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Uncertainty, Conventions and Short-Term Expectations*

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Contrasting different views on the topic, this article examines whether short-term expectations involve uncertainty, arguing in favour of an affirmative answer and thus invalidating any association with the rational or adaptive expectations hypothesis. It is then argued that the presence of uncertainty precludes any tendency towards equilibrium. After the notion of the state of short-term expectations is introduced, this conclusion is affirmed to be valid even if one considers that producers often follow conventional behaviour. Defending the view that uncertainty should be considered as gradable, the article maintains that conventions reduce but do not eliminate uncertainty.

INTRODUCTION

Several interpreters of Keynes, particularly those in the post-Keynesian tradition, have emphasized the uncertainty decision-makers must face. It is consensus among these interpreters that investment decisions, with the corresponding long-term expectations, involve uncertainty. Apparently there is less consensus in the case of production (and employment) decisions and the corresponding short-term expectations. Closely connected with this point is the issue of whether there is or not any tendency for short-period equilibrium to be achieved. This essay addresses these questions and relates the discussion to Keynes's notion of convention.

Some preliminary conceptual remarks are necessary. The meaning of uncertainty, which has also become controversial among post-Keynesians, is discussed in detail elsewhere (Dequech, 1997a). It is enough at this point to define uncertainty as a

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situation in which knowledge, due to paucity of evidence, is incomplete and unreliable as a guide to conduct. Uncertainty then implies the absence of a fully reliable probability distribution. In its strongest sense, uncertainty implies indeterminacy of the future, as the future is yet to be created by people's decisions. Following Harcourt (1987: 239), short period is here a theoretical notion[1]. Short-term expectations refer to what Chick (1983: 20) and Davidson (1978: 25, 35, 383) call a production period[2]. In its turn, equilibrium means here a state where short-term expectations are fulfilled (see Harcourt, 1987: 241). As Chick (1983: 21), Torr (1988: 21) and Harcourt (1994b: 21), I am referring at least to the expectations of those people who have power to effect change. For Keynes (1936: 27) the equilibrium level of employment is "the level at which there is no inducement to employers as a whole either to expand or to contract employment" (also Vercelli, 1991: 15)[3]. Equilibrium in this sense does not imply market clearing — see Davidson (1967: 504); also Chick (1983: 21), Asimakopulos (1991: 27) and Kregel (1992: 113). Equilibrium in Keynes's sense is often described as a state of rest. This notion is quite compatible with equilibrium as a state of fulfilled short-term expectations, as long as the rest position is seen as temporary (in the sense of Vercelli, 1991: 227) and no tendency towards the fulfilment of expectations is assumed[4].

1. UNCERTAINTY IN SHORT-TERM EXPECTATIONS: AN INITIAL STATEMENT

Many influential post-Keynesians give support to the idea that uncertainty must

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[1] For Harcourt, this notion underlay Keynes's analysis of the determination of employment, with some factors in the *ceteris paribus* pound, as in Marshall, "while 'run' referred to historical situations and events, to actual stretches of calendar time" (see also Carvalho, 1990a, and Chick, 1983: 17). Contrast this with Asimakopulos (1991: 25).

[2] This period includes the time required to decide about production, to produce the output and to (try to) sell it. The third stage is called by Davidson (1978: 47-9) the market period and it is similar to the period in which Marshall's (1890) market price is determined. The finished output is taken to the market and expected demand is contrasted with actual demand (except in the case of production to order). After the necessary inventory or price adjustments (if any), a new production period begins. Production cannot adjust to unforeseen demand in the same production period.

[3] Employers are the ones who ultimately decide employment: they have to spend money to hire labour. This can be seen as a particular application of the principle of the autonomy of expenditure, to which I refer below.

[4] However, it is conceivable that a production decision may be different from the previous one even after the expectations embodied in the latter have been confirmed. At any rate, this state of rest is not one in which "nothing changes in the system" (Patinkin, 1965: 315). Asimakopulos (1991: 27) rightly notices that Patinkin's definition refers not only to the dependent variable (employment) but also to other variables. Thus, Keynes's notion does not imply that money wages, e.g., do not change, but that their change does not clearly lead employment to alter. This is later acknowledged by Patinkin (Harcourt and O'Shaughnessy, 1985: 12). In 1965, however, Patinkin argued that Keynes meant that the system would not automatically correct itself towards full employment (p. 643). Asimakopulos (and Dostaler, 1995: 24) failed to criticize this point in Patinkin's interpretation.

be seen, both in reality and in Keynes's thought, as very widespread, and, of particular interest here, that uncertainty is also involved in production and employment decisions. See Davidson (1978: 12-4), Kregel (1980: 37; 1986: 160), Chick (1983: 5, 15) and Dow (1985: 160).

This idea that any future, near or remote, is uncertain is fundamentally connected, in economics, with the principle of the autonomy of expenditure, which is the basis for Keynes's refutation of Say's Law[5]. Referring specifically to production decisions, Davidson (1978: 21) stresses the central point: "it is on the revenue side [...] that most of the entrepreneurial uncertainty persists". In the case of the producer, his or her income (profit) depends on consumers' or other entrepreneurs' expenditures[6].

Short-period results for one person partially depend on other people's states of long-term expectations. The state of expectation depends on expectations themselves and on the confidence in them (I elaborate on this below). The state of long-term expectations is liable to change. In its turn, this possibility of change means, if it is acknowledged by producers, that the state of short-term expectations (a notion which I explain in section 5), including the confidence in the forecasts, is also subject to sudden changes. Producers of capital goods are the most typical decision-makers whose expectations are affected by this, since their short-term results most typically depend on long-term expectations (see Keynes, 1936: 47, 51; also O'Donnell, 1989: 240). More generally, short-period results depend on decisions by other people regarding their degree of liquidity preference. These decisions involve uncertainty and are, thus, liable to sudden changes[7]. This, together with the interdependence between the several sectors of the economy and also between the incomes of the different agents, is sufficient to imply that every producer's expectations involve uncertainty (see Dequech, 1997a).

On the other hand, it is uncertainty that makes those who have money indefinitely defer the decision of spending it. Concerning short-term expectations, it is enough to introduce uncertainty somewhere in the system for them to involve uncertainty.

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[5] In a draft of *The General Theory*, Keynes (CW XXIX: 80-1) wrote: "For the proposition that supply creates its own demand, I shall substitute the proposition that expenditure creates its own income". See also Wells (1991: 355) and Possas (1987: 28-9, 48-58).

[6] The "income of entrepreneurs at any time depended on [the] outcome of [their] prediction" (Keynes, CW XIV: 180, "Ex Post and Ex Ante"). "Income is created by the value in excess of user cost which the producer obtains for the output he has *sold*" (GT: 64, emphasis added; also 53).

[7] Keynes considered the marginal efficiency of capital and liquidity preference as independent variables as opposed to the dependent ones, which does not mean that they are completely independent from one another. Actually, Keynes (GT: 316; 1937: 118) argued that the conditions that lead to a pessimistic view about future yields of capital goods tend also to increase the liquidity preference. Moreover, investment decisions are decisions to buy illiquid assets and thus involve considerations of liquidity preference. On the possibility of interaction between independent variables in Keynes, see also Asimakopulos (1991: 124, 136) and Davis (1994: 169).

2. RATIONAL EXPECTATIONS?

Leijonhufvud (1983: 184-5) is a useful starting point to discuss a position contrary to this. He suggests that, in the case of short-term expectations, the rational expectations hypothesis (REH) is even softer than Keynes' assumption that short-term expectations are fulfilled. This would be so because, while Keynes assumed perfect foresight (according to Leijonhufvud), REH leaves room for random mistakes. A similar opinion is given by Begg (1982), Dutt (1987: 280 and n. 14) and Hoover (1997). Gerrard (1994: 331), even differentiating Keynes's definition of certainty-equivalence from the one prevalent in the REH literature, claims that Keynes adopted the frequency theory of probability in the case of short-term expectations and could do so because of the characteristics of the environment.

Against this kind of opinion it can be argued, in the first place, something similar to what Hamouda and Smithin (1988: 283) reply to Leijonhufvud (1983): "Keynes' neglect of short-term expectations is a matter of convenience rather than principle". It should be added, more specifically, that the assumption of fulfilled short-term expectations — "not due to any market mechanism — *just coincidentally*" (Davidson, 1978: 375, emphasis added) is, above all, a (hopefully) simplifying procedure. It is part of "a pedagogical device" aimed at demonstrating that "unemployment was not necessarily a short-run disequilibrium phenomenon", as Davidson (1978: 372-9) shows with the help of Keynes' 1937 lecture notes[8].

The way I read Keynes provides a second argument against those interpretations: the projection of the existing situation into the future, used by Keynes in his choice to "blur the distinction between realized and expected sales proceeds" (Davidson, 1978: 382), should be interpreted as a *convention*. This is an important point in this paper.

In chapter 5 of *The General Theory*, which deals with short-term expectations, Keynes (1936: 50-1) wrote: "although output and employment are determined by the producer's short-term expectations and not by past results, the most recent results usually play a predominant part in determining what these expectations are. 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. Accordingly it is sensible for producers to base their expectations on the assumption that the most recently realized results will continue, except in so far as there are definite reasons for expecting a change". This is exactly the essence

[8] See also Shackle (1967: 240), Kregel (1976: 213), Chick (1983: 71) and O'Donnell (1989: 242-3). Dutt (1991-92) properly acknowledges this and no longer claims that short-term expectations are formed *à la* REH. Contrast this literature with Littleboy (1991: 25). The idea that Keynes made simplifying assumptions in order to facilitate the demonstration of some results can also be used with respect to the passage of chapter 5 of the GT (p. 24, n. 3) in which Keynes seems to treat short-term expectations in terms of certainty-equivalents. Indeed, this is Darity and Horn's (1993: 20) interpretation (see also McCann, 1994: 105, 150n, 214).

of the convention that Keynes explicitly applied to the stock exchange[9]. Keynes did apply it to product markets, but did not explicitly call it a convention[10].

As a convention, the projection of the present and the recent past *arises from uncertainty*, that is, from the inadequacy of using the past to make fully reliable probabilistic calculations about the future. Thus, differently from the assumption that short-term expectations are realized, this convention is not merely an expository device, even if, as Davidson (1978: 382, 384) argues, it indeed makes things easier for Keynes. The convention of projecting the present and the past is a real-world response to uncertainty. As such, it is based exactly on something contrary to REH[11].

3. ADAPTIVE EXPECTATIONS?

Nor can it be argued that Keynes's (1936) convention in chapter 5 is some version of the adaptive expectations hypothesis (AEH) — see Benedetti and Gui (1983: 177), Rutherford (1984: 384) and Darity and Horn (1993: 22). To be sure, there is at first a similarity between the two, specially because for Keynes (1936: 51), as seen before, "the most recent results usually play a predominant part in determining" short-term expectations. However, contrary to what happens if expectations are adaptive, Keynes does not necessarily imply that people make systematic mistakes. People may be aware that the future is uncertain and then do not unconditionally use the past as a guide[12]. Keynes's convention has a clause that refers to the possibility of people abandoning the projection of the present and the recent past if they interpret something as indicating that they should do it[13].

As I understand it, this clause guarantees an inevitable degree of exogeneity to short-term as well as long-term expectations. Furthermore, not only the continuation of the convention but also the initial adhesion to it depends on partly exog-

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[9] See Keynes (1936: 151-2).

[10] In fact, it is so clear that the idea of convention used in chapter 5 is the same as used in chapter 12 that, since convention is a response to uncertainty, the quotation made above from chapter 5 can be used to reinforce the interpretation that Keynes saw short-term and not only long-term expectations as involving uncertainty.

[11] In a brief digression, the connection between convention and uncertainty should also be used against the view, apparently shared by Littleboy (1991: 30) and Davis (1994: 161), that conventions are used by Keynes to explain rigidities that prevent the economy from achieving full-employment equilibrium. Once uncertainty enters the picture, it cannot be argued that flexibility would necessarily lead to full employment. Actually, flexibility may make unemployment worse.

[12] Here, Keynes' approach contrasts not only with AEH but also with REH, at least with REH as used by new classical models of money business cycles stemming from Lucas (1975). See Davidson's (1990b: 75-6) criticism of these models for their implying that people are recurrently led to mistakes by some exogenous change and nevertheless continue to form expectations in the same way.

[13] Arena (1989: 30) acknowledges this clause but insists on characterizing short-term expectations as adaptive, which in my opinion creates semantic confusion.

enous factors. An optimistic disposition to face uncertainty (discussed below) is required if people are to adhere to the convention instead of preferring liquidity[14].

4. SIMPLIFYING ASSUMPTIONS AND EQUILIBRIUM

As Kregel (1976) and Davidson (1978) point out, Keynes occasionally accepted in *The General Theory* that short-term expectations could be disappointed and then corrected so as to lead the economy to equilibrium. Both Davidson and Kregel associate this situation again with a simplified model, used for expositional reasons, in contradistinction to a more realistic one (see also Harcourt, 1987). In this process of adjustment, it was assumed that long-term expectations did not shift. As part of this assumption, it was supposed that long-term expectations did not shift in response to that disappointment of short-term expectations, a supposition which, according to Kregel (1976: 215n, 224), Keynes seemed to consider reasonably realistic (but see Harcourt, 1994b: 21n). Even so, it should be noted that this is only part of a larger assumption. For the state of long-term expectations not to shift, it is necessary not only that there be no induced changes (e.g., induced by disappointment) but also no autonomous changes in it. Keynes's realistic model did recognize the possibility of such autonomous changes in the state of long-term expectations, so that trial and error may not lead to equilibrium. I argue more explicitly that only in that simplified model does "trial and error" lead to non-accidental equilibrium[15].

5. THE STATE OF SHORT-TERM EXPECTATIONS

Based on Keynes (1936: 148), one can say that the state of expectation depends on expectations themselves and on the confidence in them. For me, Keynes's treatment is not totally satisfactory, though. I try to develop this idea by, in my own way, making the distinction and establishing the relation between several determinants of the state of expectation (for a more thorough discussion, see Dequech, 1997b).

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[14] In this sense, Hamouda and Smithin (1988: 282) account for only part of the story when they argue that "in the context of Keynes' 'practical theory of the future' it is not so much a particular set of expectations that is treated as being exogenous (in the sense of being an independent variable), but rather the accretions of new and relevant information, the 'news'".

[15] See Davidson (1978: 375). Kregel (1976: 217) makes a similar point, but highlights the absence of induced changes in expectations as a condition for equilibrium to be achieved by the revision of expectations, while I emphasize *also* the absence of autonomous shifts, shifts which Kregel (1976: 219) himself states are possible in the realistic model. In the latter model, which Davidson and Kregel call Keynes's dynamic model, there is no need for equilibrium to be reached. The simplified model could be a favourable context in which to understand Keynes's references to trial and error and to people finding out where the equilibrium is (CW XIV: 27, 182). However, Keynes is not explicit and other interpretations of these passages have been suggested.

Besides, I wish to explicitly introduce the notion of a state of *short*-term expectations. This is not intended to represent what Keynes really meant.

The following discussion is based on the assumption that uncertainty is also involved in short-term expectations. This is important for the very distinction between expectations and confidence. Expectations are determined by three factors: knowledge, what I call the optimistic disposition to face uncertainty (via spontaneous optimism), and creativity. Confidence depends on how much uncertainty a person perceives[16] and how willing the person is to face or to avoid this uncertainty. Confidence is then a combined result of what I call uncertainty perception and uncertainty aversion. While uncertainty aversion is a result of the optimistic disposition only, part of uncertainty perception may have a more concrete basis in knowledge and thus may be independent of that disposition. The relation between the optimistic disposition and uncertainty perception is a difficult one to establish, but the former can be seen as also affecting the latter.

In the case of product markets, the optimistic disposition to face uncertainty is more clearly similar to what Keynes (1936: 161-2) called "animal spirits", but they are not exactly the same. To begin with, the situations I discuss are not reduced to the dichotomy between action and inaction, referring also to *different types of action*. The idea I want to convey is that of a *gradable combination* of optimism and (aspects of) confidence, or confident optimism. It is gradable merely in ordinal terms, not in the sense that it can be measured precisely. Except when referring to another author's use of the expression, this is what I mean by animal spirits here, and I use the two expressions interchangeably.

Moreover, animal spirits should be associated with confidence in *optimistic* expectations. In sum, neither are animal spirits just confidence, because they are associated with optimism, nor is confidence just animal spirits, because uncertainty aversion may have in part a more concrete foundation.

Creativity refers here to the mental creation of aspects of the future that are radically different from the present. These include innovations and other types of structural change, for example of a political or cultural character. Creativity may or may not be important for short-term expectations, depending on whether we define short period in a way that allows for the possibility of some type of structural change between the time of decision and the occurrence of actual results.

6. THE STATE OF SHORT-TERM EXPECTATIONS, CONVENTION, AND EQUILIBRIUM

Having introduced the notion of the state of short-term expectations, I can return to the previous discussion of different models in *The General Theory* and suggest

[16] The assumption that uncertainty exists is not strictly necessary. There are factors which make people *not* perceive uncertainty, such as the influence of economists who assume uncertainty away. However, its existence may be the major reason why it is perceived as existing.

the following addition. Even if the disappointment of short-term expectations does not shift the state of long-term expectations, it may shift the state of *short*-term expectations. In particular, if the convention of projecting the recent past into the future is being followed, a disappointment interpreted as large enough may lead the person to abandon the convention (since the adhesion to the convention is conditional). This change could cause a mistake for other people who depend on that decision. Furthermore, in another extension of Keynes's theory, I argue that even short-term expectations should be seen as liable to autonomous shifts (that is, shifts caused by factors other than the disappointment of those expectations), as they depend on animal spirits and (possibly) creativity.

This leads to another crucial point of the paper. If a question arises whether the following of conventions implies that the fulfilment of short-term expectations is still an accident, a coincidence, in Keynes' theory, the best answer is a qualified yes. It is true that conventions, as well as other institutions such as contracts and market-makers, give some stability to the economy and some justification to the very adoption of the convention of projecting the existing situation into the near future, so that the convention reinforces itself. Nevertheless, I argue that they reduce *but do not eliminate uncertainty*, and thus there is still no way of assuring a tendency for expectations to be realized[17].

Logically, for uncertainty to be reduced it has to be gradable. Keynes' position about this gradability is not totally clear, even though Keynes, when referring to his chapter on weight in *A Treatise on Probability*, uses the expression "*very* uncertain" (emphasis added) in the GT (p. 148n), which suggests that he treated uncertainty as gradable (also CW XIV: 113). This issue is also controversial among Keynes' interpreters. Some authors who read Keynes' later writings in the light of his previous work on probability suggest that uncertainty for Keynes is gradable and that the TP notion of weight would provide a measure of the degree of uncertainty. I have defended a position close to this, adding that something similar to weight could provide an ordinal but not necessarily a cardinal measure and that this measure is not completely objective. On the other hand, Davidson, in his recent work, is inclined to argue that uncertainty should not be seen as gradable, and he claims to be expressing Keynes' ideas in more modern terms. See Dequech (1997a) and the references quoted therein.

In my view, the uncertainty involved in short-term expectations may be less than in long-term ones, but it is not nil. Institutions, including conventions, can be seen as contributing to the fulfilment of expectations (particularly of expectations that project the recent past), so that this result would be less coincidental than in the absence of any convention, but still coincidental to some considerable extent[18]. One

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[17] This implies that the projection of the recent past is not a justification for the assumption of fulfilled expectations, as Chick (1983: 71, 80-1n) sees it.

[18] In this specific sense, one could say, with Carvalho (1992: 25), that "the idea of short-period equilibrium is more than just an analytical abstraction to Keynes", who argued that "short-run decisions [...] are made in an essentially repetitive fashion".

could say that the short period (partially) repeats itself because it is uncertain (and uncertainty gives rise to stabilizing factors such as institutions). However, one could not say that the short period, because it repeats itself, is not uncertain. As much as the short period has repeated itself, there is always a possibility that some people change their opinion regarding the future and/or the confidence with which they hold their opinion. This is partly exogenous, even if also conditioned by recent events. Realized results depend on people's decisions to spend or not to spend money. Confidence (including confidence in conventions) affects results because "our desire to hold money as a store of wealth is a barometer of the degree of our distrust of our own calculations *and conventions* concerning the future" (Keynes, 1937: 116, emphasis added). More generally, money is important as a link between the present and the future and, either in the long period or in the short, the non-neutrality of money and uncertainty stand or fall together[19].

Asimakopulos (1991: 48, 122) sees a very strong attraction between short-period equilibrium values and actual values in Keynes. Referring to the repetitive character of short period decisions, Carvalho (1992: 25) uses a similar image: "as long as the environment does not significantly change, learning can originate a kind of gravitation process toward equilibrium" (see also 1990a: 288). Furthermore, Carvalho (1990b: 645-6) believes that Keynes (1936: chapter 5) was referring to a process in which the possibility of learning implies that short-term expectations can be treated as endogenous. O'Donnell (1989: 254-5, 262) on occasion appears to accept this type of interpretation. The question is that the environment can change. The changes that can prevent a tendency toward equilibrium must include the emergence of new opinions about the *near and remote* future *and* the alteration of the *confidence* with which old opinions are held. In other words, the expectational parameters, including those which refer to the state of short-term expectations, are also part of the structure of the economy; they can change from one short period to another and lead to mistakes. There will inevitably exist doubts as to the appearance of these new opinions and states of confidence. Carvalho acknowledges that production is governed by expectations "which are intrinsically speculative, since they refer to the uncertain future behaviour of markets" (1992: 77) and, also based on Keynes (CW XIV: 130, quoted above), that the existence of money undermines any kind of gravitational process (1984-85: 232).

Moreover, there cannot be learning that generates a tendency toward equilib-

[19] Keynes (1936: 293) refers to "a theory of a system in which changing views about the future are capable of influencing the present situation. *For the importance of money flows from its being a link between the present and the future*" (original emphasis). He argues that when we discuss "the problems of the real world in which our previous expectations are *liable to disappointment*... the peculiar properties of money as link between the present and the future must enter into our calculations" (293-4, emphasis added). In 1933 he had written 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" (CW XIII: 408-9, emphasis added).

rium if what should be learned does not yet exist[20]. Even if the future turns out to be like the past, this would be because the decisions of people caused it to be so, and nobody can learn about decisions which have not yet been taken. On the other hand, the impossibility of such learning does not imply complete ignorance (Dequech, 1997a). We do acquire some knowledge of institutions, including conventions. The point is that, being based on limited evidence, this knowledge is not completely reliable as a guide to conduct.

Those who would like to insist that the short period is not uncertain might argue that the state of short-term expectations has no exogenous component. However, this position seems to me untenable if they at the same time accept that the state of long-term expectations does have such a component. As argued in section 1, short-term expectations involve uncertainty because they depend on decisions by other people regarding the purchase of capital goods and liquidity preference[21]. Short-term expectations too are "thoughts about thoughts", to use Shackle's (1972: 71) expression. They too are liable to changes, whose quality and intensity is affected by factors that are at least partly exogenous[22].

Keynes (CW XIV: 137) argued that one "must not confuse instability with uncertainty". I add that *one must not confuse stability with equilibrium*. Short-period equilibrium, where all producers have correctly forecasted their procedures, is highly unlikely. There is no tendency for this to happen. To be sure, a disequilibrium situation is not completely stable: those producers who made mistaken forecasts in the previous period may try to correct this by changing their production decisions. However, the situation may be stable in a weaker sense, in which these attempts at correction (for example, through the convention of projecting the existing situation) may take the economy to a position not very different from the current one. To my mind this is the proper way of supporting Keynes when he writes (1936: 249): our economic system "is not violently unstable. Indeed it seems capable of remaining in a chronic condition of sub-normal activity for a considerable period without any marked tendency either towards recovery or towards complete collapse"[23]. Stability in this weaker sense does exist, without equilibrium.

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[20] See Kregel (1986: 160). For a contrary position regarding short-period decisions, see Arestis (1992: 107). See also Feltz and Hoogduin (1988: 117), who argue, as I do, that conventions and other factors only reduce uncertainty without eliminating it, but apparently do not apply this comment to short-term expectations. Feltz and Hoogduin consider short-term expectations as endogenous because they can be derived from "objective circumstances", while I maintain that they are partially endogenous exactly because they can be based on a conventional response to uncertainty.

[21] Potestio (1995: 8-9) seems to have missed this point. She maintains that uncertainty precludes equilibrium and that the equilibrium method can only be used in the form of short-period equilibrium. The implication is that for her short-term expectations do not involve uncertainty, while the long period is indeed uncertain.

[22] Even if these changes are induced by the disappointment of short-term expectations, how people react to this disappointment depends on institutional (or cultural) and subjective factors. As much as institutions are incorporated into a model, some subjective aspects will necessarily be exogenous.

[23] Keynes also might seem to suggest the existence of some centre of gravitation when he states (1936: 254, emphasis added) that "we *oscillate*, avoiding the gravest extremes of fluctuation in employment

Someone may ask: what if we refer to equilibrium also in a weaker sense? Hicks (1980: 152) suggests a notion of equilibrium in which results fall within an expected range. Carvalho (1990a: 287-8) implicitly adopts a similar notion. Of course, the broader the range, the less unlikely will this weaker equilibrium be. However, uncertainty implies the possibility of mistaken expectations, even if expectations are defined in terms of a range. No tendency for equilibrium, even in this sense, may be affirmed to exist[24].

If this were to be what is meant by defending the idea of a centre of gravitation, I would clearly agree[25]. There are features of the economic system that are persistent and help stability in the sense mentioned above. I referred above to the stabilizing role played by conventions and other institutions[26], but I avoid linking them with centres of gravitation. So does Carvalho (1984-85: 224) when he writes: "the limitations [for future possibilities] emerge in the form of institutions and interrelations instead of gravitation forces". The problem is that the notion of centre of gravitation is perhaps more often associated with a process of convergence toward equilibrium. In this sense, the notion is incompatible with uncertainty and non-neutral money. The analogy is then misleading[27].

7. WHAT ABOUT KEYNES?

Keynes is not totally explicit in this respect. There are parts in his writings that might suggest that short-term expectations do not involve uncertainty. For this, one answer is that such an impression is given by simplifying procedures that Keynes adopted and not by something indispensable. I admit, though, that this is not the

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and prices in both directions, round an intermediate position appreciably below full employment and appreciably below the minimum employment". See Harcourt (1981) and Vickers (1994: 172-3). I discuss this next. See also Lim (1990) for an interpretation of this passage not in terms of a centre of gravitation.

[24] I am indebted to Mario Possas's view on this issue. This seems to be the point of Shackle's (1982: 438) rejection of Hicks's (1980) attempt to combine uncertainty and equilibrium. See also Harcourt and Sardoni (1995), who believe that Shackle got closer to Keynes than Hicks did. The rejection applies also to Littleboy's (1991, 1992) notion of conventional equilibrium. Stability in my weaker sense would exist with unemployment equilibrium if the latter were defined as a situation in which no forces tend to push employment towards full employment, as in Patinkin's Keynes (1965: 643) and Dostaler (1995: 24). However, Keynes and others merely refer to absence of change in employment, not change towards an optimum. The use of an optimum as a reference is not necessary to define equilibrium as a rest state.

[25] Harcourt (1987: 242) treats centres of gravitation as the sources of stability. He refers to "sustained and persistent forces" (1987: 239, 242; 1981: 252), the outcome of which being the centre of gravitation.

[26] Harcourt (1981: 261) refers to "established rules of thumb" and relatively stable pay-off periods or target rates of returns.

[27] Even though he continued comparing the determination of price by demand and supply to the pendulous movement of a stone hanging by a string, Marshall (1890: book 5, chapter 3) admitted: "If the person holding the string swings his hand with movements partly rhythmical and partly arbitrary, the illustration will not outrun the difficulty of some very real and practical problems of value". He added: "The unexpected may happen". These warnings should be extended to the macro level.

only possible interpretation. What Keynes really said is not always clear. Many of the ideas presented above are, in my view, close to what he should have said to be consistent with his emphasis on the uncertainty surrounding investment and liquidity preference decisions and on the non-neutrality of money[28]. These ideas are, at least (and hopefully), a relevant and coherent theory inspired by Keynes. The conventional projection of the past is an essential piece of this theory, but the same is not valid for: (1) the *simplifying* assumption of fulfilled short-term expectations; (2) the *simplifying* assumptions that there is no shift in long-term expectations and that disappointed short-term expectations are corrected toward equilibrium[29]. None of these elements is crystal clear in Keynes' writings (particularly in *The General Theory*), nor, consequently, is the distinction between them (if this distinction correctly portrays Keynes' thought). This distinction implies, among other things, that adopting the convention of projecting the existing situation does not depend on having correctly guessed the demand in the previous short period. For example, the recent results can be used to *try* to correct a wrong production decision. In this case, it is clear that conventions help to give some considerable degree of endogeneity to short-term expectations, but there is no guarantee that the revision of expectations through the projection of the past will turn out to be right[30]. Endogeneity, then, does not depend completely on expectations having been previously right; it is, of course, stimulated when and if this so happens.

Therefore, stability does not depend on the fulfilment of expectations either. While a situation in which mistakes lead to actions that cause further divergence between expected and realized variables is certainly not a stable one, this does not imply that stability means convergence. Many economists concern themselves with the question of the existence and stability of equilibrium. I have discussed here the possibility of *stability without equilibrium* (without equilibrium even as a tendency)[31], while at the same time keeping in mind instability as a potential occurrence, not as unlikely as equilibrium.

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[28] Admittedly, consistency would not require Keynes to agree with the details of my particular view of the determinants of the state of expectations.

[29] In contrast, quasi-perfect or stochastically perfect foresight is by definition essential to REH, in its strong version.

[30] There is no fully reliable probabilistic knowledge that even the convention will continue to be followed. As a particular example, the repeated use of the projective convention in an attempt to correct forecast mistakes depends on the individual's interpretation of the magnitude of the mistakes. As argued above, a mistake interpreted as large enough may lead the person to abandon the convention.

[31] Perhaps Joan Robinson may be seen as having, in her final years, a similar idea of stability without equilibrium. According to Harcourt (1994a: 142), "she thought that it was often unlikely that [the economy] would ever end up in an equilibrium though it might remain in a tranquil position for a while". The same might apply to Vickers' (1994: 180) brief reference to "a condition of quasi equilibrium at a position of less than full employment".

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