



OXFORD JOURNALS  
OXFORD UNIVERSITY PRESS

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Source: *The Economic Journal*, Jun., 1990, Vol. 100, No. 401 (Jun., 1990), pp. 539-549

Published by: Oxford University Press on behalf of the Royal Economic Society

Stable URL: <https://www.jstor.org/stable/2234139>

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## JOHN HICKS THE THEORIST

*Frank Hahn*

Hicks' contribution to economic theory deserves and surely will receive serious and extended scholarly assessment. The present essay written so soon after his death which, characteristically, came to him while completing a new book, does not provide this. It is written to evoke for the many for whom Hicks was a decisive influence the Hicksian spirit and approach. It will of course discuss some, but by no means all, of his contributions but these discussions will, in the nature of the case, not be exhaustive. The main aim is to remind us of what we owe to his work.

### I

We live in an age of American economics. (Hicks (1963) regarded 1946 as the 'eve of a great moment in American economics' and the start of its pre-eminence). When he began his career as theorist (he started economics in a very practical vein, Hicks (1963) pp. 305–6) it was still very much a British subject with a recognisable British tradition. The latter is hard to pin down precisely but it had certain distinctive characteristics: (1) The study of economics is not to be regarded as an end in itself. It lacks the beauty of mathematics or art or the possibilities for precision and prediction of physics. The main motive for its study must be the improvement of the condition of mankind. 'The complicated analysis which economists endeavour to carry through are not mere gymnastic. They are instruments for bettering human life'. Pigou (1928, vii). (2) While certain aspects of the subject require precision and rigour it does not lend itself to the formulation of a general 'system'. A good economist is a pragmatic economist. (3) Economic phenomena are only a part of the phenomena of importance to the study of society. While *ceteris paribus* concerning all the non-economic variables may often be legitimate, explanation and understanding is often impossible without a knowledge of the history, mores and social norms of the society concerned. It is the duty of the theorist who has arrived at a formal result to consider whether it is robust when applied to different societies and particularly when it is applied to his own society. (4) It is pretentious to use mathematics when words will do and it is equally pretentious to use 'highbrow' mathematics when more elementary methods will do almost as well. (5) As far as possible, (given (1)), the economist should attempt to communicate with the educated non-expert.

It seems to me that, except in one important particular, Hicks belongs to this tradition and that he was conscious of it. The exception is (1). He no doubt was interested in the amelioration of the 'human condition' but he seems to have felt strongly that the condition must be understood. Indeed it is this departure

from the tradition which appeals to many of us now. Reading Hicks always renews one's faith in the importance of economic theory as a means of understanding (and not necessarily of prediction). No one can doubt that he took this enterprise seriously. He returned to the same problems over and over again over many years because he brooded on them and became dissatisfied with his earlier answers.

On the other hand it must be admitted that other aspects of the tradition exacted a certain cost (as well as conferring benefits). Amongst the costs I would put Hick's relatively small box of mathematical tools. He plainly had considerable mathematical ability but he seemed disinclined to learn 'new tricks'. To some extent this cut him off from some new developments to which he could otherwise have contributed. Again he wrote: *A Revision of Demand Theory* (1956) of which he says: 'Those who rely on mathematical methods will not get much from the present approach which they could not get from the mathematical appendix to *Value and Capital* (p. v.)'. It is thus an example of (5) of the tradition. However it must be doubted that the non-mathematical reader would get very far with the 'translation' which is offered. The tradition also made him reluctant to read widely in the new technocratic literature. He read the 'great' like Samuelson, but judging by his references missed much that was relevant to him from the pen of the 'smaller fry'. These are genuine costs but they are happily vastly outweighed by the benefits of his work.

## II

Although it was not his first book it seems clear that reflections on Hicks' work should start with *Value and Capital* (1939). There can be few books which have had as much influence on the course of economic theory not only in the years which immediately followed its publication but to this day.

Although there were distinguished predecessors (e.g. Slutsky) and no doubt Hicks gained much from Roy Allen's early co-operation (Allen and Hicks), the exposition of consumer's choice in the first part of *Value and Capital* is a *tour de force*. Of course much work has followed and many refinements are now available, but in its essentials it stands like a rock. The argument is always clear and decisive. Hicks' forte of coining new terms plays an important expository rôle as one moves from income and substitution effects to the compensating and equivalent variations. Later this yielded new insights into consumer's surplus and the economic theory of index numbers. (Hicks, 1956). Even when he falters, as he does in his discussion of the convexity of indifference curves, the reader is learning. Of course there is nothing yet on duality and revealed preference. But one guesses that there are many economists not specialists in the theory of household choice for whom the *Value and Capital* account is all they know and all that they need to know.

But the real delight is the appendix. We no longer need bordered Hessians but to come across the analysis here presented in the forties was an exhilarating eye-opener. Most importantly is that the case for those sections of the appendix where Hicks used the theory of the individual agent to discuss certain problems

of the interaction of these agents. We learned for the first time the rôle of income effects and substitution effects in the analysis of the economy as a whole. It is true that Hicks' notion of stability was both stilted and, in the end, unsatisfactory. But it was not as flawed as Samuelson (1941, 1942) supposed (see McFadden, 1968; Hahn, 1988). It remains true that now it was possible to see how the Walrasian enterprise could be started from the 'bottom up', that is, from a well articulated micro-theory.

But of course *Value and Capital* contained much more than this. Perhaps the most lasting and important part is sequence analysis and the accompanying discussion of expectations. Even if we somehow convince ourselves that an economy is typically approximately in steady state with correct or rational expectations, it is hard to see that we can rest content before explaining why that should be so. Indeed it is a central question since Adam Smith how rational greedy agents could lead an economy to a coherent disposition of resources. On this matter we have not been served well by many American economists who often seem to take the evident need to simplify as an injunction not to ask awkward questions. They thus leave out of consideration a large part of the subject matter of economics. In any event Hicks knew what he was about here and indeed, over the years, repeatedly returned to the subject. (See Hicks, 1965; 1973; 1974; 1985). He had well known Swedish predecessors (in particular Lindahl) and he has had distinguished successors who adopt a period approach, (e.g. Grandmont, 1982; Radner, 1972). His period analysis in *Value and Capital* was the beginning of Hicksian dynamics but it was only in later writings that it emerged as a recognisable theory of a process. In *Value and Capital* the story stops at short period equilibrium. 'The temporary Equilibrium Model of *Value and Capital* is "quasistatic"'. (1965, p. 65). Nonetheless that sufficed to signal to the reader that both that equilibrium and the future would depend on expectations or, more accurately, on the manner in which expected values were derived from past experience. Reading this part of the book now one can see how it contained the seeds of what was to come later. Of course for a proper dynamics we want to pass from 'week' to 'week' and we need to decide on the way in which it is best to regard this time interval. One way is to suppose that prices decided on Monday cannot be altered until the following Monday – the 'Fix Price method' (1965). Here one is led to consider rationing and/or inventory changes during the week. Another is to suppose that trading in the week takes place at 'Grandmont short period equilibrium prices' – the method of 'Short Period Equilibrium' (1965). Here the expectations held on Monday need not be those of the previous Monday. This sort of analysis lends itself to an economics of mistakes and of their correction. It thus allows us to explain a situation in which agents make no systematic mistakes by the learning induced by past mistakes. It is good economics.

The reason why it is only now that attention is being given to this way of doing dynamics is that we have no axiomatic theory of learning. This invites the use of *ad hoc* learning rules and that is 'bad'. There is some evidence that Hicks was not immune to this foolishness. In *Capital and Growth* (1965) on page 183 he is pleased to 'emerge' from 'Growth Equilibrium' which has been

'fertile in the generation of classroom exercises'. By page 201 he excuses himself from studying investment behaviour and error adjustment on the ground that 'they would be no more than exercises'. It is hard to avoid the conclusion that in spite of his wisdom he here fell into the commonplace trap of regarding deductions from axioms as more 'real' than observation. What is bad about this is that it is logically indefensible in economics where, for instance, as he rightly notes Growth Equilibrium is just as much of an exercise as, say, adaptive expectation models. Economics is not physics and where our evidence is so poor and one is hard put to find *any* theory which we all agree that the evidence has refuted, we must use everything that is available – intuition, diverse observations, knowledge of the world together with a rigorous theory and good statistical inference. The idea that we have avoided *ad hoc* by the postulate of rational or correct expectations is absurd.

It is good to see that all of this confusion is coming to an end. Excellent work is appearing from the pens of Marcet and Sargent (1988), Grandmont (1988), Woodford (1988) and Evans (1989). As it proceeds it will be seen as a natural outgrowth of Hicks' sequence analysis. He knew all about the need for such work and indeed posed the right questions.

His own treatment of expectations was determined by what he felt he could handle. He noted that one might deal with the problem by considering the path 'that would be determined by correct expectations' (1973, page 56). He rejects this because he now wants to pass beyond steady state equilibrium. The theory which emerges with correct expectations 'is not a sequential theory of the kind we are here endeavouring to construct, past and future are all at one level' (1932, p. 56). He then opts for static expectations although, as usual, there are many warnings on the way. But that is a pretty poor piece of *ad hoc*ery. It meant that the analysis of the 'traverse' was never very convincing. My guess is that had Hicks disposed of more varied mathematical equipment he would have proceeded quite differently since it is plain, not only in this book (1973) but elsewhere, that he understood fully what needed doing but did not feel himself able to do it. This can be seen from the fact that he was most at home with the postulate of single-valued expectations although he shows full awareness that this is unsatisfactory and can be misleading (for instance, (1965), p. 71). He does discuss the propagation of random shocks in *The Trade Cycle* and later felt unhappy with the popularity of the 'elasticity of expectations'. But again and again he needed to invoke static expectations to get his models to work.

That there are many other important and influential parts of *Value and Capital* goes without saying. I reserve the 'Keynesian' parts and those dealing with money to the next section. But before I turn to that I must take explicit cognisance of Hicks' contribution in this book to the definition of income and the latter's relation to interest rates. The distinction between the receipts of any one date and an agent's income is central to an understanding of the agent's intertemporal disposition of resources and hence also to the agent's savings and portfolio decisions. Friedman (1957) magnificently combined the correct

income view with a properly based savings theory and produced much empirical evidence. But Hicks was a close predecessor.

On one matter however Hicks had comparatively little to say: imperfect competition. In *Value and Capital* he takes the 'Lucasian' view that it is too hard and untidy for incorporation in a model of an economy. Later he returns to it in *Capital and Growth* but only very informally. However he notes there that imperfect competition would entail the need for more than price expectations – there would also be demand expectations. An article on Excess Capacity (1954) is all that a quick search reveals of further work on this problem. In retrospect he was probably right – the time for considering these questions is only now approaching with the flowering of game-theoretic economics and much greater technical know-how.

In my view, although Hicks wrote many more books after *Value and Capital* and in doing so made numerous important contributions, *Value and Capital* remained his masterpiece. It is not clear that he would have agreed with this judgment. (See page v. of (1973)). He came to feel perhaps that the book was too Walrasian (or, if you like, Neo-classical) and that he had not come sufficiently to grips with either Monetary Theory or Process analysis. It will have been noticed that I indeed went to and fro between the later Hicks and the Hicks of *Value and Capital* when 'dynamics' was discussed. But that is because I hold the view that that book signalled, and not only to Hicks but to others, where the next advance was to be. It was clear to me and I am sure to many others when we had fully absorbed it that *Value and Capital* pointed in the direction of research and thought on sequence analysis and, in particular, on expectations. We saw some of the flaws but rightly regarded them as minor and inevitable at that stage. By its grand structure, by its many novelties, and by its wonderful style it had and has the marks of a true classic.

### III

Hicks was an early Keynesian and, as we know, his first understanding of what that entailed became the understanding of most of us. ('Mr Keynes and the Classics', (1937)). The famous diagram is of a distilled general equilibrium model but with fixed prices and no explicit future. He wrote (concerning this paper), 'I have never regarded it as complete in itself. In fact only two years later in *Value and Capital* (1939), I myself put forward what is surely a very different formulation' (*The Crisis in Keynesian Economics* (1974), pp. 6–7). And so he did but by then it was too late. The IS–LM construction was too seductively simple to be abandoned by the many who encountered it either directly or in textbooks. It is not clear that that was an altogether bad thing. As Solow notes (1984), most economists to this day when considering some macro-problem take Hicks' construction as a first step into the inevitable complexities. It helps to provide a rudimentary framework for thought and is not dangerous to the economist with a proper grasp of economic theory not least of *Value and Capital*. But it does have its dangers, not least to the critics of

Keynes. Just as so many critics of Neo-classical theory took the textbook production function in labour and capital as the paradigm of that theory, so many modern anti-Keynesians consider that Keynes' thought is fully encapsulated in Hicks' famous paper. One supposes that it is not possible to be protected from the intellectually lazy.

In *Value and Capital* as well as in *The Crisis in Keynesian Economics* Hicks shows that Keynes is to be taken as concerned with short period equilibrium and short period processes. It was only in perhaps his least successful book, (*A Contribution to the Theory of the Trade Cycle*), where he introduced the 'supermultiplier' that he extended Keynesian analysis to the long run. But here the process of stock adjustment and its potentially cyclical consequences is given prominence – the steady state was there in the analysis mainly to demonstrate that the economy would not easily get to it. However, except for wages, Hicks did not succeed in combining quantity and price adjustments into a complete theory (but then, so far, no one has done so).

The famous 'Mr Keynes and the Classics' must be understood in this context. The diagram represents a short period and not long run equilibrium. There is no formal articulation of expectational and price assumptions. But it is obvious that we are to think of inelastic expectations and of a regime where average prime costs are almost constant – the 'economics of depression'. Money wages are taken as given as they ought to be in short period analysis. But one can relax all of these assumptions and still have some use for the diagram. For it can be considered as a projection from an eight dimensional to a two dimensional space. The eight dimensions are current and expected values of interest, income, price and wage. Indeed it is helpful to think of it in that way before adding further dimensions for the capital stock and perhaps inventories. Proceeding in this way we illustrate by the point we choose to project, how we interpret Keynesian short period equilibrium.

But one thing we should not do is to choose that representation which gives a steady state equilibrium. Keynes is not about that and Hicks knew it. That is why much recent criticism of Keynes is so baffling. In essence it consists of showing that Keynes does not apply in steady state equilibrium. This is like attacking a cobbler for not being a tailor on the unexplained hypothesis that no-one needs shoes. But we do need to know how and if steady state comes about.

Hicks in 1932 (*Theory of Wages*) started more or less where the 'new' macro-economics is now, although in that book he was concerned with stationary states and correct foresight rather than with steady state growth and rational expectations. He wrote the book, he says, under the influence of the powerful L.S.E. economists of the time, especially Robbins and Hayek. But 'Within months of publication of my *Wages* book I was writing papers which diverged from the regular L.S.E. line; and by the end of 1934 when my ideas were more formed, I was publishing things which were recognised by Keynes (in correspondence) as being more on his side than on the other'. (1974, p. 5). The 1962 edition of this book gives an extensive discussion of his change of view and takes his earlier self to task. Here are examples: 'It was nonsense to maintain

that the unemployment of 1932 was in any sense *caused* by excessively high wages...the movement in real wages during the Great Depression ought clearly to have treated...as an effect and not as a cause' (p. 313). He proceeds however to note that in the post war era rising real wages may have been an independent influence on the working of the economy. Later he remarks that while much of what he said in 1932 concerning stationary states remained valid for growth equilibrium '...I do not much care for the approach myself' (p. 314). The labour market he regards as '...very special kind of market, a market which is likely to develop "social" as well as economic aspects' (p. 317). A reason for this is that the relation of employer to employee 'will be a continuing relation' (p. 317). And so on. By 1962 Hicks, one might say, had fully absorbed the lessons of *Value and Capital*! The neo-classical steady state may provide a jumping off ground for the analysis of certain important features of an economy, but it cannot help much with the old and central question of economics of how decentralised economies may or may not deliver what Adam Smith claimed for them. Hicks struggled with this problem throughout his life and he deserves to be honoured on that account alone.

He also continued to struggle with *The General Theory* which he recognised to be theoretically incomplete. Reading Myrdal's *Monetary Equilibrium* and talking to Lindahl had already in 1935 led him to some anticipations of Keynes' book and of *Value and Capital* ('Wages and Interest: The Dynamic Problem' (1935)). He came to see that the crucial issues turned on the working of the labour market, on the rôle of money and on expectation formation. On the first of these he was by 1962 quite clear: the market for labour cannot be treated like the market for commodities. I have already quoted a number of his remarks in support of that contention. But it is in any case difficult to see how anyone living in the world can deny it. The idea of wages moving so as instantaneously to clear labour markets is recognised as absurd as it by now should be to others, and he expounded it with all the required refinements. Since he was always aware of the need for process analysis he understood why the expectational assumptions were crucial to the advocates of flexible wages.

Monetary theory also occupied him throughout his life. His 'A Suggestion for Simplifying the Theory of Money' (1935) quickly became famous but did not dig very deeply into the nature of the services money performed. This failing was repaired in his later work, perhaps most satisfactorily in the second lecture in *The Crisis in Keynesian Economics* although it was preceded in some penetrating analysis in the *Two Triads in Critical Essays* (1967). In *The Crisis* lecture he is particularly interesting on liquidity: '...liquidity is not a property of a single choice; it is a matter of a sequence of choices, a related sequence' (p. 38). He goes on: 'So it is not sufficient, in liquidity theory to make a single dichotomy between the known and the unknown. There is a further category, of things which are unknown now, but will become known in time' (p. 39). After that the analysis proceeds in masterly fashion. It has since been followed by others (e.g. Jones and Ostroy, 1984; Hahn, 1989) in a more formal, and less accessible, manner. Hicks never mentions 'conditional probabilities' for instance, but is plainly using the concept. He does not engage in dynamic



programming in a stochastic environment with transaction costs but reports the commonsense results such a programme would yield. In short, this is a virtuoso display in what I called the British tradition. It also makes extremely important points: the rôle of liquidity (flexibility) in the responsiveness of investment to interest rates, the usefulness of a distinction between 'auto-finance' and 'overdraft finance' of businesses when studying monetary policy and the rôle of the banking system in the latter under both kinds of business finance. This essay has opened up a new and important field for investigation. For instance, to mention only one, the explanation for good, i.e. almost perfect, and very imperfect or 'closed' markets and the welfare implications of this. These questions turn very much on liquidity in Hicks' sense as can be seen by the splendid work of Diamond (1984).

As far as Keynesian monetary analysis was concerned Hicks seems to have preferred the *Treatise*. He thought that Keynes in the *General Theory* had overplayed the speculative motive (although he agrees that this motive can frustrate monetary policy as it did in the United Kingdom immediately after the war). He also considered Keynes to have been at fault in not stressing the virtue of liquidity in times of inflationary pressure, although he recognises that that was understandable in the early thirties. On the whole one gains the impression that Hicks did not regard a policy of stimulating investment by lower interest rates as very promising, particularly when times were already 'bad'. On the quantity equation and on 'Monetarism' he has no systematically expounded theory. But he had completed a book on monetary theory just before his death and I have not yet seen it. My guess is that he would have regarded any mechanical monetarist exercise with scepticism.

In any case it was clear to him that Keynes' own theory did not exclude the possibility of full blown monetarist doctrines. It was also clear to Keynes (*How to Pay for the War*). What however both contended, in my view correctly, is that the relation between the money stock and the price and money wage level depended on the state of the economy. In other words the  $T$  in  $MV = PT$  cannot always be held to be given by its steady state value and indeed it is not clear that it can ever be properly so taken. Nor can  $V$  be taken as a constant partly for the reasons Hicks gives in his discussion of liquidity preference but also because innovations in transaction and insurance technologies occur and change it. It does not reflect well on us that there has been so much argument here on the wrong issues. We should have agreed at the outset that the disagreements concerned the *ad hoc* assumption that economies are typically in, or rapidly converge to, a unique steady state equilibrium (in which of course all markets clear at rationally expected prices).

On the more highly theoretical aspects of monetary theory Hicks wrote little or not at all. He attempted a theoretical history (1969) of the origin of money which contains much good sense. But he never, in any of his writings, provided a *Value and Capital*-like 'appendix' in which monetary and Walrasian General Equilibrium Theory were fully integrated. As far as I know, the work of Arrow-Debreu never tempted him to speculate on 'existence' problems for monetary economies or to consider how monetary phenomena were related to 'missing

markets'. He accepted the sequential structure of markets as obvious fact and not in need of explanation. The British tradition once again! Whether it is here to be censured or not I cannot decide.

His difficulties with expectations I have already discussed. Like Keynes, he recognised how the present hung upon the expected future and this is the important insight. Lindahl and other Swedes were there before either of them but it is perhaps Hicks who made the most sustained attempt to impose orderly thinking.

#### IV

In the sixties and seventies Hicks was naturally affected by what was happening in growth and capital theory. He wrote *Growth and Capital* (1965) and *Capital and Time* (1973) and a number of articles. This is a part of Hicks' work I do not propose to discuss in detail. This is only partly due to the fact that the time allotted to me for this piece does not permit the extensive re-reading required. The other reason is that while, as usual, I have admired what he had to say, I have done so less on this topic than on the many others which he made his own.

The capital and growth books seem often to have been written with the aim of clearing his own mind. They are none the worse for that. But his difficulties were not always those of his typical reader and the pace is often somewhat slow. I do not think that here he ever gave us as authoritative and definitive account of capital theory as that provided by Bliss (1975). McKenzie (1963) and Radner (1961) had a more secure understanding of the turnpike. Debreu (1960), Gorman (1968) and Koopmans (1960) had a deeper insight into intertemporal utility questions. The fact is that many topics here are technical and that Hicks' comparative advantage was in a more informal mixture of technicalities and economics. Of course his work was distinguished, the exposition often masterly, but it was, at least in my judgment, not Hicks at his most formidable and innovative.

When I reviewed *Capital and Growth* I was enthusiastic about its expositional merits and praised its insights. I noted 'the clarity of exposition, the lucidity of thought and the transmutation of matters of high technique into ordinary language'. But I also drew attention to the absence of references and to a lack of 'many novel conclusions'. Looking back now I think it must be judged as an excellent text for its time. The Hicks of *Value and Capital* was stirring but does not truly emerge. He had his hands full with assimilating largely technical stuff into the British tradition as well as looking over his shoulder at what Robinson, Kaldor *et al.* were saying.

One can detect a renewed interest in growth theory now but one which is more concerned with making much that was taken as exogenous in the past as a proper subject for economic explanation. Arrow and Kaldor were bolder than Hicks in these matters. As for capital theory, I shall perhaps unwisely claim that it is now settled. It is pre-eminently a subject fit for mathematical treatment. For instance the possibility of perfect aggregation must be, and has been, settled mathematically (Gorman, 1968). Double switching, the average

period of production and the meaning, if any, of the return to abstinence are all matters which can be put precisely and understood with a little mathematics. Here literary treatments or treatments by arithmetical example etc. have led to much unnecessary noise. Hicks, as far as I can ascertain, never mentions Malinvaud's famous paper (1953). But that is where modern capital theory starts.

## V

Not everything that Hicks wrote can be judged of fundamental importance, but he wrote more that can be so judged than is given to most scholars. *Value and Capital* is the crown of his achievement, but his work in monetary theory and on Keynesian matters are of the highest order. A time may come when his citation index becomes small, but only because so much of what he wrote will have become identified with the subject of economics itself.

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*Date of receipt of final typescript December 1989*

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