable by all members of the scientific community³. This, I should add, does not mean that economists believe general equilibrium models are descriptive of the real world, merely that it is the basis against which all other theories are judged. The specifics of the general equilibrium model are well known and I shall not discuss them here. I shall only note that it is essentially timeless; posits instantaneous price adjustment through the famous tatonnement process, and supposes complete certainty and perfect information on the behalf of all transactors. This last point means that a complete set of futures markets exists and thus the future does not prevent the existence of an equilibrium. To the commonly made (and true) point that the assumptions are unrealistic, I would reply that this is only natural, since they were designed as sufficiency conditions; thus the rules of the game were fixed to ensure an equilibrium outcome. Whether or not one agrees with the idea of general equilibrium, I think that it is inevitable that any attempt to root microeconomic foundations on macro models must use a general equilibrium framework, since it is so much of the heart of microeconomics.

The next task is to define what I mean by Keynesian, and to ask what are the essential insights of Keynesian economics. When using the words "Keynesian model" I mean a model which not only permits, but tends to generate a situation where markets fail to clear and there is less than full employment of resources. I do not intend to become involved in semantic discussion about the difference between Keynesian economics and the economics of Keynes. Such a distinction may be interesting but I do not believe it is particularly useful. The presumption in Keynesian models is that the market system will fail to clear due to co-ordination problems, and that if it did clear the economic situation would be ameliorated. In this I follow Hahn: "In a real sense Keynesian economics is about co-ordination failure which leads to outcomes which can be Pareto improved"⁴

Early Keynesian models tended to very ad hoc and to generate results without a firm theoretical basis. Due to the influence and power of the Keynesian school these faults tended to be overlooked. But if the arrival (or revival) of neo-classical models has done nothing else, it has at last forced Keynesians to examine their models closely and has made them search for new foundations.

Before concluding this section I wish to examine briefly the type of economics which has come to be known as Post-Keynesian. I feel the term "Fundamentalist Keynesians", as used by Coddington⁵ is more useful here, and I wish to divide them into two groups, even though such a distinction is hardly all-encompassing.

(a) Writers such as Shackle, Davidson who emphasize uncertainty, massive dynamic shocks to the system etc. Much of their objection to microfoundations is based upon the idea that economic systems are inherently unstable and thus cannot be modelled adequately. With this approach it is not surprising that they have little use for microeconomics and its emphasis on equilibrium.

(b) The Neo-Ricardians; here I am thinking primarily of the Cambridge school and people such as Joan Robinson. Much of their work attacks marginal productivity analysis and asserts that there is a need for a return to macro theories of distribution. Here the emphasis is on class; the division between workers, capitalists and landowners is the basis of much of their theories. As such, they reject reductionist theories which seek to base

economics on individual choices and, thus, they have little use for microfoundations.

In order to emphasise the huge gaps that exist between orthodox theorists and fundamentalist Keynesians I shall refer to the proceedings of a conference on the microfoundation of macroeconomics. Professor Davidson claims that the general equilibrium model could not resolve the "interesting macroeconomic question of money, inflation and unemployment"⁶. Professor Nell claims that "the distinction between micro and macro would have made no sense to the classical economists"⁷ and calls for a theory which emphasized individual social class.

I should point out that these theories are useful, indeed possibly more useful than orthodox economic theory. But I believe that they are not part of economics per se, as they employ a totally different framework. Thus if Keynesian ideas develop within the economic discipline, they must do so from a reductionist basis. This view-point is made by Hahn when in discussion of his work: "(1) I am a reductionist in that I attempt to locate explanation in the actions of individual agents. (2) In theorising about the agent I look for some axioms of rationality. (3) I hold that some notion of equilibrium is required and that the study of equilibrium states is useful."⁸

Section II

I shall start this section with a brief survey of early attempts to root Keynesian insights within a macroeconomic framework. The logical place to start is with Hicks and his classic text "Value and Capital" - Hicks was the first to introduce the notion of a fix-price market, where prices would not move to clear markets, though he did not indicate why this might happen. Perhaps his most important insight was the idea of temporary equilibrium, which allows expectation to enter into his model. Expectations are assumed given at the start of a Hicksian week and may not be changed until the start of the next week. With the absence of some futures market, this severely weakens the stability of a general equilibrium system, which provides a strong link to the ideas of Keynesian economics. Unfortunately Hicks' shown time period is highly arbitrary; and this, together with some mathematical problems with his models, meant that he had not solved the microfoundations problem.

Other attempts to link micro and macro were made by Oscar Lange and Laurence Klein, but I will pass these by and move to the work of Don Patinkin. Using the real balance effect, Patinkin proves that if all prices are flexible a Walrasian equilibrium will be reached.⁹ However, if any one price is inflexible unemployment may exist. Given that prices tend to be inflexible the conclusion obviously was "that as a practical economist Keynes was undoubtedly correct in his diagnosis of disequilibrium and the need for integration in markets by governments to stimulate demand."¹⁰

This conclusion however was not very satisfactory as it assumed price rigidity occurred, but made no real attempt to explain why. This left classical reasons such as union restrictions, monopolies, etc. as the only reason for unemployment. To try and redeem Keynesian ideas, work was done on trying to explain price rigidity, and most of it focused on specifically non-tatonnement ideas, e.g. the Walrasian auctioneer who was presumed to instantly change prices, if needed, was abandoned.

The most important work was done by Robert Clower in his paper "The Keynesian Counter Revolution" by using his dual decision hypothesis. The theory of this will be developed in the appendix, but its essence is that if a consumer finds him/herself unable to sell as much labour as s/he wishes, his/her demand for goods will be smaller than it would otherwise have been. This distinction between notional and effective demand for goods ensures that since prices move only in response to effective demands, a situation can exist where excess supply can appear on one market, but there will be no excess demand to counteract this in another market. This provides an explanation for price rigidity in the face of unemployment.

The problem is obviously due to consumers being unable to provide information to producers, that they would buy more if they could work more. Clower and other writers initially tended to blame this information problem on the fact that trades were usually conducted in monetary terms. This prompted Clower to write another paper "The Microfoundations of Monetary Theory" in which he emphasized this point and made the now infamous dictum 'money buys goods, and goods buy money, but goods do not buy goods'. Taken to its logical conclusion this seemed to imply that there would be no employment in a barter economy, an idea plainly ridiculous. This idea about the unique importance of money has been firmly rejected by Hahn, who pointed out that any

non-reducible asset that people buy, such as land and Old Masters, is enough to upset Say's law. Money is important in Keynesian economics, but simply blaming all unemployment on it is not the answer. As Drazen has pointed out, Clower probably wishes he never wrote that paper. 11

The dual-decision hypothesis is at the centre of his work and it does have a considerable power. However in terms of its choice-theoretic structure, it is highly unsatisfactory. The constraint introduced does not allow for any cash balances and, as such, falls into the realm of ad hoc economics. If one accepts the dual-decision hypothesis, then an individual unable to obtain a job would demand nothing, this is surely incorrect as a model of individual behaviour. Clower is also extremely vague about whether the end-position is an equilibrium or not; I think it would be unreasonable to suppose that information would not travel eventually to start the market moving towards equilibrium.

Clower's work spawned a variety of other models, the most well known set being that which constitute fix-price theory. (He subsequently 'disowned' fix-price theory).¹² Fix-price theorists, many of whom are French, assume that prices are fixed in the short run (a la Hicks) and therefore it is highly unlikely that the economy will be in a Walrasian equilibrium position. Given these fixed prices, agents are likely to face constraints in any particular market and to be rationed in the quantity which they wish to buy or sell e.g. if prices are below equilibrium values on the goods market then consumers will be rationed on the quantity of goods they can buy. This is based upon the idea that the short side of the market is dominant and that no agent can be forced to buy more than s/he wishes to at the prevailing price; a not unreasonable assumption.

The microeconomic structure of fix-price models can be split into two main groups. The first, owing its origin to J.P. Bepassy, sees a consumer looking at one of N markets and perceiving $N-1$ constraints in the other markets, but ignoring any constraints s/he thinks may exist in the N th market. Given this, s/he then makes his/her offer in this N th market, and then moves on to the next market and repeats the process. This scheme allows the consumer to violate constraints in a market when s/he makes the offer in that market, and thus the scheme does allow for a theory of excess demand. Under some fairly standard assumptions an equilibrium, with less than full employment, can be proved to exist. The problem with this theory is that it does not appear to have a very rational way for an agent to behave. The consumer goes from market to market and forgets everything

s/he has done in the previous market. Thus the Benassy scheme is not a very convincing theory of consumer choice.

The other main theory, formulated by Dreze, is preferable in the sense that the consumer is behaving perfectly rationally. Here the consumer receives a market signal telling him/her of the constraints in all markets and s/he formulates his/her demands and supplies accordingly. Again, an equilibrium can be proved to exist at these fixed prices. However, this scheme has problems also, as no agent is allowed to violate their constraints. This means that there is no excess demand on any market, which hardly corresponds to a realistic portrayal of a market with rationing. Another problem is that there is no exchange of information in the process, which there really should be.

What of the contributions of fix-price theory in a wider sense? It has helped Keynesian economics in that rigorous modelling is employed for perhaps the first time, and there is an attempt, however unsatisfactory, to provide microfoundations to their models. There are some problems with describing them as Keynesian, as monetary policy works equally as well as fiscal policy in attempting to restore the economy to full employment level. The real problem with fix-price theory is that there is no justification for assuming prices to be fixed. Admittedly, they are only presumed fixed in the short run but, again, there is no comment on how short the short run actually is. This leads to a further problem in that their notion of equilibrium is highly dubious. Do the models imply that prices are actually fixed and that the equilibrium is a genuine state of rest or is there the implication that prices are moving but very, very slowly so that the whole process is really a disequilibrium process, and not an equilibrium at all? In fairness to fix-price theorists, it must be said that much of this is due to technical problems. We will return to this point later.

We have seen that Keynesian economics has run into considerable problems, notably in its inability to posit a reasonable price-adjustment mechanism. I personally believe that the vital question which has not yet been answered is how to accurately model the information and uncertainty problems which are at the centre of the Keynesian idea. Much of this failure is due to the obsession with attempting to provide a more 'general' theory, which encompasses the classical theory. This has meant that writers insist that the Keynesian model must include the limiting (and patently unrealistic) case of perfect competition, and this is definitionally impossible. For one of the assumptions

of the perfectly competitive system is that every agent is perfectly informed. But this is the very shortcoming of market systems that Keynesian economics is based upon. Axel Leijonhufvud's famous thesis is a good example of this. In chapter 2 he announces that Keynes' theory is a 'general' theory; he bases this upon Keynes reversing the speed of price and quantity adjustments which Marshall had taught. At first he literally pulls this assertion out of nowhere, but later he defends it by using 'job-search theory' as formulated by Alchian. This is a useful framework for analysis but since it is based upon a theory of incomplete information it cannot be instantly construed as a general theory.

If Keynesian economics is to have a future, then I agree it must deal with a specifically non-tatonnement situation where the auctioneer is not present. This means that some form of price-setting behaviour by firms must be explicitly used in models. To briefly give some examples, Negishi postulates fixed prices due to firms perceiving a kinked demand curve. Many of the French economists, such as Grandmont and Laroque, have given up fix-price theory and are using models with imperfectly competitive firms. Even with flexible prices, non-Walrasian situations may occur due to uncertainty about future interest rates; this is one of the main messages of Grandmont's book "Money and Value". I am not claiming that these models are perfect or constitute the full message of Keynesian economics. I do think that they are 'the way forward', so to speak, and that, at first, Keynesian economists will have to be content with less ambitious goals than providing an instant 'general theory'.

Before concluding, I wish to discuss some of the technical problems with Keynesian models. I think that ultimately, full price rigidity may have to be abandoned and thus there will be a need for a reasonable price adjustment equation. Unfortunately this will be very difficult to theoretically justify and is likely to create many technical problems in already complicated models. Indeed the technical difficulties associated with modelling Keynesian systems are, I believe, responsible for much of the downfall in Keynesian economics in the past decade or so. In support of this, I would like to quote Thomas Sargent, one of the foremost of the non-classical economists (and in my opinion, one of the few who is not ideologically motivated): "one reason in favour of the equilibrium models is that it solves lots of technical problems." 13.

Despite this I believe that purely because of technical problems Keynesian economics should not be abandoned. I think that market failure is a major problem that cannot be just ignored, and thus for economics to be a useful discipline it will always need to be able to explain, and hopefully correct, market failure.

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This book is a collection of essays on microfoundations. It is divided into two parts. The first part contains essays on the foundations of macroeconomics, and the second part contains essays on the foundations of microeconomics. The essays are written by leading economists and provide a comprehensive overview of the current state of research in these areas.

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