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# A STRUGGLE TO ESCAPE: EQUILIBRIUM IN THE GENERAL THEORY

UDK 330.1KEYNES(063)=20

For Keynes the composition of The General Theory was 'a long struggle of escape...from habitual modes of thought and expression' (CW VII, p. viii). He invites his readers to join him in that struggle. All the evidence, however, is that our minds are 'so filled with contrary thoughts and notions' that we 'cannot catch the clues' Keynes was 'trying to throw' us (CW XIII, p. 470). If it was a struggle to escape from habitual modes of thought in 1936, it is so much worse now, when contemporary habits of thought are even further from Keynes's conception than the habits of Keynes's predecessors, and they have become strictly codified and are vigorously defended as the only correct way to think. The present paper examines the role of equilibrium in "The General Theory, the background against which Keynes was writing, and some of the interpretations of equilibrium current today.

Some interpreters of Keynes would think the examination of equilibrium not worthwhile; they argue that equilibrium is a neoclassical concept not worth considering in post-Keynesian circles, and their recommendation is to jettison any consideration of the concept. I still believe that equilibrium serves two purposes in Keynes's General Theory: first, it is an organising principle, and second, it served a didactic purpose in demonstrating that involuntary unemployment could persist, there being no endogenous forces leading to its elimination.

As Kregel (1983) has reminded us, equilibrium was not a central concept in classical economics. They had, however, a concept of a stationary state where the system replicates itself. It is

therefore a position of rest of a systemic kind, which today might be called equilibrium. The marginalist evolution, by concentrating so heavily on supply and demand analysis, both elevated equilibrium to a new prominence in economic method and restricted its usage to the equality of supply and demand. The marginalist method reduced economic analysis to the analysis of separate markets whose interaction was limited to the effect of price on incomes and where real income was the overall budget constraint. Since supply and demand each represented situations of optimisation, firms' maximisation of profit and individuals' maximisation of utility, this equilibrium, today known also as market clearing, is simultaneously a position of optimal choice. Here is Hicks on the subject (1965, p. 23): 23):

There is an equilibrium when all individuals are choosing the quantities, to produce and consume, which they prefer. To a conception of equilibrium that is of this type we must hold fast.

Matters became much worse with the mathematisation of economics. This formalised the treatment of the system as the sum economics. This formalised the treatment of the system as the sum of a series of markets each described by a demand function and a supply function; equilibrium was equality of supply and demand in each market and therefore for the system as a whole. If the equations are static, they admit of only one solution, if the equations are well behaved. There is no other set of values for which the specified system is internally consistent. Therefore it not only is the solution set regarded as the equilibrium, and that equilibrium must ensure co-ordination of plans which represent optimal choices, but there can be no meaning to disequilibrium in such a system such a system.

As Vercelli (1991) has pointed out, this concept of equilibrium, though in macroeconomics the dominant concept, is vacuous. Equilibrium can only have a meaning in a dynamic system, where disequilibrium is possible. The conflict between the concept of equilibrium as a solution of a set of static equations and Keynes's conception may be the root source of the difficulty of understanding Keynes today. All of us have read interpretations of Keynes which flatly state that unemployment equilibrium is an impossibility or an illogicality and that, rather, The General Theory should be interpreted as a theory of unemployment disequilibrium, possibly

adding the idea that adjustment to equilibrium is quite slow (Leijonhufvud 1968). Part of the job of Keynesian restoration, therefore, must be the rehabilitation of Keynes's dynamic system and his concepts of equilibrium within that system.

Keynes, by contrast to modern conceptions, has a very fluid concept of equilibrium in his earlier writing. In the "Revision of the Treaty• (CW III) he speaks of the internal purchasing power of the mark being twice its value abroad and therefore not in equilibrium (p. 53), the equilibrium of our economic life (p. 63), the disturbance of the equilibrium of our industry (p.109), the equilibrium of international trade (p. 114), the communities of Europe settling down to a new equilibrium (p. 116), and (p. 124) the equilibrium of commerce. It is clear in these passages that equilibrium is being conceived as a position of some kind of rest or stability, but there is no further methodological significance to the use of the word. It is interesting and instructive that today we would not speak of the equilibrium of international trade but rather of international balance, reserving the term 'equilibrium' for something more specific. In the <u>Tract on Monetary Reform</u> (CW IV) there are only two mentions of equilibrium, one (p. 66) referring to the equilibrium price corresponding to the quantity of money, and the other (p. 71) specifying that in equilibrium the internal and external purchasing power of money must be the same.

It is only in <u>A Treatise on Money</u> (CW V and VI) that equilibrium asmethodological problem finds a voice. And it is a very important voice, for in sharp contrast to modern usage, Keynes does not look to equilibrium to provide solution values for his model but rather, his 'purpose has been to find a method which is useful in describing, not merely the characteristics of static equilibrium but also those of disequilibrium, and to discover the dynamical laws governing the passage of a monetary system from one position of equilibrium to another' (p. xvii). Again, on page 120:

the fundamental problem of monetary theory is not merely to establish identities or statical equations relating (e.g.) the turnover of monetary instruments to the turnover of things traded for money. The real task of such a theory is to treat the problem dynamically, analysing the different elements involved, in such a manner as to exhibit the causal process by

which the price level is determined, and the method of transition from one position of equilibrium to another.

Although elsewhere in the book (eg. pp. 66, 145-49, 165, 191-3, 311, 315, 320) he reverts to using equilibrium to mean internal balance, these other statements clearly have external methodological significance. In the context of modern economics their significance is even greater than to his predecessors, for he plainly recognises the need for equilibrium to be embedded in a dynamic theory and for that theory to be able to explain the transition as well as the end points.

From this point of view, some believe The General Theory to be a retrograde step, seeing it as a return to statics after the dynamics of the Treatise (eg Gilbert 1982). But I shall argue that this is a misperception; The General Theory begins with a theory which has been described as static by one of Keynes's most astute interpreters (Kregel 1976), but even that model, I shall argue, is dynamic in its underlying structure. Indeed, without the role of time, the problem of uncertainty, understood by all close followers of Keynes to be fundamental to The General Theory, has no meaning.

New definitions appear in The General Theory (CW VII): equilibrium prices (p. 64), equilibrium of the rate of interest (pp. 180, 198©201) and the equilibrium of the economy as a whole. We shall argue that different concepts of equilibrium apply to different individual markets and the different aggregate models within The General Theory.

Kregel (1976) has taught us that there are three models in The General Theory. He calls these the static model, the stationary model and the shifting model. These are distinguished by the relation of short-run and long-run expectations and the relations of actual outcomes: in the static model short-period expectations expectations are met, in the stationary model short-period expectations are not necessarily met but they do not affect longmodel period expectations, and in shifting equilibrium long-period expectations too may vary. There is another way of classifying the models in The General Theory: there is a short-period model which takes investment as given and therefore ignores monetary factors (Chapters 3 and 5), the full short-period model (Chapters 8-15 and 18-21), and an exploration of the long-run consequences of capital accumulation (Chapter 17). Each of these has its own equilibrium. We shall use this taxonomy and show how it relates to Kregel's.

## THE TRUNCATED SHORT-PERIOD MODEL

The model of Chapters 3 and 5 is meant to introduce the reader to the basic idea of <u>The General Theory</u>. In Chapter 3, expectations of aggregate demand are taken to be met; this is the model Kregel calls static; we shall see below the sense in which this description is accurate. The underlying system which describes the process of determining output and employment is far from static. The action takes place in what Keynes called a production period, in which the output strategy decided at the beginning is unchanged until the output is ready for market sale at the end. Merely to speak of a beginning and an end precludes the idea that this model is static in the modern sense; rather, events are perceived as preceding through time, at different paces in different industries and overlapping in the timing of their beginnings and ends.

Let us take one such production period as typical. For The General Theory as a whole the capital stock and state of technology are taken as given for the purposes of determining production. A wage bargain is struck at the beginning of the period; this bargain begins with last period's wage, and wages may rise if last period entrepreneurs fail to get the workers they required. The wage having been settled firms will know their cost function for any level of output and be able, on the basis of their expectation of demand, to decide the optimum pricing and quantity strategy. This they do despite the fact that in the mathematical sections of The General Theory it is clear that Keynes uses the small firm as typical. The optimum quantity (optimum given expectations) will then determine the volume of employment. The period proceeds with workers producing output. The output is sold at the end of the period, and by assumption the output is sold at the prices which the firms anticipated. Expectations of sales and profits are met and the decisions made last period will be repeated next period. This is equilibrium.

It can be seen that in this model the criterion of equilibrium is in fact the replication of the system so long as the system is not disturbed by some exogenous force. It is clear from quotations offered earlier that Keynes considered equilibrium to be a position of balance or rest. In the case of The General Theory the emphasis on expectations - to the extent that Hicks (1937) regarded Keynes's main contribution what he called 'the method of expectations' immediately suggests that the fulfilment of expectations sufficient criterion to indicate the existence of equilibrium, for there is then no incentive to change behaviour. The position of 'rest' is a stationary state, a system which moves through time but in an unchanging pattern. The model of Chapter 3 assumes the fulfilment of expectations. It is, therefore, static in that it allows nothing but equilibrium positions, yet it derives from a dynamic system; it is therefore quite unlike the static representation which we all know as IS-LM.

In the Chapter 5 model, which Kregel calls the stationary model, expectations are allowed to be falsified, in order to make the point that it is expectations, not their realisation, which determines output and employment:

The actually realised results of the production and sale of output will only be relevant to employment in so far as they cause a modification of subsequent expectations. (CW VII p. 47.)

As Kregel (1992) has emphasised however, what economists find so difficult to accept is that the expectations concerned are only those of producers; whether workers expected the real wage they actually received is neither here nor there. Indeed Harrod (1935) was provoked to caution Keynes:

The effectiveness of your work...is diminished if you try to eradicate very deep-rooted habits of thought unnecessarily. One of these is the supply and demand analysis. It is doing great violence to (the) fundamental groundwork of thought [to assert that] two independent demand and supply functions won't jointly determine price and quantity. (CW XIII, pp 533-4.)

On the face of it this is odd, because the analysis is based on supply and demand, for output at the aggregate level. The problem arises when that analysis is used to derive the conclusion that employment is determined only by firms' demand for labour and the

only importance of a supply-of-labour curve is to indicate the maximum employment available at any given wage. The difference from established analysis (established then and now) is that in The General Theory it is recognised that the parties are unequal: the expectations of producers matter because they are in a position to make, and alter, offers of employment, whereas

whilst labour is always in a position to refuse to work on a scale involving a real wage which is less than the marginal disutility of that amount of employment, it is not in a position to insist on being offered work on a scale involving a real wage which is not greater than the marginal disutility of that amount of employment.(CW VII p. 291.)

The position of rest thus is defined not only by a lack of incentive or desire for change but also by the power to effect change. Their lack of power to insist on employment or to change the real wage explains why workers only have an influence events as consumers, not as workers, as long as producers can get as much labour as they want. Only when there is a shortage of labour are the preferences of workers effective. The model stationary because there is no change in the volume of investment and therefore of demand. It can be viewed as the model which encompasses the Chapter 3 model as a special case: the case of equilibrium.

Since Chapter 5 deals with disequilibrium, it might be expected to discuss the process of adjustment to the equilibrium described in Chapter 3. It does not. Rather, Chapter 5 is devoted to showing that aggregate supply and firms' expectations of demand determine output and employment whether in equilibrium or not.

Only later (1937, CW XIV, p. 182) does Keynes answer critics expecting discussion of a mechanism of adjustment. He protests that he is not interested in the 'higgling process' by which entrepreneurs try to discover the position of demand. It is natural to expect producers to learn on the basis of disappointed expectations, but

when one is dealing with aggregates, aggregate effective demand at tim A has no corresponding aggregate income at time B. All one can compare is the expected and actual income resulting to an entrepreneur from a particular decision.

(Keynes, Ex post and ex ante, notes for 1937 lectures, CW XIV p 180.

In Chapter 3 this problem was fudged, because equality of expectations and outcomes was set by assumption; therefore it could apply universally. But it would be unrealistic to understand equilibrium as the fulfilment of every producer's expectations in real life. Thus the representation of equilibrium as fulfilment of expectations of aggregate demand must be understood as a rough approximation, not a precise statement. There will be some producers who will change their behaviour, even when the aggregate of expectations are met. Tonveronachi (1992) makes a further point:

In principle a significant dispersion of expectations among agents is necessary if we want to retain uncertainty in a significant way. A definition of market equilibrium which requires the fulfilment of all individual expectations cannot deal with this concept of uncertainty. We can then either abandon market equilibrium or render it coherent with uncertainty. (p. 25)

Keynes's dismissal of 'higgling' was perhaps tactical, for even in those less formalistic times, the lack of precise correspondence between a market outcome and subsequent behaviour would have attracted criticism. But it is easily seen that there is no way of improving the precision without the loss of something more important.

## THE FULL SHORT-PERIOD MODEL

The model of the bulk of the rest of the book `endogenises' the truncated model's exogenous variable: investment. This entails also bringing in money in its role as an asset, in order to determine the rate of interest. The dynamic structure of the model is greatly complicated thereby, although the Chapter 3 and 5 model remains the core. The ability of the level of investment to change means that equilibrium in this model may change: it is not stationary. Nevertheless only a subset of possible causes of change in the level of investment conform to Kregel's 'shifting model': those due to a change in long-period expectations. There are other reasons for investment to change, notably a change in the rate of

interest, but these are by now endogenous. Long-period expectations remain unexplained and hence exogenous.

Let us in fact start exploring this model with the rate of interest, for that is where the dynamic structure begins. As is well known, the rate of interest is determined, in The General Theory, by liquidity preference and the supply of money. Liquidity preference includes the three famous motives: transactions, precaution and speculation. These motives have different time horizons, the shortest of which is speculation; speculators can change their expectations of the market for financial assets, and act on those expectations, with great rapidity. The other two motives are assumed to react in a stable fashion to changes in aggregate income, which by definition changes rather slowly (because production and sale are time-consuming processes). Two conclusions follow: first, the expectations of speculators at any given time dominate the determination of the rate of interest; second, the rate of interest so determined will inevitably alter as the investment changes in response to the rate of interest. What does not follow is that the investment previously decided on will be altered in response to the change in the rate of interest, this because the investing entrepreneurs will have contracted their debt toward the beginning of their investment project.

There is a concept of equilibrium relevant to the rate of interest itself: the rate of interest is stable when there is a balance between the demands and supplies of securities on the part of 'bulls' and 'bears'. This difference of view strikes a neoclassical economist as deeply peculiar, for in their way of thinking there is always only one rational 'choice'. The only possible reasons for divergent expectations are irrationality or ignorance. This unease with Keynes's conception was a key criticism in Tobin's now famous reformulation (1959). But not only is a difference of view a perfectly reasonable outcome under uncertainty (which Tobin transformed into probabilistic risk), but such differences absolutely necessary if there is to be a market in existing securities at tolerably stable prices.

The rate of interest so determined then in turn, along with long-period expectations and the supply price of capital, determines the volume of investment. Once this is determined, surprises in short-period demand are, by construction, not allowed to affect the

investment decision; the long time horizon of investment is not to be disturbed by more immediate, and perhaps transitory, changes.

Once investment is determined, actual aggregate demand will be determined by the expectations of entrepreneurs, through their decision to hire and produce, and the marginal propensity to consume. The story goes through as for the truncated model, with one troublesome exception: we must revisit the money market. (Messori has the nice term 'monetary retrodiction' for this process.) Recall that in our dynamic story the rate of interest was determined by speculators, the level of income having been taken as given at 'yesterday's' level. Now to establish equilibrium, either we must return to yesterday's level of income or a change in transactions and precautionary demand must be compensated by a change in the rate of interest. This sounds incompatible with equilibrium, but it is not. The rate of interest has already done its work in determining the level of investment, and all we are interested in here is the existence of an equilibrium, not the approach to it. The rate of interest is free to take whatever value is now necessary to give us that equilibrium.

This description may feel uncomfortable. If so, it only reflects the fact that full short-period equilibrium in The General Theory shares the property of all static equilibrium, that one cannot get into them; one can only be in them, from the Fall of Adam (Robinson 1978). The difference between this description and, say, equilibrium of supply and demand, is that here the difficulty is transparent, not least because we have started with a dynamic story. There is no way to win, really: either static equilibrium is not part of a dynamic story and is therefore vacuous, or the derivation of a static equilibrium from a dynamic story has a certain unreal quality about it. This is not our problem; it is in the nature of the beast.

The transparency of the difficulty in <u>The General Theory</u> can be put to advantage, for it reinforces the idea of equilibrium as an organising device while preventing us from taking it too seriously, certainly from seeing it as the only coherent position of the system.

The novelty of the full short-period model (in terms of its equilibrium properties) is that the mode of adjustment to a new equilibrium is discussed: it is the multiplier. This to has static and dynamic aspects: the `logical theory of the multiplier', which is

static, and the process analysis which spells out the approach to a new position of rest. Let us look again at monetary retrodiction in the light of the multiplier. First, if the change in investment is viewed as a single change (and this can always be done, with a suitable choice of length of time), we know from innumerable textbook accounts that income will return to its original level after being elevated for a time. This is exactly what our equilibrium requires. Second, we also know that the rate of interest is certain to change during this process, though Keynes did not elaborate the point. Within the terms of Keynes's model there is no particular reason to think that it will not revert to something close to its original level by the end of the process as income also reverts except for the important fact, not acknowledged until after The General Theory was published and only just beginning to be incorporated in our understanding - that the money supply changes along with investment. The extent to which that causes a problem depends on the extent to which the investment is funded by the time the multipler has worked its way through; by the end of a 'one-shot' investment process, the money supply is likely revert to somewhere near its previous level (Chick 1996).

Far from being, as Leijonhufvud (1968) has described it, a 'deviation amplifying' device, the multiplier is the adjustment mechanism following a change in the level of investment. It is when it has played itself out that we have full short-period equilibrium.

# THE RICARDIAN LONG PERIOD AND CHAPTER 17

We now enter into one of the most vexed areas of Keynesian exegesis: whether there is a long-period equilibrium in <u>The General Theory</u>. Here again a mismatch may be discerned between the concepts in readers' minds and the mind-set of Keynes - indeed this is an area where the priors are particularly strong. The main protagonists this time are not the neoclassics but those who take their inspiration from the classical economists, <sup>1</sup> especially Ricardo,

It is an extraordinary feature of Keynes that he conforms to and satisfies neither school of thought; in the history of economic theory he stands virtually alone. Some would probably argue, if they realised this was the case, that this fact alone was sufficient to discredit his views

eg Caravale 1992, the contributors to Eatwell and Milgate 1983, especially Garegnani 1976. The Ricardian criterion is expressed thus by Sebastiani (1992b, p. 61): long-period 'positions' (a looser word than equilibrium but with similar connotations) are 'situations of a full adjustment to forces deemed fundamental, systematic and dominant'.

To oppose the significance of such a position is virtually impossible: the dual is trivial, random and weak forces; who can support their study in preference?! The rhetoric of this school is as brilliant as their notion of long run is incoherent. It has nothing to do with time but is always present, as a centre of gravitation toward which the economy is always tending (though no adjustment mechanism is proposed), and the 'fundamental, systematic and dominant' forces are 'deemed', not placed in that position by sustained, reasonable argument. The equality of rates of return on capital is the dominant force, by tradition and, it would seem, only by tradition. Why single this factor out? why not the urge of labour to obtain employment in order to live and reproduce, rather than the urge of 'capital' to reproduce itself? This choice is never defended.

The classical long period has nothing to do with time, but there are affinities with Marshall's on the whole radically different classification. Marshall's long period considers what will happen when the capital stock is taken out of the pound of ceteris paribus and allowed to change. It is recognised, without being incorporated in the analysis, that capital accumulation takes even more time than production. It is through change in the capital stock that returns are equalised. And this aspect is addressed, albeit briefly, in The General Theory, in Chapter 17. In this chapter Keynes explores only one question in the context of the long period in this shared sense: what is likely to be the result of sustained capital accumulation? Will the end point be a position of full employment or not?

To do this Keynes takes the concept of own-rates of interest from Sraffa (1932). He provides two definitions of own-rates: actual rates can be inferred from spot and forward rates where these exist and the 'cause' of rates of return has four elements, q, c, l and a: return, carrying cost, liquidity premium and expected appreciation of the asset. Keynes then argues that the result of capital accumulation is progressively to lower the rate of return on capital, but that the rate of return on money provides a floor to the fall in that rate of return. The rate of return on money is dominated by the liquidity premium it commands. The result of the competition between money and productive capital may prevent the rate of interest from falling to the level which will give full employment. Thus the 'equilibrium' as defined in Chapter 17 is only partial: if accumulation is stopped before full employment is reached, the level of income will fall to the point where the level of intended saving is no greater than the level of investment, inhibited by a rate of interest which is 'too high' - too high, that is, to give full employment.

Since the equi-profit condition is sustained, this exploration ought to satisfy the neoRicardians, but it does not. It is not clear why. Perhaps a neoclassical element has crept in<sup>2</sup> which asserts that there is always full employment in the long run, and Keynes gives the wrong answer'. Perhaps the problem is that Keynes's answer depends on the unique properties of money, which would has no serious place in the Ricardian system.

There are other objections: Potestio (1986) maintains that the long period must be a position of no uncertainty, and thus Chapter 17, especially its monetary theory, is inconsistent with the rest of The General Theory:

There are no possibilities for a unitary consideration of The General Theory ... The two blocks of analysis corresponding to Chapters 1-15 on the one hand and to Chapter 17 on the other express radically different approaches: the method of expectations and eventually of short period equilibrium is incompatible with the method of stationary long period equilibrium. (p. 386.)

Similarly Hansson (1985) wonders whether it is 'really possible for liquidity preference to exist in such a tranquil situation [as the

Ricardo's system was devised when Britain was a mainly agricultural country, with an underdeveloped capitalism. The distinguishing feature of underdeveloped countries is that there is insufficient capital to employ all the labour. Therefore žnormal capacity' is compatible with underemployment. But not so in a developed capitalist economy, where full employment of labour can be expected even before normal capacity is reached.

long period]' (p 326); Potestio makes a similar point in a later article (1989), that Chapter 17 cannot support the same monetary theory as the rest of the book.

I find their allegations of incompatibility difficult to entertain. I believe they are carrying over from the classical view of the long period baggage which Keynes had dropped but did not signal. The difficulties they point to can be resolved by looking at the matter from the other direction. They argue that since the long period must (because it always has) entail tranquility and perfect knowledge, it therefore cannot be compatible with liquidity preference. Let us turn the argument around: since Keynes's long period had an important role for liquidity preference, and liquidity preference can only play a role in the presence of uncertainty, we an infer that uncertainty plays a role in Keynes's long period. Therefore Keynes's long period must be different from the traditional concept of the long period.

If anything, Keynes always maintained that the long run was more uncertain than the short, and that while it was unreasonable to assume (in Chapter 3) that short©period expectations are met, such an assumption was never suitable for long©period expectations. These expectations are fundamental to the rates of return which are at the centre of Chapter 17. it seems to me unlikely that Keynes's long period would abandon the uncertainty which is fundamental to the whole enterprise of The General Theory.

Tonveronachi (1992) maintains that the two definitions of own-rates in Chapter 17 are not consistent, and that 'only the first definition is coherent with the concept of equilibrium proposed by Keynes, but this latter is not coherent with his notion of uncertainty, if interpreted as market equilibrium' (p 25). This, he goes on to say, is because the latter incorporates subjective elements. Here again we have elements of the classical long period misapplied to Keynes: there can be no hope at all of a long period composed exclusively of objective and fully-known observables. Under uncertainty, individuals must take a view of the future: the subjectivity Tonveronachi deplores is precisely what particularly recommends the explanation of rates of return in Chapter 17. Caravale (1992), in the same volume (Sebastiani 1992a), proposes altering the traditional concept of rates of return to incorporate

expectations; this is precisely to the point, and it provides a bridge between the two systems which can be warmly welcomed.

### LONG-PERIOD EMPLOYMENT

There is another concept of long-period equilibrium in <u>The General Theory</u>. In order, one supposes, to reinforce the idea of persistent unemployment, Keynes proposed a concept of `long-period employment':

if we suppose a state of expectation to continue for a sufficient length of time for the effect on employment to have worked itself out so completely that there is, broadly speaking, no piece of employment going on which would not have taken place if the new state of expectation had always existed, the steady level of employment thus attained may be called the long-period employment corresponding to that state of expectation. ... [E]very state of expectation has its definite corresponding level of long-period employment. (CW VII p. 48.)

This idea of the long period is as timeless as anything in the Ricardian tradition - a hypothetical situation designed not to mirror reality but to make a point. It is the only place where Keynes entertains the possibility that long-period expectations are met. The concept of long-period equilibrium symmetrical with short-period equilibrium, which would entail long-period expectations of the profitability of investment being confronted with actual outcomes, never makes an appearance, for the best of reasons. As I hope this chapter has shown, the system being modelled in The General Theory is dynamic; the world is evolving. The time horizon of long-period expectations is too long for comparison with the outcome to have any meaning; the comparison could not be useful in guiding behaviour, since the circumstances surrounding the investment decision would have changed markedly by the time the results are in.

#### CONCLUSION

The concepts of equilibrium on which we have been brought up, whether neoclassical or classical, `ramify into every corner of our minds' and make it difficult to read the message of <u>The General Theory</u>. Fitzgibbons (1988) was at pains to point out that Keynes had a different world-view from the majority, and that an uncertain future was fundamental to it. It is in <u>The General Theory</u> that time and uncertainty finally have their day in economic theory. There are valid concepts of equilibrium which are compatible with uncertainty, but they conform to the dominant concept of neither the neoclassical nor the classical school. Nor is equilibrium more than just a part of the <u>General Theory</u> story. Our struggle to escape has barely begun.

#### LITERATURE

G. Caravale, G. (1992) 'Keynes and the Concept of Equilibrium', in Sebastiani (1992a).

Chick, V. (1996) 'The Multiplier and Finance', in G. C. Harcourt and P. A. Riach, eds, <u>Maynard Keynes' General Theory</u>, Routledge, 1996, pp 154-172.

Eatwell, J. and M. Milgate (1983) Keynes's Economics and the Theory of Value and Distribution, London: Duckworth.

Garegnani, P. (1976) 'On a Change in the Notion of Equilbrium in Recent Work on Value and Distribution', reprinted in Eatwell and Milgate 1983.

Gilbert, J. C. (1982) <u>Keynes's Impact on Monetary Economics</u>, London: Butterworth.

Hansson, B. (1985) 'Keynes's Notion of Equilibrium in the General Theory', Journal of Post Keynesian Economics 7, Spring, pp 332)41.

Harrod, R. F. (1935) Letter to Keynes, 1 August, in CW XIII, pp 533)4.

Hicks, J. R. (1965) <u>Capital and Growth</u>, Oxford: Oxford University Press.

Keynes, J.M. (1971)1980) The Collected Writings of John Maynard Keynes (ed.D. E. Moggridge and Austin Robinsom). 30 vols. London: Macmillan. References below to CW and volume number. Dates of original publication are given in text; page references to The General Theory are to the original.

- ---- (1922) A Revision of the Treaty. CW Vol. III.)
- ---- (1923) A Tract on Monetary Reform. CW Vol. IV.)
- ---- (1930) A Treatise on Money. CW Vols V and VI.)
- ---- (1936) <u>The General Theory of Employment, Interest and Money. CW</u> Vol.VII. )
- ----- (1937) Ex post and ex ante', notes for 1937 lectures, <u>CW</u> XIV pp. 179\*83.)
- ---- (1973) <u>The General Theory and After: Preparation. CW</u> Vol. XIII.)
- ---- (1973) <u>The General Theory and After: Defence and Development. CW</u> Vol. XIV.
- Kregel, J. A. (1976) `Economic Methodology in the Face of Uncertainty: The Modelling Methods of Keynes and the Post) Keynesians', Economic Journal 86, June, pp 209-225.
- Kregel, J. A. (1983) 'Conceptions of Equilibrium, Conceptions of Time and Conceptions of Economic Interaction', in Caravale, G., ed., The Crisis in Economic Theories, Milan: Franco Angeli Editore, 1983 \text{\text{f}}
- Kregel, J. A. (1992) 'The Identity between Aggregate Supply and Demand Price Equilibrium and Labour Market Equilibrium at Less than Full Employment', in Sebastiani (1992a).
- Leijonhufvud, A. (1968) On Keynesian Economics and the Economics of Keynes, Oxford: Oxford University Press.
- Potestio, P. (1986) 'Equilibrium and Employment in <u>The General Theory', Giornale degli Econoomisti e Annali di Economia,</u> Lulio, Agosto, pp 363-88.

Potestio, P. (1986) 'Alternative Aspects of Monetary Theory in the General Theory: Significance and Implications', Recherches Economiques de Louvain 55, 1989, pp. 257-72.

Robinson, J. (1978) 'A Lecture Delivered at Oxford by a Cambridge Economist', in J. Robinson, Contributions to Modern Economics, Oxford: Blackwell.

Sebastiani, M. (1992) 'Keynes and Long)Period Positions', in Sebastiani (1992a).

Sebastiani, M. (1992a) 'The Notion of Equilibrium in the Keynesian Theory', London: Macmillan.

Sraffa, P. (1932) 'Dr Hayek on Money and Capital', Economic Journal 42, March, pp 42-53.

Tobin, J. (1958) 'Liquidity Preference as Behaviour Toward Risk', Review of Economic Studies 25, February, pp 65-86.

Tonveronachi, M.(1992) 'Keynes and Equilibrium: A Note', in Sebastiani (1992a).

Vercelli, A. (1991) Methodological Foundations of Macroeconomics: Keynes and Lucas, Cambridge: Cambridge University Press.