

J. R. Hicks on equilibrium and disequilibrium

Value and Capital revisited

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*This article aims at critically assessing Hicks' conception of equilibrium and disequilibrium, as developed in *Value and Capital*. In a first part, I argue that Hicks cannot be regarded as belonging fully to the Walrasian research programme in spite of his significant contribution to its development. I claim that this is due to his ill-fated will to introduce categories specific to the Marshallian approach in a Walrasian framework. In a second part, his "tripartite classification" interpretation of Marshall's equilibrium conception will be evaluated. It will be contrasted with an arguably more coherent interpretation giving pride of place to a binary opposition between market and normal equilibrium. Hicks' posterior reservations about his temporary equilibrium construct are then critically assessed.*

1 Introduction

The aim of this article is to revisit Hicks' most renowned book, *Value and Capital*, and in particular to critically evaluate its conception of equilibrium and disequilibrium. Three claims will be made. The first one is that Hicks cannot be regarded as fully belonging to the Walrasian research program in spite of the importance of his contribution to the latter as for this to be the case he should have accepted that the formation of temporary equilibrium takes place instantaneously through the tâtonnement procedure. On the contrary, he wanted to explain this formation process in Marshallian terms. In my eyes, this introduction of Marshallian categories into a Walrasian frame of analysis is the source of much confusion. My second claim is that Hicks' interpretation of Marshall's views on equilibrium is highly questionable. According to him, Marshall's conception is characterized by a tripartite classification of equilibrium concepts, separating the ultra-short, the short period and the long period equilibrium. In contradistinction I will propose a different interpretation emphasizing the existence of a binary opposition between market and normal equilibrium. My third claim pertains to Hicks' so-called 'fix-price' method. When returning to his temporary equilibrium construct in later writings, in particular *Capital and Growth*, he expressed the view that one of its main drawbacks was the assumption that market-clearing could be reached in every market within the 'week' time-span. Underlying this criticism lies a theory about the possibility of market rationing. This theory, I argue, does not stand up to scrutiny.

It is clear that my article's tone is mainly critical. Its aim, however, is not to discredit Hicks' work and his contribution to economic theory in general.¹ It is only a question of showing that although being a great innovator, he has also been responsible for many conceptual muddles which have left traces until today. Moreover, my aim is not to evaluate the evolution of Hicks' s conception of equilibrium over his long intellectual career. In fact my attention will focus mainly on *Value and Capital* as well as on his posterior writings wherein he returned to the themes developed in it.² Hence the reference in this article's title to J.R. Hicks.³

In the second part of the article, the Walrasian vein of Hicks – his temporary equilibrium construct, developed in *Value and Capital* – is analyzed. In the third part, I examine Hicks' sceptical afterthoughts about it. In the fourth part, his interpretation of Marshall is criticized on three scores – his account of Marshall's corn-market model, his "tripartite classification" interpretation of Marshall's equilibrium construct and the contrast he draws between Marshall's market-day and his own week category. Finally, in the fifth part of the article, I ponder upon Hicks' argumentation in defence of market rationing.

2 Hicks as the co-founder of the "Walrasian-Hicksian" equilibrium concept

Hicks' *Value and Capital* provides the canonical account of what I have called the Walrasian-Hicksian equilibrium concept (De Vroey, 1998a), whose cornerstone is the temporary equilibrium concept.⁴ The following passage of Ingrao and Israel provides a good introduction to it:

"The general equilibrium established in the system of markets at a given moment (conventionally the "Monday" of the week) is defined as temporary equilibrium, and the dynamic process is described as a sequence of temporary equilibria. On 'Monday', given the initial resources available as fixed capital and stocks of raw materials and as finished and half-finished products, prices are determined on all markets by the equilibrium of demand and supply. In the course of the 'week', the plans of production and consumption decided on 'Mondays' are put into effect, and the transactions are effectively carried out.

Since production and consumption plans extend beyond one week, the determination of prices in each temporary equilibrium depends, among other things, on expectations as to the future value of the price variable that contributes in each market to determine the agents' current supply and demand. The co-ordination of buying and selling plans obtaining on a single market day at equilibrium prices does not guarantee the coherence of such plans for future dates, formulated as they are on the basis of the not necessarily compatible and coherent expectations of the agents. Therefore the tâtonnement of prices leading to the temporary equilibrium of the single week does not guarantee the compatibility in time of the optimising decisions of consumers and producers" (1990: 239-240).

To Hicks, temporary equilibrium is identical to Walras' static equilibrium, except that expectations about the future are explicitly introduced into the picture.⁵ As in Walras, the possibility of market rationing is discarded:

"We are supposing that trading continues, on the Monday, until supplies and demands are brought into equilibrium (...). Since, we shall not pay much attention to the process of equilibration which must precede the formation of the equilibrium prices, our method seems to imply that we conceive of the economic system as being always in equilibrium. (...) So far as this limited sense of equilibrium is concerned, it is quite true that we assume the economic system to be always in equilibrium" (1946: 131).⁶

How does Hicks vindicate market-clearing within the framework of temporary equilibrium? It is here that he departs from the Walrasian perspective by refusing to resort to the tâtonnement assumption. The latter is hardly mentioned in *Value and Capital* yet is briefly discussed in Hicks' article in *Econometrica* on Walras ([1934] 1983). Whereas in this article he clearly points out the respective weaknesses of both the Marshallian and the Walrasian price formation methods, in *Value and Capital* he seems to find the Marshallian line more appealing. Not that he adopts it as such, his plan being rather to amend it, in particular by replacing the market-day by the week category.

On the other hand, the fact that supply and demand always match during a given "week" did not make the disequilibrium concept irrelevant to him. The latter, he believed, should rather be related to the realization of another equilibrium concept referring to the chain of successive temporary equilibria, "equilibrium over time". Thus, if the possibility of market disequilibrium is excluded, intertemporal disequilibrium is seen as conceivable and considered as a disequilibrium in a broader meaning:

"In this (analytically important) sense, the economic system can be taken to be always in equilibrium; there is however another wider sense in which it is usually out of equilibrium, to a greater or less extent" (1946: 131).

"The wider sense of Equilibrium – Equilibrium over Time, as we may call it, to distinguish it from the Temporary Equilibrium which must rule within any current week – suggests itself when we start to compare the price-situation at any two dates. A stationary-state is in full equilibrium, not merely when demands equal supplies at the currently established prices, but also when the same prices continue to rule at all dates – when prices are constant over time. It might be thought at first that the same criterion (constancy of prices) would be applicable to a changing economy as well; but this is clearly not the case. For there is a more important test than mere arithmetical sameness or difference, which does imply constant prices in a stationary economy, but does not necessarily imply constant prices in an economy subject to change. This is the condition that the prices realised on the second Monday are the same as those which were previously *expected* to rule at that date" (1946: 132).

The criterion for the realization of equilibrium over time consists of the fact that any changes of price which may occur happen to correspond to agents' expectations (this obviously being valid in the case of an absence of change). In other words, expectations should not be disappointed.

"The degree of disequilibrium marks the extent to which expectations are cheated, and plans go astray. No economic system ever does exhibit perfect equilibrium over time; nevertheless the ideal is approached more nearly at some time than at others" (1946: 132-3).

3 Hicks' later reservations about the temporary equilibrium construct

Hicks was an author who liked to come back to his former writings and re-evaluate them with the benefit of hindsight. This is what he did in *Capital and Growth* for the equilibrium concept advanced in *Value and Capital*. According to him, three types of criticisms could be levelled against his temporary equilibrium model. They relate respectively to his conception of uncertainty (i.e. the fact that expectations are not framed in a probabilistic way), the assumption of perfect competition and, finally, the assumption of flexible prices, deemed to be responsible for the ever realization of market-clearing (1965: 69, seq.). Contrary to present-day authors to whom only the first of these items would be considered a serious shortcoming, Hicks was mainly preoccupied with the third one. In fact, to him, it constituted his model's basic flaw:

"We (Lindahl and I) were following Marshall in treating prices as determined (in the short period, or single period) by 'equilibrium of demand and supply'. Our single period (or 'week') was shorter than Marshall's 'short period'; this made the equilibrium assumption still more dangerous. Marshall, it was argued above, may have been justified in the use that he made of it, in 1890; but to continue with it in the nineteen-thirties, and to make even stronger use of it, was very dangerous indeed. One of the reasons for this is that which came to be emphasised by Keynes: that there are markets, especially the labour market, in which prices are 'sticky'. The assumption of demand and supply equality, in every period, must for

some markets be peculiarly unsatisfactory. In Keynesian terms, the Temporary Equilibrium Theory is a Full-Employment category. But this is not all. There are many non-labour markets, in which Temporary Equilibrium gives a wrong impression of the market's working, in which it does not tell the story right. As a consequence, it leaves out parts of the dynamic problem in which we have a right to be interested. We have got to find some way of dealing with them" (1965: 73-74).⁷

Postponing the discussion of the meaning and validity of the fix-price argument to part five of the paper, let me limit myself here to two remarks which are interesting for the purpose of my paper. First, whereas in *Value and Capital* Hicks opposes the concepts of temporary equilibrium and equilibrium over time, in *Capital and Growth* he rather speaks about "equilibrium at a point of time" and "equilibrium over a period of time". Although this difference was probably purely terminological to Hicks, it can however also be interpreted as pointing to some substantive difference. At stake is the respective meaning of "temporary equilibrium" and "equilibrium at a point of time". In *Value and Capital* Hicks assumed that the formation of temporary equilibrium arises over a certain span of time, the famous "Hicksian week" to which I shall return later. However, this connotation of duration is absent from the concept of "point-in-time equilibrium". I, for one, would view this as progress, as thereby the Walrasian rooting of temporary equilibrium is more strongly emphasised (in as far as one accepts that the Walras-Hicksian approach rests on the intertwining of two distinct time categories, that of "logical time" and of "real time").⁸

The second point to which I would like to draw attention to is the following. In *Value and Capital*, Hicks suggests that the concepts of temporary equilibrium and equilibrium over time are organically connected. As a result, Hicks' seems close to what Donzelli (1989) calls the stationary equilibrium conception.⁹ In *Capital and Growth* a different viewpoint is proposed. Here Hicks emphasizes the point that the equilibrium hypothesis requires the existence of some tendency towards equilibrium (1965: 17). Equilibrium ought to act as an "attractor". Although this is in itself of course no departure from the stationary approach, Hicks however now considers that this attractor feature is absent when it comes to equilibrium over time. The latter, he claims, should rather be viewed as a reference against which any time path of successive temporary equilibria might be gauged.¹⁰ As a result, a difference between effectively existing time paths and the intertemporal equilibrium time path does not generate any feed-back effects.¹¹

The use of the equilibrium/disequilibrium terminology in connection with intertemporal equilibrium becomes questionable against this background. Hicks, for one, continued to use these terms whereas, to be true to his new claim, he should have ceased doing so. Be what it may, if one takes his remarks seriously, one should conclude that the idea of convergence between the two equilibria, such as is present in the classic and Marshallian approaches, is irrelevant for the Walrasian-Hicksian approach, in spite of the fact that here also two concepts are separated.

4 Hicks' interpretation of Marshall¹²

Three points will retain my attention in this section: Hicks' interpretation of Marshall's corn-market model, his interpretation of Marshall's equilibrium conception and the contrast he draws between Marshall's market-day and his own week category. On all of them my stance will be rather dismissive.

4.1 The formation of market equilibrium in the corn market

In chapter II of Book V of *The Principles* Marshall describes the operation of a daily corn market in a small provincial town. Marshall's analysis is fully endorsed by Hicks. What the latter particularly seems to appreciate is its realism, the decentralized picture of the

functioning of markets given. At its start, agents are portrayed as being unaware of equilibrium values. Bargaining then begins, exchanges at "false prices" are carried out until finally equilibrium values arise. Such a process is supposed to proceed over time, though over only a short time-span – a certain number of hours – as the reference to the "day" suggests:

"Buyers and sellers are supposed to come to the market without knowledge of the equilibrium price – the price that will equate supply to demand. Transactions may thus take place, initially, at arbitrary prices. But it is Marshall's contention that the final price, at which the last transaction will take place, will be approximately the same as the equilibrium price. Even though there are initial sales at 'false' prices, the final price will be much the same as that which, if it had been fixed at the start, would in fact have proved to be capable of being carried through" (1965: 54).

The problem of Marshall's account is that it is too beautiful to be true: the gain is on all fronts, on that of realism as well as that of theoretical tractability. On the one hand, the market is depicted as functioning in a decentralized way without the contrived introduction of a third-party auctioneer. On the other hand, all finishes well. Even though agents are assumed to be ignorant of equilibrium values and trade at false prices, the same values prevail at the market's closure which would have arisen if trade had been organized under the auctioneer's aegis.

As is well known, such a result is possible only as income effects are discarded, this itself being due to the adoption of the assumption that the marginal utility of money is constant. Admittedly, as argued by Marshall, this assumption has some common sense as well as empirical foundation going for it, in so far as purchases in the market under analysis represent a small fraction of total expenditure. Nonetheless, its theoretical drawbacks are important. First, as pointed out, the analysis only holds for purchases representing a small fraction of total expenditures. Second, with such an assumption, the generalization from partial to general equilibrium analysis becomes very difficult, if not impossible. Amongst others, it generates a difficulty as far as the organization of trade underpinning the Marshallian economy as a whole is concerned. To this end, it would be necessary to establish the order in which consumers visit markets beforehand. It would then turn out that, whereas the constant marginal utility of money might be a plausible assumption for the first markets visited, it would become less and less valid as the number of markets which remain to be visited falls.

In my eyes it is thus necessary to give Marshall's false trading argument less weight than it usually receives in the writings of his commentators. On the one hand, the disturbance that these exchanges generate is relatively minor as no result of market rationing ensues. On the other hand, it should be realised that its true rationale is to attenuate the heroic character of the perfect information assumption governing the first phase of Marshall's reasoning. If the same result can be obtained with an alternative more realistic assumption one may more heartily use the outwardly extreme assumption.

Marshall begins his discussion of the corn-market by assuming perfect information — although he hardly trumpets this assumption — to shift to false trading in a second stage of his reasoning. Once it is perceived that it is the former rather than the latter which should be considered as the linchpin of the formation of market equilibrium, a series of implications must be drawn. First, Marshall's statement that agents are engaged in a "haggling and bargaining" process whereby they try to fool each other should be viewed as a mere rhetorical screen of smoke. Such behaviors are useless if all agents hold perfect information; if everybody is able to calculate equilibrium values at once, no trade will occur at other values. Likewise, the idea that the market-day evolves in real time turns out to be a superfluous varnish. If traders are equipped with perfect information, it is better to consider that the operation of the market does not imply any duration. It is simply a question of putting Oeckam's razor to work: if the length of the market-day exerts not influence on its results, its unfolding is better viewed as being carried out in

logical time. One might have expected Hicks to be more aware of these points than Marshall, yet this is not the case. He had no qualms about endorsing Marshall's constant marginal utility of money assumption. Similarly, he sweeps the objection of income effects under the carpet, declaring prematurely that one has all the reasons to believe that they are of little significance. The only argument given in favor of their dismissal is that the opposite would have grave implications, as then, he says, the system of formation of prices would lack any intelligibility (1946: 129).

4.2 Marshall's conception of equilibrium: a tripartite classification or a dual contrast?

To Hicks the hallmark of Marshall's equilibrium conception is what he calls its tripartite classification separating the ultra-short, the short- and the long-period equilibrium – a typology which is still widely used at the present day. Hicks himself did not bother to reflect on the grounding of this taxonomy as if they were obvious. For my purpose it is necessary to make things more precise.

In Hicks' interpretation, these three categories should be regarded as sub-divisions drawn by the economist on the time-scale for the purpose of his inquiry. Although this is not explicitly mentioned, the basic unit of this scale has to be smaller than the smallest time category selected, i.e. the ultra-short period. Thus, defining the basic unit of time as being an hour or a minute, the ultra-short period could then be defined as lasting e.g. a day. These sub-divisions are conventional and valid for all markets across the economy. The amount of time categories that can be considered is arbitrary. According to Hicks, Marshall retained three of them, a viewpoint which will be questioned below. In his opinion the ultra-short and the long-period categories were of little interest or, at least, received too much attention in the past (especially the long-period). It was time, he believed, to shift the attention to the short-period; hence its adoption as the unitary period of his analysis.¹³ Moreover, to Hicks the length ascribed to each of these time categories was a matter of convention. He, for one, defined the short-period as lasting one week, though admitting that longer time-spans could do as well.

Although Hicks' interpretation has some rooting in Marshall's writings, I claim that it is not the only possible interpretation and certainly not the most coherent one. In my eyes it suffers from two basic flaws. First, it misses what to me is the hallmark of the Marshallian conception of value, namely its being characterized by a binary opposition between market-day and normal equilibrium, respectively. This is a relationship of hierarchy with normal (market) equilibrium being the higher (lower) or more (less) fundamental concept. Normal equilibrium exists whenever the market outcome in a given branch is such that firms lack incentives to change their behavior (Marshall's attention focusing more on firms than on households). It then turns out that market-value coincide with normal values. Market equilibrium, in turn, is obtained when supply and demand match: Whereas market-day equilibrium is supposedly always realised, this is not necessarily the case for normal equilibrium. In effect, another important feature of the Marshallian equilibrium conception is its acceptance of effectively existing states of disequilibrium, i.e. states wherein market values (which are market-clearing values) do not coincide with normal values. In this perspective, it is central to view the two equilibrium concepts as interrelated. Whereas it is true that the higher equilibrium concept can be studied in isolation, in as far as attention is concentrated on existence only, the reverse is not true: market-day outcomes cannot be considered alone. Actually, they are not interesting as such, especially in view of the assumptions which they are built on. The only interesting issue about them is their relationship to the higher equilibrium concept – are they to be interpreted as an equilibrium or a disequilibrium with respect to the normal equilibrium?

An additional semantic complication ought to be mentioned at this juncture. Today, neither the market equilibrium nor the normal equilibrium terms remain in use. Nonetheless these concepts designated in Marshall are still present under a different name. The earlier market/normal equilibrium divide is now to be found under the label of short period/ long-period equilibrium, these terms having however no longer their earlier meaning. The short-period equilibrium is now meant to be formed quasi-instantaneously (and corresponds to Marshall's market-day equilibrium), whereas the so-called long-period equilibrium would designate Marshall's normal equilibrium.¹⁴ This shift in meaning is to be found in Hicks' writings yet with one crucial difference – the fact that the organic relationship between the two equilibrium concepts is lost. This brings me to the second flaw I wish to denounce.

The recurrent presence of the Marshallian short/long-period terminology should not be interpreted as meaning that Hicks only borrowed these concepts while leaving them unchanged. This may well be what he believed he did, if so he was however mistaken. The point he missed is that no specific equilibrium concept should be associated with the short- and long-period equilibrium terms in Marshallian theory. Both refer to normal equilibrium. Marshall himself generally used the complete expression of "normal equilibrium of the short (or of long) period", which is an improvement upon talking about the equilibrium of the short or long period and omitting the "normal" modifier. On reflection, the "short period equilibrium" or "long period equilibrium" expressions are an abuse of language, in so far as their use suggests that an equilibrium concept different from normal equilibrium is thereby designated. There is of course a difference. However, rather than concerning the nature of equilibrium, it bears on the fact that, subsequent to the occurrence of a shock on normal demand, two types of adjustments towards a new normal equilibrium are distinguished according to the time-length involved, itself the result of characteristics of the shock. If it is such that the proper reaction to it involves only changes in variable capital – i.e. firms' managers believe that the shock will not last long enough for justifying changes in fixed capital – one might speak of a short-period adjustment process. Similarly, if the expected duration of the shock is such that it is worth changing fixed as well as variable capital, we have what should be called a long-period (or long-lasting) adjustment process. In other words, the length factor has to do with the adjustment period rather than with the nature of the equilibrium involved.

To conclude, Hicks' interpretation of Marshall's equilibrium and time categories should be criticized on three scores. First, in my view he was wrong in arguing that the analysis could proceed in terms of any of the three equilibrium concepts found under Marshall's pen, taken in isolation from the others. Second, he changed the meaning of short- and long-term concepts, as found in Marshall. In my interpretation, the Marshallian short- and long-term categories are based on a technological criterion. They have an industry-specific character, since they designate the time necessary to implement a specific change in the quantity of goods produced by changing either the variable or the whole stock of capital. By contrast, in Hicks' view they refer to an identical length of time, conventionally defined and supposedly valid throughout various industries. Third, he initiated a type of analysis wherein the lower equilibrium concept is studied independently from its connection to the higher equilibrium concept (long-period equilibrium).

4.3 Hicks' "week" versus Marshall's "day" concepts

Hicks claims that his own way of conceiving the formation of temporary equilibrium values is Marshallian in spirit. He admits however to one difference, namely the replacement of Marshall's market-day category, which he assimilates to his own ultra-

short period, by the week category. In this sub-section, I show that this assimilation is wrong and that on scrutiny Hicks' account is unsatisfactory.

As well known, the "week" is a framework of time specifically devised by Hicks as underpinning his temporary equilibrium analysis. It is defined as follows:

"Even if we decide to admit some small variability of output into our shortest period, nevertheless that shortest period (which I shall call a Week, to distinguish it from Marshall's Day) still needs to be clearly conceived and clearly defined. I shall define a week that period of time during which variations in prices can be neglected. For theoretical purposes this means that prices will be supposed to change, not continuously, but at short intervals.(...) A convenient way of visualising this assumption of constant prices during the week is to suppose that there is only one day in the week (say Monday) when markets are open, so that it is only on Mondays that contracts can be made. Contracts can indeed be carried out during the week (goods can be delivered, and so on); but no new contracts can be made until Monday week. Monday's prices will therefore rule during the week, and they will govern the disposition of resources during the week" (1946: 122-3).

Four critical remarks should be made about Hicks' construct. First, contrary to outward appearances, his week should not be understood as coinciding with the period during which markets are opened. Likewise, it would be incorrect to view it as comprising several such opening periods. In fact, the correct way to interpret the week is to view it as designating the interval separating two periods of exchange. That is, since in Hicks' story trade takes place each Monday, the interval between two successive Mondays.

Second, it is worth delving into the exact difference between Hicks' and Marshall's positions. Clearly, Hicks' week and Marshall's day cannot be put on the same footing as the first designates an interval between two trading periods whereas the second designates such a trading period. Hence Hicks' claim that he replaced the day by the week is untrue. In fact, in as far as the period of opening of trade is considered, it turns out that Hicks uses the same category as Marshall, i.e. the one-day trading period. Moreover, if Marshall's corn-market is a daily market, this means that in his story the interval between periods of exchanges is of one night. It thus appears that the real difference between the two standpoints lies in the fact that Hicks replaces the one night interval with one comprising six days and nights.

Third, since Hicks adopts the Marshallian point of view according to which the unitary opening period of markets lasts a day, the question already raised above about Marshall concerning the conception of time – real or logical time – underpinning his analysis should be re-addressed here. Both Marshall and Hicks claim that the situation they analyze takes place in real time and involves some duration. However, as stated above, readers have no reason to follow suit. Clearly, the argument used above apropos Marshall should apply to Hicks as well. His real-time characterization is a rhetorical addendum rather than a necessary ingredient of his model. The image of the Monday as comprising a certain number of hours should rather be interpreted as a metaphor for some trading operation taking place in logical time. In Hicks' as in Marshall's model, the period of opening of the markets must thus be brought back to a point of time.¹⁵

Fourth and finally, if the week is regarded as an interval, the proposition that prices remain unchanged during this interval, with its connotation of rigidity is unfortunate. ("Monday's prices will therefore rule during the week, and they will govern the provision of resources during the week" (1946: 123)). Contrary to appearances, there is nothing profound in such a statement. If, by definition, transactions can be done only during the periods of opening of the markets (that is, on Mondays), it proves to be a truism. Whereas prices do not change, this is not due to any rigidity but simply to the fact that markets are closed.

To conclude, it turns out that Hicks used the week concept in an intuitive way, without realizing the need to clarify it. As a result, the reader is prompted to interpret it as

he wishes – e.g. as designating the duration of opening of markets or as comprising a succession of such openings, whereas neither of these interpretations is valid.¹⁶ The outcome is then odd: whereas Hicks claims that he departs from Marshall by abandoning his market-day category, he in fact does nothing of the sort. The difference between the two authors relates only to the duration of the interval separating two trading points. There is thus a significant gap between Hicks' self-proclaimed and the really existing difference from Marshall.¹⁷

5 Market rationing

In *Value and Capital* temporary equilibrium goes along with market-clearing. As seen this was the main reason why, later on, he became dissatisfied with this concept. The aim of the last part of this paper is to evaluate Hicks' standpoint. I will claim that Hicks' self-criticism is less biting than he claims it to be. Rather, its interest is negative, as it allows to bring to the forefront that no consistent scenario for the formation of temporary equilibrium prices exists other than *tâtonnement* or the assumption of perfect information.

The gist of Hicks' reservation about temporary equilibrium can be summarized by stating that the following condition ought to be satisfied in order for temporary equilibrium to be able to be characterized as featuring market-clearing: in every market, prices must be sufficiently flexible within the time-span of the unitary period, i.e. the week, to allow the adjustment towards market-clearing to come to a close. To Hicks, there is little reason for this to be the case. Although he is hardly explicit as to why this would be so, his argumentation can be reconstructed as follows.¹⁸

The possibility of market rationing depends on the combination of two elements. The first one pertains to the duration of adjustment which is assumed to be specific to the given real-world market under consideration. To Hicks, dissimilarities in the duration of adjustment result from either institutional factors – including moral or sociological ones – or technological ones, such as the "time to build" element, implicit in Marshall's reasoning. In the case of markets for non-produced goods or the labour market only the institutional factors are at work. The frequency of market openings is a good example of these factors: if in a given market this frequency is low – e.g. some markets open only annually – the duration needed for the effects of a shock to be absorbed is at maximum one year, according to when the shock takes place (since its absorption cannot occur until the next market opening). Hicks seems to think that labour markets are characterized by such long intervals between trading periods. By contrast, in markets where this frequency is high – e.g. in stock markets – shocks are taken into account very quickly, as the next market opening is always proximate. Turning now to the second element to be considered, it pertains to the choice made about the unitary or single period. As seen, to Hicks this concept refers to the time span under which a given market or economy is analyzed. Its definition is a matter of convention, fixed by economists in relation to the specific aim they are pursuing.

The possibility of market rationing then results from the combination of these two elements. It exists as soon as the market specific adjustment time exceeds the unitary period in a given market. That is, the forces leading to the equalization of supply and demand have not had enough time to exert their full effects within this period. To refer to the "time to build" factor, if the adaptation to the shock requires a month and markets open every week, during the first openings following the shock, the adjustment will not be realised. To refer to the frequency of market openings, market rationing is possible as soon as the duration of the interval between two market opening points (e.g. one month) exceeds the duration assigned to the unitary period of analysis (e.g. one week). Clearly, the shorter the unit period, the lower the probability that the adjustment will be carried out. The following quotations illustrate this:

"One is at liberty to make it [the single-period] any length one likes; but if one lengthens it or shortens it, one must take the consequences. If one makes it very long, say a decade, it may not be inappropriate, at least in some economies, to work in flex-price terms – with flow demands equalling flow supplies, over the period as whole, and prices, on some sort of average over the period as a whole, being such as can assure this reality" ([1956] 1982: 231-232).

"The forces making for equilibrium in the labour market are for the most part rather slow in their action" (1963: 137).

"There is of course no question that (...) there is always more flexibility in production when a long period is allowed for adjustment. If we take our stand at a particular historical date and look forward, the things that are to be produced in the following months have already been largely determined by past decisions; no change in demand can make much impression upon them. If we lengthen the 'short period' to three months, there is more flexibility" (1965: 50-1).

The above considerations permit us to better grasp the meaning which the terms of price flexibility and price rigidity have for Hicks, terms he himself does not bother to define precisely. In my reconstruction of his views, any price that is able to pass from a "false" towards a market-clearing value within the time-span of the unitary period is flexible. Conversely, any price should be regarded as fixed if the adjustment process cannot come to an end within this time-span.¹⁹ Moreover, in the light of these considerations, a series of Hicks' somewhat sublime propositions become more transparent – his statements that for a given unitary period certain markets witness rationing whilst others are in equilibrium or his statement that in the ultra-short period very few markets will find equilibrium whereas all will do so in the long period.²⁰ Hicks' critical commentary on his temporary equilibrium model also stands out better. Its bottom-line is that the time-span of a week is too short to allow the realization of the adjustment process across all markets. In particular, a market such as the labour market requires more time. Hence his judgment that the generalized market-clearing assumption underpinning temporary equilibrium is not defensible.²¹

At least two criticisms can be levelled against Hicks' claim. First of all, his argumentation is trivial. According to his reasoning, the mere fact of extending (narrowing) the unitary period will decrease (increase) the proportion of fix-price markets. It then turns out that the existence of rationing hinges on the definition of the unit period's length. However, the latter is arbitrarily fixed by economists. So, it would suffice for a market which before was considered as cleared to become rationed (or vice-versa) once this length were modified, without any change in the objective features of its working. That the assertion of existence of a phenomenon as significant as rationing depends exclusively on the measuring unit adopted is unacceptable. Second, Hicks draws an invalid reference when stating that slow adjustment can generate market rationing. Take first the time-to-build factor. The latter can be used to explain cases of Marshallian disequilibria; i.e. a lack of coincidence between market-day and normal values. However, such results go along with market-clearing. It may then be wondered whether Hicks' conclusion does not rest on a confusion between the Walrasian understanding of equilibrium (non-market-clearance) and its Marshallian understanding. Likewise, consider the frequency of market openings factor. Either the shock occurs during the time when markets are open in which case it will be reflected in the market-day new equilibrium. Or it occurs in between two market-periods. But then, its influence on economic outcomes has to wait for the opening of the next market session. Until then it has no real economic meaning. As long as markets remain closed, there is no way shocks can have an effect. Hence they cannot cause rationing.

6 Conclusions

This article's aim was to give a critical account of Hicks' conception of equilibrium and disequilibrium. Whereas the importance of this task flows from the huge influence he exerted, its difficulty lies in the impressionistic character of his writings on the subject. Three main points have been made:

- (a) My basic criticism of Hicks' conception of equilibrium is that he failed to perceive the difference between the Walrasian and the Marshallian equilibrium constructs. As a result, his conception which outwardly may seem plain proves to be a muddle. Beyond doubt, Hicks contributed to bringing the Walrasian equilibrium conception to its full maturity. However, he explicitly refused to adhere to it fully. In particular, he eschewed adopting the tâtonnement hypothesis and rather strove for grafting Marshall's insights on price formation into the Walrasian construct. In other words, he believed it to be a good strategy to adopt whatever he liked and to leave aside whatever he disliked from both Marshall and Walras in order to create his own synthesis, as if their conceptions had no inner logic which might be difficult to reconcile. The reader unacquainted with my earlier work (De Vroey, 1998a, 1998c) will find this criticism odd. However, the point is in drawing a distinction between the Marshallian and the Walrasian standpoints. I hope this paper, by looking at the problem from the viewpoint of the consequences arising from neglecting to make this distinction, will help to draw attention to it.
- (b) Hicks' interpretation of Marshall's views on equilibrium, in particular his vision of a tripartite classification, has been criticized on several grounds and contrasted with my preferred alternative interpretation focusing on the market-day/normal equilibrium divide.
- (c) Hicks' defence of the possibility of market rationing as resulting from adjustment slowness (which to many authors is one of the central theses of the Keynesian approach) has been critically examined. It has been claimed that, once the task of defining Hicks' concepts and spelling out his argumentation more precisely than he does is undertaken, it turns out that his claim is ill-grounded.

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Notes

¹ In this respect, one can only agree with the judgement with which Hamouda begins his book on Hicks: "The ideas of Sir John Hicks provided sparks of stimulus and guidance in almost every aspect of economics for over six decades" (Hamouda, 1993: XI). For broader evaluations of the contribution of Hicks, the reader is referred to Coddington (1983), Leijonhufvud (1984), Hamouda (1993), Hagemann and Hamouda (1994), McKenzie and Zamagni (1991). Hamouda (1993) devotes a chapter to the question of Hicks' equilibrium conception.

² For a reflection about the evolution of Hicks' views on equilibrium, see Zamagni (1991).

³ In Hicks' own words, "Clearly, I need to change my name. Let it be understood that *Value and Capital* was the work of J.R. Hicks, a 'neoclassical' economist now deceased, while *Capital and Time* and *A Theory of Economic History* are the work of John Hicks, a non-neoclassical economist who is quite disrespectful towards his 'uncle' " ([1975] 1992: 125).

⁴ The term "temporary equilibrium" is slightly misleading as it can indicate either the whole of the Walrasian-Hicksian concept, as including the two distinct concepts of temporary equilibrium and

intertemporal equilibrium, or only the first of them. On the other hand, the innovating character of Hicks' introducing the temporary equilibrium concept in *Value and Capital* ought to be somewhat mitigated. As he recognised himself, he was not its inventor. The need for generalising static general equilibrium had already been perceived before him, in particular by Lindahl and Hayek. Lindahl's pioneering article was published in Swedish in 1929. Translated into English under the title "The Place of Capital in the Theory of Price", it became the third part of Studies in the *Theory of Money and Capital* (1939). The same theses are found in the article of Hayek, called "Intertemporal Price Equilibrium and Movements in the Value of Money" which appeared in German 1928. It was then included in Hayek (1984). For an examination of these questions, the reader is directed to Currie and Steedman (1990), Hansson (1982), Ingrao (1989), Ingrao and Israel (1990) and Zappia (1996).

¹ "Within the single period, quantities and prices could thus be determined in what resembles a static manner. Everything is just the same as with the 'static' kind of process analysis (...) save for one thing: that expectations are explicitly introduced as independent variables in the determination of the single-period equilibrium." (1965: 60). His definition of static equilibrium is as follows: "A market is in equilibrium, statically considered, if every person is acting in such a way as to reach his most preferred position, subject to the opportunities open to him. This implies that the actions of the different persons trading must be consistent" (1946: 58).

² See also Hicks (1946: 123, 124) and (1965: 66).

³ Or: "The fundamental weakness of the Temporary Equilibrium method is the assumption, which it is obliged to make, that the market is in equilibrium – actual demand equals desired demand, actual supply equals desired supply – even in the very *short* period, which is what its single period must be taken to be. This assumption comes down from Marshall, but even in a very competitive economy, such very short-run equilibration is hard to swallow; in relation to modern manufacturing industry, it is very hard to swallow indeed. It was inevitable that the time should come when it has to be dropped" (1965: 76).

⁴ On this, see Donzelli (1989: 27-28) and De Vroey (1998a).

⁵ According to Donzelli, stationary equilibrium is a conception of equilibrium common both to the classical economists, such as Adam Smith and Marx, and to Marshall. Its main features can briefly be summarised as follows (cf. De Vroey, 1998a). First, it features two interrelated equilibrium concepts of equilibrium, one of which is considered to be more fundamental than the other (in the case of classical theory, market prices equilibrium and natural prices equilibrium). Second, whereas in this conception disequilibrium is supposed to refer to an effectively existing occurrence (as opposed to having just a virtual existence), it relates only to the lack of realization of the "higher" equilibrium concept. In other words, it is supposed that the lower equilibrium is always achieved, the fact that it is lower making its realization less significant. At the limit, the fact that it may or may not be realised has little importance. Third, whenever disequilibrium is present, it triggers off a feed-back effect. The realization of the higher equilibrium concept will take place through successive moves of the lower equilibrium values.

⁶ Cf. Hamouda (1993: 48).

⁷ "...the kind of equilibrium concept (or concepts) that we require in dynamics. We need (1) *equilibrium at a point of time*; the system is in equilibrium in this sense, if 'individuals' are reaching a preferred position, with respect to their expectations, as they are at that point. *It is only to such an equilibrium that there can be tendency*. We also need (2) *equilibrium over a period of time*. If there is to be equilibrium over a period there must be equilibrium at every point of time within the period (...) But for period equilibrium there is the additional condition that these expectations must be consistent with one another and with what actually happens within the period. Period equilibrium is essential, in dynamic theory, as a standard of reference; *but it is hard to see how there can, in general, be any 'tendency' to it*" (1965: 24) [The second and final italics are mine, the remainder are those of Hicks].

⁸ The principal passages in which one finds the interpretation of Marshall proposed by Hicks are section 3 and 4 of chapter IX of *Value and Capital*, entitled "the method of analysis-", as well as the appendix of this chapter, and chapter V of *Capital and Growth*, entitled "The Method of Marshall". Some of the topics dealt with in this part of the paper are developed more in detail in De Vroey (1998b). It should be underlined that Hicks' standpoint will be criticised more on the grounds of its lack of coherence than of its faithfulness to Marshall.

⁹ Whereas to all intents and purpose, he retained only one of the elements of Marshall's typology, Hicks nonetheless claimed to have kept its central idea, namely that adjustment was a time-consuming process (1946: 122).

¹⁰ This is for example how the short period/ long-period equilibrium divide is understood in the writings of an author like Friedman.

¹¹ Hicks always defended the contrary point of view but at the price of dodging the possibility of income effects. "During the 'week' (as I called the single period) production and consumption proceeds at prices that are established by trading on its first 'day' (Monday). Monday's trading proceeds until prices are established that equate demands and supplies, for goods and services to be delivered within the 'week'. It is not supposed that equilibrium prices are established at once; there may be has good deal of 'false' trading

before they are established" (1965: 66).

¹⁶ Hicks himself often fell prey of such mistakes. See e.g. Hicks ([1956] 1982: 231-232).

¹⁷ This being stated, a real difference between Hicks' Monday and Marshall's market-day pertains to their scope of relevance. Marshall's analysis deals with the particular case of perishable goods whereas Hicks' week, by contrast, applies to all commodities.

¹⁸ Hicks did not spell out his views in the detailed way I will expound them, as he rarely bothered to give precise definitions of the concepts he used. Nonetheless, it seems to me that my reconstruction is the best way to put order and consistency in his ideas.

¹⁹ Hicks genuinely admits that when prices are fixed in the above sense, the price that will prevail at the end of the unitary period can no longer be asserted theoretically. In his terms: "If we abandon the demand-supply equation, how are prices to be determined? The answer, which must be faced, is that the new method does not have any way of determining prices. There must be some way by which they are determined, but it is exogenous. The determination of prices is taken right outside the model. All that is said about prices is that they must cover costs; more strictly, that a thing will not be produced unless it is profitable to produce it. Subject to this condition prices can be what they like. (...) If there is no more to be said about prices, it is natural to assume that they remain unchanged throughout the sequence that is being analyzed. If prices are fixed exogenously, one will naturally begin by assuming them to be constant. The model becomes a fix-price model" (1965: 77).

²⁰ Hence Hicks' view, widely taken up afterwards, that in the long term flexibility cannot but prevail. In his terms: "the classical length-period theory is full-equilibrium theory" (1967: 149). This view has become standard and taken as self-explanatory. For example, in his *Macroeconomics* textbook, Mankiw writes: "The key assumption of classical models is that prices are flexible. Most economists agree that this assumption describes how the economy behaves in the long run" (1997: 43).

²¹ To him such a conclusion was of no universal nature. It was rather a matter of historical relevance. In Marshall's time, he argued, the assumption of market clearing was apposite, whereas this has become untrue for the posterior period. In the latter the markets wherein the equilibration process could be assumed to occur within the time-span of a week have become a minority. "The dominance of flexprice methods in the work of the older economists was a reflection of the kind of industrial organization which may well have been common in the nineteenth century, but is surely much less common today" ([1956] 1982: 234).

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