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KEYNES AND THE LONG PERIOD

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INTRODUCTION

In an often-quoted passage Joan Robinson once stated that "Keynes hardly ever peered over the edge of the short period" (Robinson, 1978, p. 14). Some years earlier she had pointed out that "(1)t was left to Harrod to transpose The General Theory into long-period terms" (Robinson, 1971, p. 24). For many, although not necessarily for Robinson herself, Keynes undue concentration on short period issues was responsible for the emergence of the neoclassical synthesis through which orthodox conceptions of long-period equilibrium positions were reconciled with "Keynesian" concerns such as unemployment and deficiency of aggregate demand (e.g., Garegnani, 1978/79). (1).

But, what would Keynes have seen if he had peered over the edge of the short period? After all, Keynes did emphasize the need to develop a concept of monetary economy where money was not neutral in the short as in the long period:

"The theory which I desiderate would deal...with an economy in which money plays a part of its own and affects motives and decisions and is, in short, one of the operative factors in the situation, so that the course of events cannot be predicted, either in the long period or in the short, without a knowledge of the behaviour of money between the first state and the last. And it is this which we ought to mean when we speak of a monetary economy. (Keynes, 1973, XIII, pp. 408/9, emphases added).

Keynes was well aware that to find a non-neutral role for money in strictly short-period terms was not sufficient to found a new theory. Orthodox theory accepted that money could be non-neutral in the short period, when agents could not discern the real determinants behind nominal changes. Keynes's own Tract on Monetary Reform, published in 1923, illustrated how easily orthodox theory could absorb this sort of non-neutrality. Clearly, there was no need for a "short-period revolution" in these terms. As Keynes put it later, it was in connection with accumulation that orthodox theory failed (2) and where, therefore, the need for a new approach was most felt. Thus, just to state that Keynes was not concerned with the long period because "he used to say (it was) a subject for undergraduates"

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(Robinson, 1978, p. 14) is not sufficient to dispose of the subject. Keynes was concerned with the long period and it is in the context of long period mechanisms that he established the reasons for effective demand failures, in chapter 17 of *The General Theory*. If Keynes decided nevertheless to frame his model in short period terms he must have had stronger reasons than mere idiosyncratic preferences. In this paper, a hypothesis is offered as to what these reasons could be. Initially, the meaning of long period is discussed with reference to Marshall's views. Marshall is important in this connection both as the creator of the explicit dichotomy between short and long period and as Keynes's teacher. The relation between the concepts of period and run is described and how they relate to the notion of equilibrium. In the following section, Keynes's own arguments as to the adequacy of the notion of long period are examined. Finally, we discuss how to reconcile a model that tries to assume the point of view of actual decision-makers with the study of issues like accumulation of capital, technological progress, etc.

1 - The Meaning of "Long Period"

In the Keynesian tradition (including what Joan Robinson called "bastard keynesianism") long period analysis has been identified to the construction of growth models. Starting with Harrod's "dynamic model" (Harrod, 1939), a vast literature was developed "generalizing" *The General Theory*. Harrod's initial attempt was an effort to extend Keynes's equilibrium conditions (presented in chapter 3 of the GT), that were defined for a given moment, to a string of moments. According to Harrod, in an extended sequence of time, one had to take into consideration not only shifts in aggregate demand but also changes of productive capacity. In a given moment, the equilibrium condition was that demand for capital goods should be enough to absorb that share of produced income that was not destined to consumption. In a string of moments, the equilibrium condition was the same, provided one took into consideration that it would require an increasing real demand to occupy an increasing productive capacity.

As Kregel (1971) has shown, the feature of Harrod's model that became best known, the knife's edge problem, that is the instability of its equilibrium position, was a different issue. The concentration of the subsequent literature on the latter problem has given a direction to growth analysis that was very different of its starting point. Adopting a form of Samuelson's correspondence principle (Samuelson, 1979), the two main strands of keynesian thought (Kaldorian models developed in Cambridge, England, and Solowian models in Cambridge, Massachusetts) dedicated themselves to the examination of the stability characteristics of growth models on the understanding that they described not only formal consistency requirements of models but actual behaviors of agents.⁽³⁾ Stability in this sense, however, is a purely formal issue. It does not necessarily refer to actual behaviors nor to actual mechanisms through which the economy really reaches a given position. Stability analysis actually employs equilibrium relations to explain behavior out of equilibrium, when agents are not supposed to possess the information that is necessary to derive the equilibrium relations themselves. It is always possible to define new functional forms to make it possible to establish new stability properties of the models without any real change in the underlying picture of the actual economy. Samuelson's correspondence principle is thus completely misleading in economics, whatever may be its merits in other sciences. It is hard to see how modern "growth economics" could escape being classified by Keynes as another of those "pretty polite techniques" that did not touch the "real world" that concerned him^{(4) (5)}.

Originally, however, "long period" did not refer to growth analysis (Kregel, 1983, p. 345). On the contrary, the notion was used to describe "resting" positions the economy was supposed to reach once unsystematic influences or disturbances could be ruled out (Garegnani, 1976).

Classical value theory was concerned with these positions when it took "natural" prices as opposed to "market" prices as its subject. The distinction between the two, however, was not in terms of periods, but of the nature of their determinants. Natural prices were seen to be rooted in the

permanent, systemic elements of the economy. In contrast, "(m)arket prices were believed to be influenced by a variety of forces - uncertainty, harvest failure, monopoly and so on - and thus were not amenable to analysis in terms of systematic forces, as were natural prices" (Eatwell, 1977, p. 64n).

The dichotomy assumed a definite temporal content with Marshall who changed the meaning of market and natural prices into short and long period equilibrium prices (Bharadwaj, 1978). The fundamental change that was operated with the new framework was that now both types of prices were "amenable to analysis" and a very definite relationship was established between them (6). Short and Long Period were distinguished by the type of restriction under which equilibrium was determined. As Marshall put it:

"For short periods people take the stock of appliances for production as practically fixed; and they are governed by their expectations of demand in considering how actively they shall set themselves to work those appliances. In long periods they set themselves to adjust the flow of these appliances to their expectations of demand for the goods the appliances help to produce". (Marshall, 1920, pp. 310/1).

From this Marshall concluded that demand factors would determine value in the short period while cost of production would be the main determinant in the long. This is so because in the short period:

"(t)he supply of specialized skill and ability, of suitable machinery and other material capital, and of the appropriate industrial organization has not time to be fully adapted to demand; but the producers have to adjust their supply to the demand as best they can with the appliances already at their disposal" (Marshall, 1920, pp. 312/3).

Clearly, the real logical distinction refers to the restrictions imposed on agents in each situation. The time aspect derives from the necessary delays in fully adjusting productive conditions to expected demand:

"In long periods...all investments of capital and effort in providing the material plant and the organization of a business, and in acquiring trade knowledge and specialized ability, have time to be adjusted to the incomes which are expected to be earned by them; and the estimates of those incomes therefore directly govern supply, and are the true long-period normal supply price of the commodities produced" (Marshall, 1920, p. 313).

Long period analysis, thus, does not refer to the study of actual processes but to the degree of "completeness" with which productive conditions are adapted to the demand profile. It refers to what agents would do if they could know from the beginning what demand structure would prevail. This would determine "normal" values, the ones that agents would recognize as adequate to prevailing material conditions, and therefore no further change would be sought for.

Duration matters only subsidiarily to the dichotomy between short and long period. As a matter of fact we can always see through a short period equilibrium configuration to identify which would be its long period counterpart, just by relaxing the number of restrictions under which we find the short period solutions. It does not mean, however, that we can as well to describe the dynamics of change that would take us from the short to the long period situation. This would take a run of time that depending on the data of the problem could be infinite. If not, long period "normal" values would emerge in "the long run", that are the values

"which economic forces would bring about if the general conditions of life were stationary for a run of time long enough to enable them all to work out their full effect" (Marshall, 1920, p. 289).

However, as Marshall recognized,

"...we cannot foresee the future perfectly. The unexpected may happen; and the existing tendencies may be modified before they had time to accomplish what appears to be their full and complete work. The fact that the general conditions of life are not stationary is the source of many of the difficulties that are met with in applying economic doctrines to practical problems" (Marshall, 1920, p. 289).

The time "run" that may be necessary to establish long period values may then exceed what is allowed by the actual operation of the economy. It may even be infinite if the adaptation processes that are triggered are not convergent to long period equilibrium. Thus, there is no direct equivalence between "long run" analysis, which contains a definite duration aspect, and "long period" analysis which does not. (7) Long period inconsistencies may be present in short period situations, and this may be enough to trigger adaptive changes. As Joan Robinson noted, this happens all the time:

"Long-period changes are going on in short-period situations. Changes in output, employment and prices, taking place with a given stock of capital, are short-period changes; while changes in the stock of capital, the labour force and the techniques of production are long-period changes. ...A given short-period situation contains within itself a tendency to long-period change. (Robinson, 1969, p. 180).

This goes in the same direction as proposed by Marshall:

"For the element of Time, which is the centre of the chief difficulty of almost economic problem, is itself absolutely continuous: Nature knows no absolute partition of time into long periods and short; but the two shade into one another by imperceptible gradations, and what is a short period for one problem, is a long period for another." (Marshall, 1920, p. vii).

Marshall's interest in the long period is related to the idea of normality:

"...normal results are those which may be expected as the outcome of those tendencies which the context suggests; or, in other words, which are in accordance with those "statements of tendency", those Laws or Norms which are appropriate to the context. This is the point of view from which it is said that normal economic action is that which may be expected in the long run under certain conditions (provided those conditions are persistent from the members of an industrial group." (Marshall, 1920, p. 28).

Marshall wanted to combine the classical concern with "natural" values and the emerging neoclassical focus on individual conduct. Classical Political Economy knew no analysis of individual decisions and behaviors. Classes were defined by their "objective" function in the operation of the economy. There were no micro-analyses of behavior. As long as capitalism remained capitalism, capitalists would accumulate, workers would produce surplus values and landlords would consume part of aggregate surplus. Economic "laws" were supposed to be as objective as these roles. Decisions could not change them.

The English neoclassical tradition, however, "unlike the European tradition,...was more concerned with the analysis of actual markets and market institutions" (Kregel, 1977, p. 496). This meant, according to Keynes, "to enter the vast laboratory of the world, to hear its roar and distinguish the several notes, to speak with the tongues of businessmen"(CWJMK, X, p. 187). Economic laws had to become behavioral laws. Individuals took decisions and acted under uncertainty. Thus, they could not be conceived as consciously following up any pre-set long-run plan. To reconcile the notion of "law" with individual freedom in any degree Marshall introduced the idea of "normality":

"...we may say that the course of action which may be expected under certain conditions from the members of an industrial group is the normal action of the members of that group relatively to those conditions." (Marshall, 1920, p. 28, his emphases).

In this way, long period and long run became twin concepts for Marshall, because he proposed that long period normal results were those to be obtained in the long run when conditions were stable enough to allow agents to make their normal choices in face of those conditions. Nevertheless, as seen above, the two notions are conceptually different and logically independent. Long period results can be defined independently of their being achieved in the long run in the same sense that natural values can be defined independently of there being any forces leading market prices to converge to them over

time. Long period values can always be defined for any given environment even though there may be not any finite run that may lead to their attainment.

Keynes noted that Marshall's distinction between short and long period was "path-breaking". But he added that "this is the quarter in which, in my opinion, the Marshall analysis is least complete and satisfactory, and where there remains most to do." (CWJMK, X, p. 207). We may venture the hypothesis that Keynes objection may have had to do with the identification of long period with long run and thus with the gravitation process that unifies both notions. This is explored in the next section.

2. Keynes, the Long Period and the Long Run

The long period was thus important to Marshall because it was the way to reconcile the search for long run "constants" with the behavioral analysis of actual markets that concerned Marshall. The notion of normality was fundamental to justify the possibility of stable equilibria, whenever conditions were sufficiently permanent to allow agents to find their most desired positions. Long period results, in this sense, could always be defined; whether they could be actually reached depended on the degree of permanence of their determining conditions.

Keynes, like Marshall, also saw the long period as the realm of full equilibrium. When discussing a paper submitted by Kalecki for publication in *The Economic Journal*, in 1941, Keynes asked Joan Robinson whether it was "not rather odd when dealing with 'long run' problems to start with the assumption that all firms are always working below capacity" (CWJMK, XII, p. 829). When she replied that Kalecki was working with a different view of the long period, Keynes retorted that

"If he is extending the General Theory beyond the short period but not to the long period in the old sense, he really must tell us what the sense is. For I am still innocent enough to be bewildered by the idea that the assumption of all firms always working below capacity is consistent with 'a long-run problem'." (Id., pp. 830/1).

When developing the concept of Monetary Economy, on which The General Theory was to be founded, Keynes observed that Marshall had not "explicitly settled" the meaning of long period equilibrium. He saw three possible ways to define it:

"The first suggestion conveyed by the term 'long-period' is that it relates to a position towards which forces spring up to influence the short period position whenever the latter has diverged from it. The second suggestion conveyed is that the long-period position differs from short-period positions in being a stable position capable *cet.par.* of being sustained, whilst short-period positions are *cet.par.* unstable and cannot be sustained. The third suggestion is that the long-period position is, in some sense, an optimum or ideal position from the point of view of production, i.e. a position in which the forces of production are disposed and utilised to their best possible advantage" (CWJMK, XXIX, p. 54).

The third meaning of long period corresponds to its traditional usage, equating it with the accepted notion of long run equilibrium. The second meaning allows for a view of normality which considers Marshall's recognition that "of course Normal does not mean Competitive" (Marshall, 1920, p. 289). As a result, there may be persistent situations which do not necessarily represent the best use of resources. Of course, in the very long run no monopoly can survive and one can thus suppose that the second and the third meanings of long period would collapse into one.

The first meaning is weaker. In it one recognizes only that there may be some stimuli to change implicit in a given situation even if it represents a short period equilibrium. This is the case of the short-period equilibrium between supply and demand being coexistent with a desire to change the stocks of capital equipment in use. The concept does not refer to a terminal but to an initial position and reactions to it that are implicitly contained in its construction. (8) This is the sense

Keynes actually used the notion of long period, both before and after the General Theory, with one relevant exception that was the concept of long-period employment, presented in chapter 5 of the General Theory, to be referred to below.

In the discussion of meanings presented above Keynes did not try to solve the ambiguity of the concept, choosing instead to focus his criticism on the "uniqueness" of the equilibrium position:

"For the root of the objection which I find to the theory under discussion, if it is propounded as a long-period theory, lies in the fact that, on the one hand, it cannot be held that the position towards which the economic system is tending or the position at which it would be at rest or the optimum position ... whichever of these tendencies we have in view, is entirely independent of the policy of the monetary authority; whilst, on the other hand, it cannot be maintained that there is a unique policy which, in the long run, the monetary authority is bound to pursue" (CWJMK, XXIX, pp. 54/5) (9).

This criticism has nothing to do with the first meaning of long period which does not specify the nature of the final equilibrium position. It touches directly, on the other hand, on the orthodox way of equating long period normality with long run equilibrium.

At this point, one should have in mind how can monetary policy have the kind of long-period influence Keynes expected, that is, affecting the "course of events". It did so by exercising a lasting impact on the accumulation of capital. Money could be a substitute for real capital assets in the portfolios of agents. Differently from Wicksell, who focused on the role of credit sustaining the purchase of investment goods to have monetary policy affecting investment, Keynes approached this process emphasizing the role of money as an asset, absorbing demand that otherwise could be directed to productive assets. Under certain conditions, it could be more attractive to retain liquid assets than income-generating, capital assets. If confidence on the expectations of returns from the latter is weak, agents may prefer the safety that liquid assets confer to their holders. (10)

The quality of money of being an asset, according to Keynes, derives from the uncertainty that surrounds private economic decisions under capitalism (11). The liquidity of money lies in its unique capacity to liquidate debts (CWJMK, V, p. 1; Keynes, 1964, pp. 236/7). It is because other assets are subject to income or capital risks that money, the legal tender and its closest substitutes, has a "return".

Uncertainty is particularly strong in relation to investment in long-lived capital assets, where current conditions cannot give the decision-maker the relevant information about the future to orient his acts. This does not mean that agents cannot perceive current inadequacies of their capital stock or differences in current profit rates. It only means that there is no mechanism to coordinate their perceptions and decisions towards a consistent, stable long run equilibrium position.

Keynes, like Marshall, approached the long period to sustain the notion of "normality" (12). But "normality" is a behavioral concept. It refers to reactions that consistently accompany a given stimulus. The latter have to be sufficiently permanent or repetitive to allow agents to develop "normal" behaviors. Investment of capital would fail this criterion. In this case,

"(t)he outstanding fact is the extreme precariousness of the basis of knowledge on which our estimates of prospective yield have to be made. Our knowledge of the factors which will govern the yield of an investment some years hence is usually very slight and often negligible." (Keynes, 1964, p. 149) (13).

The present is not then sufficient to "determine" investment decisions:

"...regarding the marginal efficiency of capital primarily in terms of the current yield of capital equipment...would be correct only in the static state where there is no changing future to influence the present..." (Keynes, 1964, p. 145).

If investments were "primarily" decided in terms of current data one could postulate conditions under which long period values would be obtained in the long run induced by those

conditions. Keynes, however, interposed the predominance of personal interpretation, states of confidence, animal spirits, between current conditions and investment decisions.

Under these conditions, long period equilibrium values may exist potentially behind any short-period configuration. We also may consider, as Keynes did, that if short and long period values diverge, the economy will move toward another short-period position and will keep moving as long as the divergence remains. Nevertheless, there is no longer any necessary connection between the long-period equilibrium values an external observer can identify at any given moment and the specific strategies that will be adopted by actual agents at that same moment. What matters to Keynes is the "state of long-term expectations" rather than "objective" long period conditions. (14) These long-period values cannot then be called "normal" because they do not correspond to the information that will be actually available to agents. (15) Therefore, even if long-period values can be calculated nothing can guarantee that they will become, in the long run, "normal" values.

The difference between the concepts of run and period was very clear to Keynes. In a debate with Hubert Henderson about the influence of money supply Keynes noted that:

"...the above deals with what happens in the long run, i.e. after the lapse of a considerable period of time rather than in the long period in the technical sense." (CWJMK, XXIX, p. 221).

Then Keynes proceeded to state that a long run equilibrium situation might not exist (which was not the case of long-period values "in the technical sense"):

"I should, I think, be prepared to argue that, in a world ruled by uncertainty with an uncertain future linked to an actual present, a final position of equilibrium, such as one deals with in static economics, does not properly exist." (idem, p. 222).

That the question revolves around volition in an environment of uncertainty is not open to doubt. In a letter to Harrod, Keynes wrote in 1938 that

"I also want to emphasize strongly the point about economics being a moral science. I mentioned before that it deals with introspection and with values. I might have added that it deals with motives, expectations, psychological uncertainties. One has to be constantly on guard against treating the material as constant and homogeneous. It is as though the fall of the apple to the ground depended on the apple's motives, on whether it is worth while falling to the ground, on whether the ground wanted the apple to fall, and on mistaken calculations on the part of the apple as to how far it was from the center of the earth." (CWJMK, XIV, p. 300; see also p. 287).

But, what can one say about short-period equilibrium? Would it not share the same nature as the long-period? For Keynes, some crucial differences between the two notions could be pointed out. Firstly, Keynes saw the short-period framework as being closely related to the actual stage in which agents make their decisions. It was not just an idealized scenery but a fair rendering of the restrictions under which flesh-and-bones agents would act. This is very clearly the meaning of the following quotation:

"Thus we are supposing, in accordance with the facts, that at any given time the productive processes set on foot, whether to produce consumption goods or investment goods, are decided in relation to the then existing capital equipment. But we are not assuming that the capital equipment remains in any sense constant from one accounting period to another. If we look at the productive process in this way, we are, it seems to me, in the closest possible contact with the facts and methods of the business world as they actually exist; and at the same time we have transcended the awkward distinction between the long and the short period." (CWJMK, XXIX, pp. 64/5).

One should notice that the difference that is being brought up to the fore is precisely that the short-period framework reproduces the actual environment where agents act, while the long-period situation has no such "reality". They are not, thus, equivalent concepts. They are notions of a different nature. (16)

Even the idea of equilibrium, in the short period, is more than just an analytical abstraction to Keynes. As he stated in *The General Theory*, short-period decisions, like the decision

to produce, are made in an essentially repetitive fashion (Keynes, 1964, pp. 50/1). As long as the environment does not significantly change, learning can originate a kind of gravitation process toward equilibrium:

"Entrepreneurs have to endeavor to forecast demand. They do not, as a rule, make wildly wrong forecasts of the equilibrium position. But, as the matter is very complex, they do not get it just right; and they endeavor to approximate to the true position by a method of trial and error. (...) It corresponds precisely to the higgling of the market by means of which buyers and sellers endeavor to discover the true equilibrium position of supply and demand." (CWJMK, XIV, p. 182).

One could doubt, then, whether it is really possible to extend The General Theory to the long-period. Keynes's own use of long-period notions in that work strengthen this feeling. The long period is briefly introduced in the chapter on expectations to state that "if we suppose a state of expectation to continue for a sufficient length of time", the economy will reach the level of employment that is entirely due to that state. This will "be called the long-period employment corresponding to that state of expectation" (Keynes, 1964, p. 48). It should be noticed that Keynes does not use the term "normal", as Marshall used to when referring to long-period values. This is probably due to the fact that Keynes proceeded from that definition to state that "expectation may change so frequently" that precise level of employment may never be attained in reality. In any case, as Asinakopulos (1984/5; 1985) already pointed out, Keynes discussion of this concept has the nature of an aside, without any consequence for the model presented in his book.

The long period is back at the chapter 17, not as a terminal, long run normal state, but as "a position towards which forces spring up to influence the short-period position whenever the latter has diverged from it" (CWJMK, XXIX, p. 54, quoted above). The divergence refers to the market values of assets and is reflected in the relation between their spot and forward prices that induces changes in their available stocks. What matters in this discussion is how the stocks of the various

assets, including real capital assets, are changed and Keynes did not took his model to show any long-run equilibrium prices of assets. All that was introduced was the divergence to show how changes in the economy are induced by it. (17) The operative concept was always the state of long term expectations, something that "cannot be even approximately eliminated or replaced by realised results" (Keynes, 1964, p. 51).

3. The Possibility of Normality

Marshall built his long-period analysis trying to obtain behavioral foundations to the notion of normality. Keynes proposed that in an economy that operates under uncertainty to be able to determine long-period values was not sufficient to establish a long-run tendency to reach those values.

For both Marshall and Keynes, the point of the idea of normality was to explain the existence of rules, the continuity that economic life exhibits, despite the fluctuations and interruptions of activity that are also typical of capitalism. As observed by Keynes,

"...it is an outstanding characteristic of the economic system in which we live that, whilst it is subject to severe fluctuations in respect of output and employment, it is not violently unstable. (...Fluctuations may start briskly but seem to wear themselves out before they have proceeded to great extremes, and an intermediate situation which is neither desperate nor satisfactory is our normal lot." (Keynes, 1964, pp. 249/50).

Furthermore, in a 1936 letter to Joan Robinson, Keynes had warned that one "must not confuse instability with uncertainty" (CWJMK, XIV, p. 137). The capitalist economy shows a remarkable degree of stability for a system with the characteristics Keynes described. In a sense, it is not the explanation of fluctuations that should be the problem for economists but of how a system like this simply does not collapse under its own contradictions.

As we saw, for Keynes order and continuity were not a result of the "attraction" forces contained in a long-run set of equilibrium values. The divergence between short and long period results was sufficient to move the system but not to direct it toward any definite position. This was so because investment decisions were only partly informed by current signals and long run equilibrium values could not be translated into "motives and behaviors" of entrepreneurs their state of long-term expectations. Mostly, investment was determined by extremely uncertain expectations that had no way to be coordinated among different individual agents. Continuity (and normality) should, thus, be explained in another way. According to Keynes, continuity was actually guaranteed by "exogenous" factors:

"Now since these facts of experience (18) do not follow of logical necessity, one must suppose that the environment and the psychological propensities of the modern world must be of such a character as to produce these results". (Keynes, 1964, p. 250).

Keynes went on to list four of these characteristics, namely, that the multiplier is not very large; the investment schedule is not very elastic with respect to a change in expectations or in the interest rate; the money-wage rate is not very sensitive to changes in the level of employment; and that changes in investment tend to react on the marginal efficiency of capital in such a way as to counteract the initial impulse (Keynes, 1964, pp. 250/1).

These features refer basically to the "psychological propensities of the modern world". To those we should add a very important concept developed elsewhere in *The General Theory*, the notion of convention. This is

"...our usual practice...to take the existing situation and to project it into the future, modified only to the extent that we have more or less definite reasons for expecting a change. (...) (T)he above conventional method of calculation will be compatible with a considerable measure of continuity and stability in our affairs, so long as we can rely on the maintenance of the convention." (Keynes, 1964, pp. 148, 152).

The notion of convention is the closest substitute Keynes offered to the concept of "normal" values. It isolates a very important characteristic of behavior under uncertainty: its "stickiness". Agents form expectations in terms of sets of possibilities instead of point-expectations. Disappointment follows only when results really "surprise" agents, as Shackle would put it, meaning that not only they are different from what was expected to be the most probable result but they are also outside the set of "a priori" reasonable outcomes. Convention may cover production decisions, where permanence of the environment is largely a safe assumption, but also more complex factors like relative wages. (19)

As important as the 'right' psychology are the features of the environment that strengthen continuity. Foremost among these features are institutions created to reduce or socialize uncertainty, coordinating plans and activities. The most important of them is the emergence of forward contracts denominated in money connecting the present to the future (20). To sustain a system of forward contracts one also needs to define a monetary standard endowed with rules of management that limit the future behavior of the monetary unit. In addition, there are also material elements of continuity, such as long-lived capital goods which limit, at any given moment of time, the range of alternatives that are open to agents.

Even technical change, which used to be stressed as a factor of discontinuity by authors like Schumpeter, may have the opposite role. As Nathan Rosemberg has stressed, there are strong continuity elements to be considered in the study of technical progress. (21)

Finally, in modern capitalist economies, one cannot forget the action of the State in informing and coordinating economic agents and assuring them "normal" business conditions will be maintained.

All these "environmental and psychological" factors are sufficient to create a stable framework within which agents can form a picture of "normality" without reference to long-period equilibrium values that cannot be operational at the behavioral level. As suggested elsewhere, Keynesian normality is a feature of the short period rather than the long (Carvalho, 1988, p. 79n).

4. Conclusions

To take Keynes's assumptions at their face value implies that a long-period analysis "in the old sense" has no place in his model of a Monetary Economy.

Marshall introduced the concept to tame the analysis of economic behavior in a context of uncertainty. To do it, it was required that "certain conditions" were to be present. The main one was, naturally, the persistence, in time, that is, in the long run, of the determinants of that position. That persistence would allow those values to become "normal", in the sense of being entirely adequate to those conditions.

Keynes considered that persistence incompatible with the assumption of uncertainty, emptying the long-period model of its behavioral content. The knowledge of long-period equilibrium values is not at the reach of actual agents and therefore does not influence their behavior. What matters is their long term expectations rather than long-period values and there is no way the environment can make those two sets compatible. In contrast, short term expectations can gravitate around short-period equilibrium because for the latter, the restrictions of the model coincide with the restrictions under which actual, real-world agents are supposed to make their decisions. Moreover, short-period factors are relatively persistent compared to the number of times the corresponding decisions are made, allowing agents to develop an adequate perception of their surrounding conditions.

The concept of normality, then, is developed by Keynes independently of long-period concerns, based on features of the environment and of the way agents make their decisions. A long-period analysis along the lines set by Keynes would demand the study of the factors of continuity that connect each short period to the next. A long-period model "in the old sense", no matter what kind of theoretical innovation it may contain, will not do. (22)

NOTES

- (1) Joan Robinson seemed to evaluate this criticism differently. She recognized that "(t)he Keynesian revolution destroyed the basis of t(the neoclassical) concept of long-period equilibrium and put nothing in its place" (Robinson, 1980, p. 130). Nevertheless, her emphasis on the necessity of introducing 'historical time' in her theory led her to downplay the relevance of constructions of this nature.
- (2) "The whole object of the accumulation of wealth is to produce results, or potential results, at a comparatively distant, and sometimes at an indefinitely distant, date. Thus the fact that our knowledge of the future is fluctuating, vague and uncertain, renders wealth a peculiarly unsuitable subject for the methods of the classical economic theory." (CWMJK, XIV, p. 113).
- (3) As Asimakopulos (1985, p. 627) has pointed out, Harrod himself recognized that his model could be interpreted as "introduc(ing) an assumption about how entrepreneurs would behave" (Harrod, as quoted in Asimakopulos, *ibid.*). Harrod also admitted, however, this would be inconsistent with Keynesian views as to the influence of uncertainty in economic processes. Consistency could only be obtained by interpreting Harrod's variables as being "ex post" values rather than behavioral ones (*idem*, p. 623).
- (4) One should notice that Keynes's "short period" theory of employment did not develop through the examination of the stability properties of the point of effective demand. Demand failures are actually explained in a completely different setting, discussing choices open to asset-holders that will affect demand for real capital assets. Stability properties of aggregate supply and demand equilibrium are briefly referred to in chapter 3 of *The General Theory*. The movements along curves that they describe are, however, purely notional. There is no "correspondence principle" in *The General Theory*. To determine whether a given level of

activities is stable in the sense of being sustainable over time, the point to be addressed is the relation between expectations of proceeds by entrepreneurs and their actual realisation. This point is not only not discussed in The General Theory but it is actually disposed of as being a secondary matter in Keynes's debates with Mawtrey (CWJMK, XIV). Harrod's 1937 paper followed a similar path. The determinants of the warranted growth rate are not behavioral elements. Rather, they define consistency requirements of equilibrium between aggregate supply and demand, not actual determinants of agents behavior. This is specially clear when one thinks of the accelerator, which shows how much investment should grow to keep the desired rate of capacity utilization. Nothing in Harrod's model, however, guarantees that it will actually grow at that rate. As Joan Robinson observed, "when we are concerned with an economy which is off the steady path, the acceleration principle becomes a great impediment to clear thinking." (Robinson, 1979, p. 134).

- (5) In this sense, the growth models developed by Kaldor, Pasinetti, etc., do not address issues similar to those of Keynes's General Theory. Paraphrasing Nell, those models actually show "the interlocking of possibilities and necessities, rather than of motives, plans and information" (Nell, 1973, p. 200). For this reason, one cannot see them as variants of the same basic model, being the long period counterpart of Keynes's theory of employment as proposed by Kregel (1976).
- (6) Marshall also conceived of a situation where random influences could dominate price-determination. What he called "market period" however was characterized by the fixity of supply. Pricing then would be entirely explained by demand shifts and accidental disturbances. Market period prices, however, are not equivalent to the Classical market prices. Rather, these are comparable to Marshall's short period prices.

- (7) The importance of the distinction between "period" and "run" was brought to my attention by Geoffrey Harcourt.
- (8) Keynes added a little later: "On my view, there is no unique long-period position of equilibrium equally valid regardless of the character of the policy of the monetary authority." (CWJMK, XXIX, p. 55).
- (10) The substitutability between capital and liquid (monetary) assets is emphasized in many points of The General Theory, and formally modeled in its chapter 17. See Keynes, 1964, pp. 160/1; 212/3; 226/7 and 357/8. The substitutability between money and goods had already been raised in a 1933 draft of The General Theory (CWJMK, XXIX, pp. 84/6) although not yet in a portfolio choice framework.
- (11) The classic statement of the relationship between uncertainty and the demand for money as an asset is Keynes's 1937 The General Theory of Employment (CWJMK, XIV, pp. 108/23).
- (12) Keynes had written that "By means of the distinction between the long and the short period, the meaning of 'normal' value was made precise" (CWJMK, VII, p. 207).
- (13) Keynes's inclination to develop concepts that could reflect what takes place in "the real world" was already clear in the way he chose sides in the Malthus/Ricardo debate. See, e.g., CWJMK, X, p. 87: "...Malthus was already disposed to a certain line of approach in handling practical economic problems which he was to develop later on his correspondence with Ricardo, - a method which to me is most sympathetic, and, as I think, more likely to lead to right conclusions than the alternative approach of Ricardo."

- (14) When forming expectations an agent builds a scenario of the future within which he locates his own expected position. The divergence between short and long period values could show itself by falsifying his forecasts of scenarios, even if the particular results he achieves coincide with what was expected leading him to seek for additional changes of strategy.
- (15) The non-repetitive nature of an investment decision was the cornerstone of Shackle's pioneer efforts to criticize the use of probability notions to approach uncertainty. See Shackle, 1952.
- (16) "Long period equilibrium is not at some date in the future; it is an imaginary state of affairs in which there are no incompatibilities in the existing situation, here and now." Joan Robinson, quoted in Asimakopulos, 1978, p. 264).
- (17) Even before The General Theory Keynes had all but ignored long period analysis. His position, however, was, in a sense, more nihilistic. The long period was suggested to be irrelevant, as in his famous remark in the Tract that in the long run we would all be dead or in the focus on transition (disequilibrium) periods in the Treatise on Money and in his early writings on the crisis of the 30s, collected in volumes XIII and XX of his Collected Writings.
- (18) He is referring to the already quoted remark that the system does not show violent instability.
- (19) The conventional method is a form of those "well-established rules of thumb (we know to) exist in the business world, that pay-off periods, or desired or target rates of return, for example, fall within definite ranges, where exactly depending on expectations, confidence and the extent and intensity of uncertainty at any moment of time. We know that wage-earners have concepts of what is fair in relative wage structures, and in the overall share of wages, too..." (Harcourt, 1982, p. 219).

- (20) See Davidson (1978a; 1978b, pp. 57, 60). Also CWJMK, vol. XXVIII, p. 255: "The introduction of a money, in terms of which loans and contracts with a time element can be expressed, is what really changes the economic status of a primitive society". Also, CWJMK, vol. V, p.1.
- (21) One can cite the concept of "technological trajectory", in which one recognizes that technological revolutions tend to unfold gradually. As noted by Rosenberg, "in their earliest stages, innovations are often highly imperfect and are known to be so" (Rosenberg, 1982, p. 108). In addition, learning by doing and learning by using are also sources of technical change that suppose continuity rather than discontinuity. Rosenberg goes as far as to argue that even science should not be seen as entirely exogenous to the economic system (idem, ch. 7). These factors are examined in detail in Possas, 1988.
- (22) This is why, as Kregel has suggested, Keynes's break with the Marshallian mode of analysis may be seen as being more radical than Harrod's and other post Keynesian growth theorists, who maintain a way of working out long period models that is much closer to Marshall's than to Keynes's.

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