

S
UFRJ/IEI

T0130

044100-7

Instituto Federal do Rio de Janeiro

INSTITUTO DE
ECONOMIA
INDUSTRIAL

TEXTO PARA DISCUSSÃO Nº 130

KEYNES ON THE INSTABILITY OF
CAPITALISM AND THE THEORY OF
BUSINESS CYCLES

Fernando J. Cardim de Carvalho

Outubro/1987



UNIVERSIDADE FEDERAL DO RIO DE JANEIRO
INSTITUTO DE ECONOMIA INDUSTRIAL

KEYNES ON THE INSTABILITY OF CAPITALISM AND THE
THEORY OF BUSINESS CYCLES

Fernando J. Cardim de Carvalho*

Outubro/1987



43 - 016300

The author is grateful to Paul Davidson for his comments and encouragement. As usual, he also wants to thank Ms. Carmen Feijó. The ideas contained in this paper were first presented in Seminars at the Universidade de Campinas and the Catholic University of Rio de Janeiro. The author wants to thank the participants in both seminars for the comments made. The usual disclaimer applies.

*) Associate Professor - Universidade Federal Fluminense
Visiting Professor - Universidade Federal do Rio de Janeiro



FEA-UFRJ
BIBLIOTECA

Data: 5 / 7 / 88

N.º Registro: 044100-7
NS 98460

S
UFRJ/IEI
FD 130

FICHA CATALOGRÁFICA

Carvalho, Fernando J. Cardim de
Keynes on the instability of capitalism and
the theory of business cycles. - Rio de Janeiro:
UFRJ/IEI, 1987.
39 p.; 21cm. - (IEI/UFRJ. Texto para discussão,
130)
Bibliografia: p.34-36
1. Capitalismo. 2. Ciclos Econômicos
3. Keynes, John Maynard.

KEYNES ON THE INSTABILITY OF CAPITALISM AND THE THEORY OF
BUSINESS CYCLES

It is a widely held notion that Keynes in The General Theory ignored long period problems in order to concentrate on the (then) more urgent matters of how to revive the prostrated capitalist economies of the thirties. He was believed to have been concerned with the employment of existing resources rather than with growth or accumulation. The General Theory was seen as the "economics of depression" more than anything else, leaving long period analysis to be developed later by Keynes's followers. The view that Keynes was concerned with depression situations was proposed by authors such as Hicks, in his famous "Mr. Keynes and the Classics" (Hicks, 1937) and became part of the conventional wisdom of twentieth century economics.

The allegedly narrow perspective of Keynes's case in The General Theory was also pointed out by Joan Robinson, who always insisted that Keynes's construction was restricted to the short period. According to her, "It was left to Harrod to transpose The General Theory into long period terms" (Robinson, 1971, p. 24).

It is not our intention in this paper to examine whether or not long period arguments are properly treated in The General Theory. For our present purposes we will accept the dominant perception that they are not. (1) But what about

short period problems? Are the relevant questions really attacked by Keynes?

Short-period analysis has traditionally focused on one of two questions, depending on the method of the researcher being "static" or "dynamic". (2) In the former one studies a given position, such as the equilibrium level of employment, under specified restrictions. In dynamic analysis, on the other hand, the subject is some form of repetitive movement, like the business cycle. In business cycle theory one can identify a stable resting position around which (or, alternatively, toward which) fluctuations take place.

By the time *The General Theory* was written, there existed a vast literature in business cycle investigation. The static method, on the other hand, was mostly confined to microeconomic fields such as value theory. Keynes, however, extended the use of statics to macro-problems in a theory of employment where one studies equilibrium levels of employment under some constraints. Furthermore, Keynes explicitly included among the constraints a given state of expectations, an autonomous influence that is not determined by anything (3) while being liable to sudden and eventually deep changes. For this reason, as Shackle has pointed out, "The General Theory is the most paradoxical of books. Constructed on a purely static and equilibrium frame of formal argument, it clothes this frame in a rich and suggestive mantle of ideas about expectations and their

precarious basis and extreme sensitivity to 'the news'." (Shackle, 1965, p. 5).

For Keynes's critics, however, far from being a virtue, the stress on expectations and uncertainty can only deprive economic theory of the possibility of reaching "determinate" results. "[A]necdote and description replace the derivation of general analytic principles" (Eatwell, 1983, p. 24; also Garegnani, 1979). Under uncertainty anything is possible and this is a nihilistic premiss making a scientific study of economic problems impossible (Coddington, 1983).

We have discussed these criticisms elsewhere (Carvalho, 1983/4; 1984/5; 1986). They usually relate to Keynes's rejection of the method of long run equilibria. The consideration of uncertainty, however, also affects the study of short-period questions, particularly business cycles. The General Theory "concerned itself ostensibly with states or situations rather than events, adopted a formally equilibrium method, and relegated the business cycle to a single chapter, as a mere illustration of the new theory's powers." (Shackle, 1967, p. 268)

It has been proposed that because of its static formal framework and its emphasis on uncertainty *The General Theory* has represented a retrogression when compared to pre-Keynesian macroeconomics centered on the study of business cycles (Castro, 1986). Keynes is said to have mistakenly considered the economic theory of his times incapable of dealing with the true nature of capitalist

fluctuations. Therefore, the Keynes's revolution was responsible for "derailing" macroeconomics from its old but more fertile focus on business cycles (Lucas and Sargent, 1983). In the following pages we want to examine this criticism. We will begin by trying to recuperate the business cycle tradition before and after The General Theory. It should be noted that this tradition included Keynes himself at least up to A Treatise on Money and left some traces in chapter 22 of The General Theory. Nevertheless, the dominant approach to capitalist fluctuations did change in The General Theory and this is the subject of section II. Finally, the power of anti-cyclical policies is evaluated in the light of the preceding discussion.

I THE BUSINESS CYCLE "TRADITION" (4)

a. The Concept of Business Cycles

One has to begin a discussion such as this by trying to define in a rigorous way what is this tradition, if it exists, about. Is there a business cycle? How can we distinguish cycles, a precise concept inherited from physics, characterising well-defined laws of motion from mere joltings of the economy? A criterion is offered by Hawtrey's definition of cycles: "The essential characteristic of the trade cycle is its periodicity. That of course is the meaning of the term, cycle. What struck the pre-war economists was that the alternation between good and

bad trade was regularly spread over a period of from seven to eleven years, and that it was world-wide. Otherwise there would have nothing to explain. That the state of trade should vary is what every one would expect." (Hawtrey, 1950, p. 330).

Regularity, thus, is essential. Castro, in his criticism of Keynes's reliance on the uncertainty concept, agrees: "If, however, the behavior of the economy presents ... rhythm and regularity in a degree high enough to make it possible to talk of cycles ..." (Castro, 1986, p. 290). As a matter of fact, regularity was also essential to Keynes's own concept of cycles: "We do not ... merely mean by a cyclical movement that upward and downward tendencies, once started, do not persist for ever in the same direction but are ultimately reversed. We mean also that there is some recognisable degree of regularity in the time-sequence and duration of the upward and downward movements." (Keynes, 1964, p. 314).

We can conceive of regularity in a strong or in a weak sense. In the weak sense, regularity would mean only alternation. One could say that sooner or later in an economy left to itself good trade will follow a bad period and vice-versa. Without any restriction on the duration of each "phasis" this view of course could never be disproved. Naturally, if we adhere to Hawtrey's definition given above such a patternless alternation would not qualify as a cycle. In contrast, in the strong sense, regularity implies not

only alternation, but it also requires some statement as to duration and depth of the fluctuation. A ten-year cycle, a fifty-year cycle, specially the former, usually called Juglar cycles, are supposed to be regular enough to require explanation. (5)

This distinction is very important for many reasons, not the least because it is not undisputable the very existence of the problem. Mitchell (1930) showed that even for nineteenth-century capitalist economies cycles of a regular duration are not self-evident. Measuring from through to through, Mitchell identified 15 "crises" in the US economy, from 1812 to 1920. The durations in years were, in chronological order: 6, 7, 12, 10, 10, 16, 11, 16, 3, 10, 4, 3, 3, 7 (Mitchell, 1950, p. 43). If we choose to ignore fluctuations lasting less than 7 years, we still have the longest cycles lasting 128% more than the shortest. When Hawtrey mentions, probably referring to England, "seven to eleven years" he is also excluding shorter cycles, but even then the longest of his cycles (12 years) last 57% more than the shorter (7 years). More recent studies, such as Moore (1983) covering the US economy between 1834 and 1981 show even greater diversity (Moore, 1983, pp. 454/5). Shackle, when commenting the decline of business cycle theory after 1936, the year of *The General Theory*, wrote: "For the theory of business cycles the year 1936 was the Apocalypse: the revelation and the end. It was the end because in the intervening thirty years we have had no business cycle of

the kind which is discernible throughout the nineteenth century and the first third of the twentieth, reaching a fearful climax in 1930-3." (Shackle, 1967, p. 266)

It is important to state clearly what is being examined. The point in question is not whether the economy tends to fluctuate instead of behaving smoothly and harmonically but whether fluctuations are cyclical, which means, fluctuating according to an identifiable and stable pattern. Fluctuations may be the manifestation of the difficulty of a market economy to sustain an intertemporally coherent aggregate behavior or may be due to lagged adaptation to random shocks. Strictly speaking, cyclicity requires repetition, "an unceasing round, each cycle growing out of its predecessor and merging into its successor" (Mitchell, 1950, p. 46). The existence of cycles is obviously an empirical question. But a theory which intends to justify rigorously a cyclical process cannot admit interruptions or to depend on the eventual renewal of exogenous shocks that would lead to wave-like adaptation. (6) This criterion, as we will see next, is very stiff even for a large part of the authors in the business cycle tradition.

b. Early Studies in Business Cycles

Studies on trade cycle theory began to be developed in the second half of the nineteenth-century. Far from characterizing any unified approach, these studies proposed vastly different views on the causes and modes of cyclical

behavior. The degree of convergence attained in other fields of economics is conspicuously absent of trade cycle theory. Authors sharing the same basic vision of the economy pointed to completely different aspects of the operation of a modern economy as being the possible source of wave-like movements.

Although one can hardly name any influential author that has made the study of cycles the main focus of concern, practically every author, including Keynes in *The General Theory*, felt some compulsion to advance some hypothesis as to the cause of fluctuations. These hypotheses served to develop a classification of theories. They were grouped in terms of either the cause of the cyclical pattern (as in, e.g., monetary theories versus real theories) or the nature of the turning points (as in, e.g., underconsumption versus superinvestment models). Debates among the proponents of these theories were, however, relatively rare and the cross-fertilization brought by discussion to other fields was practically absent.

Behind the particular hypotheses, nevertheless, we can discern some important similarities that may be more fertile as criteria to study business cycles theories than the traditional distinctions in terms of turning points. First, however, we have to recall that students of business cycles could generally be classified into two groups depending on the nature of the work they performed. On one hand, there were those economic statisticians, usually affiliated with some institution dedicated to survey business conditions,

that had the task of describing actual fluctuations. Mitchell and the National Bureau of Economic Research are the best known references here but there were similar institutions in England, Germany, Poland and Russia. Among those who did research along these lines we count, among others, Kondratieff and Kalecki, in his early years. These authors often did not intend to propose any particular theoretical approach. Trade cycle theories mattered only to the extent they could result in identifying new forms or sources of data to be investigated. The goal was to collect and prepare the greatest number of series and to describe their leads and lags.

In contrast, business cycle theory aimed at identifying the principle of cyclicity. If the economy as a whole suffered cyclical fluctuations, all the series describing major economic behaviors would somehow show those fluctuations. Description alone cannot sort out the causal forces in operation among all series showing fluctuations. Theories of trade cycles dealt with causality. While empiricists tried to describe real-world processes, theoreticians aimed at establishing the causal hierarchy relating those processes. The first group dealt with fact. The second with interpretation.

c. Classifying Theories of Business Cycles

There are two fundamental approaches as to the nature of business cycles. The first postulates that cycles are

unending oscillations intrinsic to a capitalist economy. They were born with capitalism and cannot be disposed of without deeply changing the system itself. In this view, thus, the normal behavior of a capitalist economy is cyclical. Rigorously, one cannot speak of a cycle, but of the cyclical process, by which one upward movement necessarily and regularly engenders its opposite and vice-versa. The economy is always in an identifiable cyclical stage in an endless succession of states. The cyclical mechanism is ingrained in the most fundamental institutional features of capitalism forcing the regular alternation of phases. Under these conditions, to identify the beginning of a cycle or its end is just a matter of convention without any substantive meaning. Cycles do not "begin" out of "normal" steady states. Cycles are the normality. As put by Mitchell: "Instead of a 'normal' state of business interrupted by occasional crises, men look for a continually changing state of business - continually changing in a fairly regular way. A crisis is expected to be followed by a depression, the depression by a revival, the revival by prosperity, and prosperity by a new crisis." (Mitchell, 1950, p. 44)

The best known representative of this view is the family of accelerator/multiplier models with regular variations. There are many variants of this model, with different degrees of formal rigor. (7) The basic proposition, however, remains to construct "a 'business cycle machine' complete in

itself, to which regular and therefore predictable oscillations is as natural as the tides or the seasons." (Shackle, 1965, p. 5).

If we can really state that "experience first showed periodical fluctuations to occur in the state of trade, and then economists set themselves the task of finding a deductive explanation of the phenomenon" (Hawtrey, 1953, p. 140) one great strength of this class of theories is to postulate a regular periodicity to the cyclical process.

In contrast to these perpetuum-mobile models we have propagation models. These theories propose that the adaptation of a capitalist economy to an exogenous change takes the form of a wave (or many waves). Contrarily to the preceding models, each cycle is seen as a historic individual, beginning when a state of rest or of "normality" is broken by an exogenous shock. The absorption of the shock is marked by leads and lags that define the wave-like shape of the process.

Propagation models can only explain the regularity of the stages of a given cycle but not the periodicity of a cyclical process. To explain a succession of cycles it would be necessary an additional theory explaining the source of shocks and why they would be repeated in a regular fashion. Between the end of a cycle and the beginning of the next there may be an indefinitely long waiting time.

The most influential version of a propagation theory of cycles is due to Schumpeter (Schumpeter, 1934; 1939). In his

theory, the exogenous disturbance is given by an innovation. This innovation will impact an economy that is supposed to be in a state of rest or, as Schumpeter conceived it, a state of general equilibrium. (8) Any disturbance has the power to generate oscillations: "It should be observed that for various reasons any influence acting on the economic process is practically sure to produce not a single dent but a wave-like motion extending over a longer time than it takes to reach the next disturbance, as well as, if it impinges on a particular spot, a vibration throughout the whole system." (Schumpeter, 1950, p. 3).

Schumpeter's theory cannot explain a cyclical process unless he explains how innovations are periodically introduced. As he himself acknowledged, this was not possible. (9)

Of the same nature as Schumpeter's, there are also models of propagation that emphasize disturbances created by economic policy. Most of the monetary theories of cycles are theories of propagation. Fisher, Friedman and more recently Lucas, conceive cycles as caused by the economy trying to adapt to monetary shocks (Hansen, 1951; Friedman and Schwartz, 1963; Lucas, 1975). (10)

Frisch (1933) and Slutsky (1937) tried to explore the formal properties of economic models that generated oscillating patterns of adaptation to exogenous shocks. In any case, the regularity of cycles, if it is real, can only remain a mystery in these models unless one presents a



cyclical theory of policy decision-making or endogenizes innovations. (11) Cycles cannot then be shown as being due to an independently-determined pattern of behavior of the economy but as the result of events, decisions and disturbances that take place in particular situations. On the other hand, if we deal with fluctuations instead of cycles with its attending burden of mechanistic connotations, the latter group of models becomes much more interesting than the former.

d. Models of Cycle and Expectations

Propagation models allow a role to expectations and decision-making that perpetuum-mobile models deny. Policy-generated cycles are obviously related to expectations. Innovation-induced cycles are no less deeply dependent on a specified mode of expectations formation.

Schumpeter tried sometimes to minimize the role of expectations and uncertainty in his model (e.g., Schumpeter, 1939, pp. 30/2). Innovations, however, by definition, involve uncertain expectations. Schumpeterian entrepreneurs are those who see what the others do not see. They are those who do not depend on cold mathematical calculations, because there are no bases to do them, but rely on a kind of animal spirits. It is not logical to postulate an objective connection between the environment and the introduction of innovations, and Schumpeter recognized it (12) Furthermore, if there was no uncertainty, there would be no shocks, nor

lags to adapt. The Schumpeterian entrepreneur has to create in imagination the sequels of a decision in order to make a choice precisely in the same way a Keynesian entrepreneur has. The expectations that induce the introduction of an innovation can only be created ex-nihilo. The environment can make it easier or more difficult for the entrepreneur to innovate, but it cannot explain the impulse to innovate itself.

In contrast, perpetuum-mobile models cannot allow any essential role to expectations and decision-making. Any such role would fatally break the regularity that is proposed as the main feature of the cycle.

This is obtained either by ignoring expectations or by just making some kind of perfunctory mention to them followed by their reduction to a current variable. This was Kalecki's choice (Kalecki, 1971). The cycle is then entirely constructed on the basis of relations between objective data: realized profits, realized investment, realized demand, realized income, etc. The assumptions as to expectations are then always very artificial. For some decisions, such as investment decisions, it is not plausible to assume that the entrepreneur merely projects current data into the distant future. Furthermore, one has to suppose agents never learn the error of doing just that. Take for instance Aftalion's explanation of the cycle:

"[Entrepreneurs] often forecast future prices on the basis of present prices and the present state of demand. That is

the source of their errors." (Aftalion, 1953, p. 131)

Because it takes time to construct fixed capital, those forecasts are often falsified during the interval between the decision and the maturation of the investment (ibid.).

II KEYNES ON THE STABILITY OF CAPITALISM

An appraisal of Keynes's views on the fluctuations of capitalism should begin by pointing out something obvious. There is no quarrel with the empirical schools. These schools did not defend any particular view of the cycle, and the series of data they collected were inputs to any kind of inductive exercise. Keynes offered a theory of instability and fluctuations to be contrasted to other theories not to statistical record.

We will suggest that although Keynes's writings before 1936 would place him right within the trade cycle tradition the conceptual distinction between short and long term expectations proposed in *The General Theory* led him to a drastic reevaluation of the relevance of cycle theory.

a. Before *The General Theory*

In his writings and interventions up to *The General Theory* Keynes proposed a fairly mechanistic model of propagation of exogenous shocks. The transition between two states of equilibrium was believed to take place through fluctuations of nominal income. This view was presented in

its most complete form in *A Treatise on Money*, where a Wicksellian theory of cumulative process is proposed.

The underlying vision put forward by Keynes was already significantly different from that of Wicksell, although the formalization of the models were still the same. Wicksell's was a model of monetary shocks. Cycles were caused by changes in banking policies that pushed market rates of interest away from the natural rates, determined by the real characteristics of the economy, such as intertemporal preferences and the productivity of capital. Keynes, anticipating the views of *The General Theory*, began his tale with an unchanged (conventional?) market rate of interest and asked himself what would happen if the natural rate of interest changed. Increased profitability would lead to new investments. Banks would accommodate the additional demand for money "out of the general slack of the system, or [through] ... a falling off in the requirements of the financial circulation without any change in the total volume of money." (Keynes, 1971, I, p. 271)

The expansion would proceed as long as it would take for the market rate of interest to catch up with the natural rate. This would happen "when the banking system is no longer able to supply the necessary volume of money consistently with its principles and traditions." (id., p. 272) The collapse may also come for other reasons (p. 273) leading in any case to a reduction of investments.

Two features of this picture should be stressed. Firstly, the original shock is left unexplained, it is exogenous to the model: "Something happens - of a non-monetary character - to increase the attractions of investment. It may be a new invention, or the development of a new country, or a war, or a return of 'business confidence' as the result of many small influences tending the same way." (p. 271) The proximity to Schumpeter's views are even more explicit when Keynes refers to fluctuations of investments in fixed capital: "Apart from the many minor reasons why these [investments] should fluctuate in a changing world, Professor Schumpeter's explanation of the major movements may be unreservedly accepted." (Keynes, 1971, II, p. 85).

The second feature to be brought to the fore refers to the treatment of expectations. After the initial shock, which is to be left unexplained, further investments are induced by the realization of profits rather than by the expectation of profits. "[P]rofits (or losses) having once come into existence become ... a cause of what subsequently ensues; indeed, the mainspring of change in the existing economic system." (Keynes, 1971, I, p. 126).

Keynes does not really distinguish production from investment decisions preferring to talk about "private enterprise". The defence of government spending during the recession is presented in these terms: "the first step has to be taken by official or semi-official authorities. Then, when profits have been restored to normal, private

enterprise can return." (Keynes, 1981, p. 150) If government accepts to spend "it will have the effect ... of restoring business profits more nearly to normal, and if that can be achieved then private enterprise will be revived." (id., p. 147) Also, "As regards psychology, I maintain that ... a large capital programme would increase the profits of business men, this would, after the first blush, have more effect on them than anything else." (p. 361) (13)

This approach to expectations followed the pattern that was usual in the business cycle tradition and in fact Keynes used it to develop, in *A Treatise on Money*, a model of a credit cycle. All the emphasis was given to the propagation process rather than the study of the original shocks themselves, and this was also in accordance with the business cycle tradition. Cycles were generated when expectations were disappointed and new decisions were supposed to follow from the disappointment. Expansion would result from the realization of profits higher than expected, and contraction would follow the perception of overestimated expectations. Errors of forecast, as in the theories of Aftalion, Pigou, Hawtrey and many others, were the cause of fluctuations.

b. Expectations in The General Theory

The General Theory represented a radical change of vision of the causes of fluctuation. Errors of expectations would either be assumed away, as in production decisions, or be

shown to be impossible to define, as in investment decisions. In any case, the role of expectations in Keynes's theory would be fundamentally different from the other approaches. There is nothing like Pigou's waves of irrationality or artificial assumptions such as Aftalion's. As Kregel has shown, by the thirties, "English economics had bypassed the simple view that mistaken expectations provided an adequate basis for a theory of the cycle." (Kregel, 1977, p. 497).

The point of departure of Keynes became, in *The General Theory*, the distinction between short and long term expectations and the decisions and plans they were the bases for. Short-term expectations are "concerned with the price which a manufacturer can expect to get for his "finished" output at the time he commits himself to starting the process which will produce it" (Keynes, 1964, p. 46). Long-term expectations are "concerned with what the entrepreneur can hope to earn in the shape of future returns if he purchases ... "finished" output as an addition to his capital equipment" (id., p. 47). One should note that "prices" are the variable about which short-term expectations are formed, while "returns" are the object of long-term expectations.

Short-term expectations oriented production decisions while long-term expectations were relevant for the formulation of investment plans. For both short- and long-term expectations, current data are only a piece of

information. In a monetary economy, where complete future markets cannot exist (Kregel, 1980), and crucial decisions are common (14) current data can never be sufficient to support forward-looking decisions. The importance of realised results on the formation of expectations is, nevertheless, different in each case. For short-term expectations "the most recent results usually play a predominant part in determining what these expectations are." (Keynes, 1964, p. 51). As a result, "the process of revision of short-term expectation is a gradual and continuous one, carried on largely in the light of realised results." (id., p. 50).

The close dependence of short-term expectations on realised results is explained by two arguments. Firstly, they orient routine decisions, such as production decisions, which are marked by a strong continuity: "It would be too complicated to work out the expectations 'de novo' whenever a productive process was being started; and it would, moreover, be a waste of time since a large part of the circumstances usually continue substantially unchanged from one day to the next. ... producers' forecasts are more often gradually modified in the light of results than in anticipation of prospective changes." (id., p. 51).

The second feature of short-term expectations is that there are formed for a specified period, a "day", "the shortest interval after which the firm is free to revise its decision as to how much employment to offer." (id., p. 47).

Therefore, being a repetitive, fundamentally replicable, activity the production process can be adjusted in the light of current data. One can judge the accuracy of expectations and "correct" them. Rational agents have no reason to insist on mistaken behaviors that have been falsified by the market. Current excess supply or excess demand lead to adjustments in production decisions in search of the best position. One knows at the end of the "day" whether or not that best position was achieved and can make then the corrections that may be deemed adequate. In this case, expectations may be found to have been "wrong". Keynes, however, will not care much for these mistakes because "unless the [short-term] expectation is in fact soundly based, it will soon be revised" (Keynes, 1973a, p. 457).

Keynes chose to assume in *The General Theory* that short-term expectations were always correct. This means that prices will be appropriately forecast. There may be some fluctuations due to mistaken price-expectations. They will affect production, not investment as Aftalion thought. Keynes considered these fluctuations to be largely irrelevant and chose to ignore them. (15)

Long-term expectations are a different story. "[I]t is of the nature of long-term expectations that they cannot be checked at short intervals in the light of realized results" (Keynes, 1964, p. 51). "Our knowledge of the future is fluctuating, vague and uncertain" (Keynes, 1973b, p. 113). The foundations of a "practical theory of the future" are

"flimsy" making it "subject to sudden and violent changes" (id., p. 114).

Realized results are much less important to shape long-term expectations than short-term ones. Keynes warns against taking current capital earnings as the "cause" of investments (Keynes, 1964, pp. 141, 145/6). In an uncertain world the past does not determine the future. A decision to buy an asset that will yield returns for an extended period in the future cannot be fully informed by realized results. These, if they are relevant, are necessarily insufficient. Knowing that available information is not enough to fully inform expectations the entrepreneur has to determine how much confidence he has on his own forecasts to decide whether or not to act (Keynes, 1964, p. 148). "Animal spirits", the urge to action, something about which "not much [can] be said ... a priori" (id., p. 149) becomes as important to decision as the expectations themselves. (16)

It does not make sense to conceive of "wrong" long-term expectations. These are not routine decisions, but crucial decisions. There is no a priori benchmark against which to judge these expectations. In contrast to production variations that constitute the "higgling" of producers in the search for equilibrium, investments in a sense create new equilibria. Short-term expectations formation may be likened to a process of discovery of what is. Long-term expectations is a conception of what may be. Ex-post

falsification of these expectations do not prove they were wrong when first conceived.

In any case, nothing in Keynes's theory of employment depends on mistaken long-term expectations. As Davidson has noted, "long-term expectations, by their very nature, are not readily checked in short periods by observing realised results" (Davidson, 1978, p. 23). There is no "period" associated to these expectations at the end of which one could conclude whether or not they were falsified. These are once-for-all decisions that as a rule cannot be continuously adjusted. The investment theories implicit in accelerator models or in theories such as Aftalion's approach investment decisions as if they were production decisions. That is why they are able to make the value of investments a function of current sales or profits. In a Keynesian framework this posture involves an unacceptable confusion between short- and long-term expectations.

c. Keynes and the Trade Cycle

The preceding discussion showed that the distinction between short and long-term expectations allowed Keynes to sharply distinguish those decisions that, although informed by expectations, can be seen as endogenous to the model and those that cannot. Because of its fundamental dependence on variables like the state of confidence, long-term expectations can only be exogenous. Investments are not induced by current or past values of the variables included

in the model. A trade cycle model with endogenously determined investment is, thus, incompatible with Keynes's theory.

All this means that perpetuum mobile models, such as the accelerator/multiplier, or any other obeying the same conception embodies a different vision of capitalism other than Keynes's. On the other hand, Keynes in *The General Theory*, as in his previous writings, presented a vision of the economy adapting to shocks that shares the same nature of other propagation models, such as Schumpeter's.

A propagation model of a trade cycle is presented at chapter 5 of *The General Theory*. In this chapter, Keynes describes the process of adaptation of an economy to a change in the state of long-term expectations which changes the amount of intended investments. We can assume that the investment orders are implemented immediately or, more realistically, that an investment 'plan', with a definite temporal profile of orders of capital goods, begins to be implemented. (17)

The change in investment changes aggregate income inducing a variation in consumption expenditures according to the multiplier. This means that following an increase in investments income will increase even more than it would be sustainable in the long period equilibrium corresponding to that new state of long-term expectations. Conversely, a contraction follows a reduction in investments. "Thus a mere change in expectations is capable of producing an

oscillation of the same kind of shape as a cyclical movement, in the course of working itself out." (Keynes, 1964, p. 49). (18)

We can go a little further ahead in this idea. Not only consumption is induced by a variation of income. In *The General Theory* Keynes seems most of time to restrict his concept of investment to purchases of fixed capital. This choice is justifiable if one wants to concentrate on the sources of shocks rather than on propagation waves. If we use; however, the three-fold classification of investments proposed in *A Treatise on Money*, in terms of fixed, working and liquid capital we can introduce into the propagation model above Hick's concept of supermultiplier (Hicks, 1950, pp. 61/2).

The supermultiplier considers both induced consumption and induced investment. Induced investment would not be the case of fixed capital, except for those sectors in which current signals may be enough to shape expectations (19) However, "the demand for working capital ... is governed by the average rate of employment of the factors of production ..." (Keynes, 1971, II, p. 99). In Keynes's estimation, "the value of working capital probably amounts to between 40 and 50 percent of a country's annual income" (id., p. 96), much more than the value of fixed capital investments.

Induced investments in working capital would then amplify the initial shock caused by a change in the marginal efficiency of capital increasing the depth of the

fluctuations caused by the consumption multiplier. The important phenomenon, in any case, would still be the exogenous changes in the state of long term expectations or the marginal efficiency of capital: "The schedule of the marginal efficiency of capital is of fundamental importance because it is mainly through this factor ... that the expectation of the future influences the present." (Keynes, 1964, p. 145).

That cycles are a question of adaptation rather than an autonomous mechanism operating continuously is suggested many times in *The General Theory* (e.g., pp. 99/100; 123; 124; and 218). Contrarily to past tradition, however, Keynes was now much more interested in the originating impulse itself than in propagation waves. The impulse, changes in the marginal efficiency of capital, are openly assumed to be exogenous to the theory, given that, as it was the case with Schumpeter, there is no way the theory can identify the laws, if there are any, of behavior of this impulse or its timing. The attempts by Keynes in chapter 22 of *The General Theory* show rather forcefully the futility of such an endeavour and the impossibility of making his view compatible with a perpetuum-mobile model.

The departure from the business cycle tradition is one of emphasis induced by a clearer identification of the source of fluctuations. If the impulses can be identified, explained and, perhaps, controlled, the waves themselves

become just a matter of adaptation lags, an interesting but secondary question.

c. Keynes and Anti-Cyclical Policy

The lags in the reactions of agents that cause cycles may be impossible to eliminate in a monetary economy. The space of anti-cyclical policy, therefore, can only be defined with respect to the change in the state of long-term expectations. Keynes's proposals on fiscal and monetary policies were devised to offer a stable environment where these expectations could be formed with lesser uncertainty.

In contrast to Schumpeter who believed that a crisis had a constructive role and should be left to perform that role Keynes surely considered crises an avoidable waste: "[Crises] do get rid of a lot of dead wood, but I have never been persuaded that that is a sufficient reason for having hard times" (Keynes, 1981, p. 319). In his view, "a slump of this kind [in 1930] has an inherent tendency to be overdone" (id., p. 387).

The remedy was to stabilize aggregate demand, by regulating aggregate income. Keynes's scheme of compulsory loans to finance the war were an example of what his policies were about. Taking income from private agents in periods of aggregate excess demand and giving it back when a recession could take place is "a principle of policy ... marking the line of division between the totalitarian and the free economy. For if the community's aggregate rate of

spending can be regulated, the way in which personal incomes are spent and the means by which demand is satisfied can be safely left free and individual." (Keynes, 1978, p. 123).

(20)

The aim of fiscal policy should be to guarantee the conditions for "having a stable long-term investment programme" (Keynes, 1980, pp. 322, 356). This would be obtained by the manipulation of the capital budget, leaving the ordinary budget balanced (id., p. 225). If the state can regulate the volume of investments, and thus aggregate spending, the role of monetary policy is little more than avoiding disruptions: "All that was necessary was to supply the market with all the liquidity it required, to produce the right psychological atmosphere and expectation ..."

(Keynes, 1978, p. 158)

Perhaps this policy would not eliminate fluctuations altogether. In an uncertain world for an economy to develop along a steady path some impossible requirements would have to be imposed on the ways expectations are formed.

Nevertheless, to create a stable environment through "the deliberate and purposive guidance of the evolution of our economic life" (Keynes, 1981, p. 27) would, according to Keynes, go a long way toward the avoidance of the useless waste and sufferance of crises and depressions. To achieve a conscious guidance of economic life was Keynes's lifelong concern. As he once wrote referring to the substitution of the gold standard, "I look forward with every emotion of

satisfaction to the prospect that the world may be forced in my lifetime to the substitution of a scientific control of the lever which works the balancing factor in our economic life." (Keynes, 1981, pp. 164/5).

NOTES

- (1) Even though Keynes indicated his belief that his method actually "transcended the awkward distinction between the long and the short period." (Keynes, 1979, p. 66).
- (2) On the limitations of these two methods when applied to social sciences, including economics, see Hicks, 1979, pp. xi/xi.
- (3) An "uncaused cause" in Shackle's terminology.
- (4) It should be mentioned that except for the institutions dedicated to statistical research, such as they existed in the United States and in Germany, business cycles never constituted a dominant concern among economists. Classical political economy concentrated on long term tendencies. With the decline of classical political economy, neoclassicism became the dominant view in economics. Studies on business cycles were made mainly outside the mainstream. They never seriously challenged the dominance of neoclassical views that constituted the orthodoxy against which Keynes wrote in 1936. In this sense it is neither fair nor correct to suggest that Keynes somehow "derailed" economic theory from its business-cycle-tradition path. As authors such as Schumpeter and Aftalion clearly show, most of the researchers on business cycles did not intend to challenge the foundations of neoclassical economics. On the contrary, some of the modern students of business cycles, like R. Lucas, see them as a confirmation of neoclassical tenets. The space disputed by Keynes was occupied by the latter, not by the business cycle tradition.
- (5) We are borrowing from Hawtrey only the periodicity criterion. For a fluctuation to be world-wide even if it is not a cycle, in the strict sense, it is sufficient that the source of the fluctuation, be large with respect to the global economy of which it is part. Great Britain in the XIXth. century or the United States in the XXth century can generate world-wide fluctuations independently of the propriety of the concept of cycles.
- (6) Hansen mentions that Irving Fisher, for instance, once "argued that there is really no cycle, but only erratic fluctuations in the purchasing power of money"; Hansen, 1951, p. 334.
- (7) Kalecki, Kaldor and Hicks have explored the formal possibilities of this model (Kalecki, 1971; Kaldor, 1940; Hicks, 1950). The most complete examination of the mathematical properties of the interaction between the accelerator and the multiplier was offered by Samuelson,



1939. Harrod (1936) is a semi-mathematical presentation of the fundamental ideas. Aftalion (1953) is an earlier presentation of the model entirely devoid of formal instruments.

(8) This is not an entirely inoffensive assumption. As a matter of fact Schumpeter depends in a crucial way on the existence of a tendency to a Walrasian equilibrium in order to complete his picture of a cycle. After the creative destruction has taken place, at the bottom of a recession, the tendency to reabsorb unemployed workers and resources that put the economy in its way to recovery is explained by Schumpeter as the gravitation toward a new general equilibrium state. Cf. Schumpeter (1939). "The units of the cyclical movements lie necessarily between neighborhoods of equilibrium." Schumpeter, 1950, p. 10. This is also what allows Schumpeter to insist on the possibility of identifying when cycles begin and end. Contrast this to Mitchell, above.

(9) "It might be thought that innovation can never be anything else but an effort to cope with a given economic situation. In a sense this is true. For a given innovation will satisfy them, and as a rule they can be satisfied in many different ways. Most important of all, they may remain unsatisfied for an indefinite time, which shows that they are not in themselves sufficient to produce an innovation. ... The problem of determining how far "necessity is the mother of invention" is a difficult one." Schumpeter, 1939, p. 60n.

(10) We are not mentioning Wicksell in this context. The cumulative process generated by monetary changes described by Wicksell was intended to explain changes in prices not the real changes in output and employment one usually associates with business cycles. Wicksell assumed the volume of production to remain constant during the cumulative process (Wicksell, 1965, p.212n). When discussing the business cycle, he excluded the "influence of monetary and credit systems on crises." (id., p. 223)

(11) It is important to distinguish theory from intuition in this respect. The intuition that innovations are crucial features of capitalism does not make it endogenous if the surging of innovations cannot be made a result of the theory itself. In this case, the timing of innovations remain indeterminated and, with it, the periodicity of cycles.

(12) See note 9, above.

(13) See also, in the same volume pp. 443/4 and 552. Discussing "abnormal psychology" by which agents would refrain from accepting practically any kind of risk, Keynes

again attributes it to material conditions rather than confidence or expectations. See Keynes, 1981, pp. 536/7.

(14) Crucial decisions are those that, once implemented, destroy the environment in which they were made. A world in which crucial decisions are possible, a non-ergodic world, is one where the relevant social processes are not stationary and non-probabilistic uncertainty reigns. On the concept of crucial decisions see Shackle (1979) and Davidson (1982/3).

(15) Inadequate price forecasts were the source of cyclical fluctuations according to Hawtrey. Keynes minimized these mistakes: "Entrepreneurs have to endeavour 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 endeavour to approximate to the true position by a method of trial and error. Contracting where they find that they are overshooting their market, expanding where the opposite occurs. It corresponds precisely to the higgling of the market by means of which buyers and sellers endeavour to discover the true equilibrium position of supply and demand. Now Hawtrey, as it seems to me, mistakes this higgling process by which the equilibrium position is discovered for the much more fundamental forces which determine what the equilibrium position is." (Keynes, 1973b, p. 182)

(16) The emphasis on the state of confidence or the animal spirits should not lead one to "conclude ... that everything depends on waves of irrationality. ... We are merely reminding ourselves that human decisions affecting the future, whether personal or political or economic, cannot depend on strict mathematical expectation, since the basis for making such calculations does not exist ..." (Keynes, 1964, pp. 162/3)

(17) "Thus an expansion in the capital-goods industries causes a series of increments in aggregate investment occurring in successive periods over an interval of time ..." Keynes, 1964, p. 123.

(18) Metzler (1947) presented a Keynesian model of business cycles entirely based on this type of fluctuation, exploring the behavior of inventories in the generation of the lags that shape the cycles.

(19) For instance, as in the case of the construction of a new plant in a given locality inducing fixed capital investments in housing and commercial activities such as shops, restaurants, supermarkets, and so on. On Keynes's general rejection of the accelerator see Keynes, 1973b, pp. 172/3 and 1983, pp. 790/8. This point is also made by Bolanovsky (1987).

(20) See also pp. 138, 147 and 480 on the deeper motivations of his war-finance proposals.

REFERENCES

- Aftalion, A., "The theory of economic cycles based on the capitalist technique of production", in A. Hansen and R. Clemence (eds.), *Readings in business cycles and national income*, New York: Norton, 1953.
- Boianovsky, M., "Uma nota introdutoria aos artigos de Kalecki, Keynes e Ohlin", *Literatura Economica*, forthcoming, 1987.
- Carvalho, F., "On the concept of time in Shackle and Sraffian economics", *Journal of Post Keynesian Economics*, 6 (2), Winter 1983/4.
- Carvalho, F., "Alternative analyses of short and long run in Post Keynesian economics", *Journal of Post Keynesian Economics*, 7 (2), Winter 1984/5.
- Carvalho, F., "Comment on Amadeo and Dutt's 'The Post Keynesians and the Neo-Ricardian Keynesians'", ANPEC, 1986.
- Castro, A.B., "Keynes e a Velha Tradicao do Ciclo", *Pesquisa e Planejamento Economico*, 16 (2), agosto 1986.
- Coordinating, A., *Keynesian Economics: In Search for first Principles*, London: G. Allen and Unwin, 1983.
- Davidson, P., *Money and the Real World*, London: MacMillan, 1978.
- Davidson, P., "Rational expectations: a fallacious foundation for studying crucial decision-making processes", *Journal of Post Keynesian Economics*, 5 (2), Winter 1982/3.
- Eatwell, J., "The Long-period theory of employment", mimeo, 1983.
- Friedman, M., and Schwartz, A., "Money and business cycles", *Review of Economics and Statistics*, 45 (supplement), 1963.
- Frisch, K., "Propagation problems and impulse problems in dynamic economics", in *Economic Essays in Honour of Gustav Cassel*, London: G. Allen and Unwin, 1933.
- Garegnani, P., "Reply to Joan Robinson", *Cambridge Journal of Economics*, 1979.
- Harrod, R., *The Trade Cycle*, Oxford: The Clarendon Press, 1936.

- Hawtrey, R., "The trade cycle", in G. Haberler (ed.), *Readings in Business Cycle Theory*, London: G. Allen and Unwin, 1950.
- Hawtrey, R., "The monetary theory of the trade cycle and its statistical test", in Hansen and Clemence (eds.), *op. cit.*, 1953.
- Hicks, J., "Mr Keynes and the Classics", 1937, reprinted in *Critical Essays in Monetary Theory*, Oxford: Oxford University Press, 1973.
- Hicks, J., *A contribution to the theory of the trade cycle*, Oxford: Oxford University Press, 1950.
- Hicks, J., *Causality in Economics*, New York: Basic Books, 1979.
- Kaldor, N., "A model of the trade cycle", *Economic Journal*, March 1940.
- Kalecki, M., *Selected Essays in the Dynamics of Capitalist Economics*, Cambridge: Cambridge University Press, 1971.
- Keynes, J.M., *The General Theory of Employment, Interest and Money*, New York: Harcourt, Brace, Jovanovitch, 1964.
- Keynes, J.M., *A Treatise on Money. Volume I: The Pure Theory of Money. Volume II: The Applied Theory of Money. The Collected Writings of John Maynard Keynes (CWJMK), vols. V and VI*, London: MacMillan, 1971.
- Keynes, J.M., *The General Theory and After: Preparation*, CWJMK, vol. XIII, London: MacMillan, 1973a.
- Keynes, J.M., *The General Theory and After: Defence and Development*, CWJMK, vol. XIV, London: MacMillan, 1973b.
- Keynes, J.M., *Activities 1939-1945. Internal War Finance*, CWJMK, vol. XXII, London: MacMillan, 1978.
- Keynes, J.M., *The General Theory and After: A Supplement*, CWJMK, vol. XXIX, London: MacMillan, 1979.
- Keynes, J.M., *Activities 1940-1946. Shaping the Post-War World. Employment and Commodities*, CWJMK, vol. XXVII, London: MacMillan, 1980.
- Keynes, J.M., *Activities 1929-1931. Rethinking Employment and Unemployment Policies*, CWJMK, vol. XX, London: MacMillan, 1981.

Keynes, J.M., *Economic Articles and Correspondence. Investment and Editorial.* (WJMK, vol. XII, London: MacMillan, 1983.

Kregel, J., "On the existence of expectations in English Neoclassical economics", *Journal of Economic Literature*, June 1977.

Kregel, J., "Markets and institutions as features of a capitalistic production system", *Journal of Post Keynesian Economics*, # (1), Fall 1980.

Lucas, R., "An equilibrium model of the business cycle", *Journal of Political Economy*, 83, 1975.

Lucas, R. and Sargent, T., "After Keynesian Macroeconomics", in R. Lucas and T. Sargent, *Rational Expectations and Econometric Practice*, Minneapolis: The University of Minnesota Press, 1983.

Mitchell, W. *Business Cycles. The Problem and its setting.* National Bureau of Economic Research, 1930.

Mitchell, W., "Business cycles", in G. Haberler, op. cit., 1950.

Moore, G., *Business cycles, Inflation and Forecasting*, Cambridge: Ballinger, 1983.

Samuelson, P., "Interaction between the Multiplier analysis and the principle of Acceleration", *Review of Economic Statistics*, May 1939.

Schumpeter, J., *Theory of Economic Development*, Cambridge: Harvard University Press, 1934.

Schumpeter, J., *Business Cycles*. New York: MacGraw-Hill, 1939. (abridged edition prepared by R. Fels).

Schumpeter, J., "The analysis of economic change", in G. Haberler, op. cit., 1950.

Shackle, G.L., *A Scheme of Economic Theory*, Cambridge: Cambridge University Press, 1965.

Shackle, G.L., *The years of high theory*, Cambridge: Cambridge University Press, 1967.

Shackle, G.L., *Imagination and the Nature of Choice*, Edinburgh: Edinburgh University Press, 1979.

Slutzky, E., "The summation of random causes as the source of cyclical processes", *Econometrica*, April 1937.

Wicksell, K., *Interest and Prices*, New York: Augustus Kelley, 1965.

PUBLICAÇÕES DO IEI EM 1987

TEXTOS PARA DISCUSSÃO

	Nº de páginas
107. PROCHNIK, Victor. <u>O macrocomplexo da construção civil.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 107)	143
108. TAVARES, Ricardo A.W., <u>Aritmética política ou natural? (Demografia: Fuga em quatro movimentos).</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 108)	26
109. TAUILLE, José Ricardo e OLIVEIRA, Carlos Eduardo Melo de. <u>Difusão de automação no Brasil e os efeitos sobre o emprego. Uma resenha da literatura nacional.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 109)	47
110. SILVEIRA, Caio César L. Prates de. <u>Plano Cruzado : A dramática reversão de expectativas.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 110).	30
111. TAUILLE, José Ricardo. <u>Automação e Competitividade: uma avaliação das tendências no Brasil.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 111).	150
112. AIMEIDA, Júlio Gomes de e ORIEGA, José Antonio. <u>Financiamento e desempenho financeiro das empresas industriais no Brasil.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 112)	119
113. PROCHNIK, Victor. <u>Estrutura e dinâmica dos complexos industriais na economia brasileira.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 113)	51
114. FONSECA, Manuel Alcino da. <u>Uma análise das relações estruturais da economia brasileira.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 114)	25
115. JAGUARIBE, Anna Maria. <u>A política tecnológica e sua articulação com a política econômica. Elementos para uma análise da ação do estado.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 115)	76
116. SOUZA, Isabel R.O. Gómez de. <u>Referencial teórico para a análise da política social.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão, 116)	28
117. FIORI, Jorge e RAMIREZ, Ronaldo. <u>Notes for a comparative research on self-help housing policies in Latin America.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 117)	28
118. BENETTI, Carlo. <u>Valor, excedente e moeda.</u> IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 118)	19

	Nº de páginas
119. MOREIRA, Maurício Mesquita. <u>Progresso Técnico e Estrutura de mercado: a indústria internacional de telecomunicações</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 119)	81
120. LOPES, Fernando Reis; SERRANO, Franklin Leon Peres. <u>Marx e a Mercadoria Força de Trabalho</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 120)	34
121. FIGUEIREDO, José B.; TAVARES, Ricardo. <u>O Componente Demográfico no Desenho das Políticas de Desenvolvimento Urbano</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 121)	35
122. CORIAT, Benjamin; SABOIA, João. <u>Régime d'accumulation et rapport salarial au Brésil - un processus de fordisation forcée et contrariée</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 122)	52
123. PROCHNIK, Victor. <u>A Contribuição da Universidade para o Desenvolvimento da Informática no Brasil</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 123)	39
124. FABRIANI, Carmen Beatriz; PEREIRA, Vera Maria C.- <u>Tendências e Divergências Sobre o Modelo de Intervenção Pública no Saneamento Básico</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 124)	45
125. TOLOSA, Hamilton C. <u>Condicionantes Econômicas e Opções da Política Urbana no Brasil</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 125)	34
126. SAIM, Cláudio; SILVA, Luiz Carlos Eichenberg. <u>Industrialização e Integração do Mercado de Trabalho Brasileiro</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 126)	51
127. CARVALHO, Fernando J. Cardim de. <u>Keynes on probability and uncertainty</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 127).	29
128. LEITE, Antonio Dias. <u>Plano Cruzado - Esperança e Decepção</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 128)	144
129. CARVALHO, Fernando J. Cardim de. <u>O Caminho da Revolução: O Treatise on Money na Revolução Keynesiana</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 129).	24
130. CARVALHO, Fernando J. Cardim de. <u>Keynes on the Instability of Capitalism and the Theory of Business Cycles</u> . IEI/UFRJ, Rio de Janeiro, 1987. (Discussão 130)	39

