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Some reflections on Hicks's ideas on trade cycles, from the 1930s to the the 1980s

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Some reflections on Hicks's ideas on trade cycles, from the 1930s to the the 1980s

Bruna Ingrao and Claudio Sardoni*

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Abstract

The paper examines Hicks's views on trade cycles and their evolution from the 1930s to the 1980s. By looking at some of the most significant works of his, the paper points out the fundamental innovative characteristics of Hicks's approach to trade cycles. We emphasize Hicks's insistence on the necessity to analyze cyclical phenomena by taking account of the specific context in which they take place, with attention paid not only to strictly economic variables but also to the political and institutional framework dominant at a certain time. Hicks's reflection on cycles is intimately interwined with his life-long effort to construct a proper dynamic method to analyze processes of change. The paper devotes considerable attention to the issue by pointing out,in particular Hicks's criticism of the static approach that characterizes to a significant extent economic theory as well as Keynes's so-called 'equilibrium method' adopted in *The General Theory*.
Keywords: Trade cycles theory; Hick's dynamics; criticism of the static equilibrium approach.
JEL Classification: B10; B20; B22; E30

1 Introduction

Hicks has been thinking about trade cycles and fluctuations for about 60 years. Quite naturally, over such a long span of time his ideas evolved and changed; not so much because he found and used new factors explaining fluctuations but for the changing emphasis he put on how the various determinants of cycles, many of which he had individuated already back in the 1930s, interact in episodes of booms and depressions.

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A number of determinants of economic fluctuations as well as some more methodological considerations are always present in Hicks's analysis. The most significant are the following.

- Innovations and technological change promote the accumulation process and sustain growth, but they do not proceed at a regular pace. Slumps are always an interruption of the capitalist process of accumulation and growth.
- Trade cycles show a number of features that recur in any specific episode. But, at the same time, fluctuations take place in different phases of the historical evolution of market economies.
- According to the way in which the interruption of the process of growth occurs, there are different ways in which the economy can return to grow. Different sorts of slumps require the implementation of different policies to effectively tackle them.
- The great crisis of the 1930s changed the context in which market fluctuations take place. Keynes perceived the importance of this historical turning point; but his new theoretical approach was problematic from several points of view.

Although Hicks was aware of the role of the historical context since his early works, over time he came to pay a growing attention to the changing institutional aspects. In his late works on trade cycles, on which we shall focus, his attention moved to the institutional regulation of financial markets, and to monetary institutions and the international scenery. Hicks, however, did not aim at looking for the peculiarities of single episodes as a professional historian might do; he was looking for the better profiling of the timing, persistence or fading out of booms and depressions by taking account also of institutional changes. He questioned the very meaning of the term 'trade cycles' in his attempt to build the more appropriate cognitive framework to achieve an articulate understanding of prosperity and depression.

This intellectual achievement, as we argue, was reached through a deep rethinking about time and dynamic analysis in economics, a reflection that went on along Hicks's scholarly life, starting with his early writings in the 1930s and his theoretical construction in *Value and Capital* (1946[1939]). His controversial line of thought on time and dynamics acquired prominence in his research in the late 1950s and then again in his 1970s writings, to eventually arrive at his radical stance in a few seminal works in the 1980s. Hicks developed intertwined critical thoughts on how to deal with time in economics and on how to understand the so called 'trade cycles'. In the process, he also developed his criticism of Keynes and Keynesian economics, most of all with respect to the notion of equilibrium and the nature of fluctuations after the 1930s crisis.

The above list of topics and problems eloquently shows that it would be prohibitive to satisfactorily deal with all of them in a single paper. In fact, a thorough analysis of all those topics would require an examination of Hicks's thought well beyond the specific problem of trade cycles.[1] In the paper we therefore concentrate on the path through which Hicks finally came up with the idea of rethinking the notion of trade cycles, affirming the necessity to take into account historical and institutional factors for an adequate understanding of fluctuations in specific contexts.

Hicks published his first work (in German) on trade cycles in 1933 (Hicks, 1982[1933]), when he was significantly influenced by Hayek as well as Pigou and Robertson. We do not take into consideration this early contribution to concentrate on his later works. We deal only with his writings which are, in our view, the milestones in the development of his ideas on trade cycles. We focus, thus, on the main steps in Hicks's theoretical evolution rethinking trade cycles, without aiming at providing a detailed historical reconstruction of all his writings on the topic, or covering the ample secondary literature on his thought. We regard Hicks's contributions as very important and fruitful, but we also believe that his approach is still characterized by the persistence of some difficulties or unsolved problems, some of which will be dealt with in the paper. In particular, we concentrate on Hicks's approach to innovations and their role in the process of growth.

The paper is organized as follows. Section 2 briefly surveys the evolution over time of the theory of trade cycles and the challenges that it faces. This brief survey helps to better understand the nature and importance of Hicks's own contributions, which are examined in sections 3 to 5. We selectively examine the evolution of Hicks's analysis of cycles from *Value and Capital* (1946[1939]) to *A Market Theory of Money* (1989). In his analysis of trade cycles and the dynamics of the economy, Hicks always takes into considerations Keynes's approach by pointing out its merits as well as its limits. Section 6 is concerned with some aspects of Hicks's critical view of Keynes's ideas concerning underemployment equilibria in relation to the cyclical nature of capitalist processes of growth. Section 7 concludes.

2 Some considerations on the history of the theory of trade cycles

For a relatively long period of time, the trade cycle theory has been characterized by the use and diffusion of a number of metaphors inspired by natural phenomena, which various scholars proposed in discursive narration

[1] Two books (Hagemann and Hamouda, 1995; Scazzieri et al., 2008) contain various contributions on Hicks's works.

to present interpretations of speculative phenomena, dynamic instability or business cycle theories properly.[2]

Such metaphors include the reference to mental illness or infective contagion to explain speculative bubbles; waves motions in still water due to the action of winds as examples of dynamic instability or disequilibrium; storms, and other meteorological phenomena to point to violent markets turmoils; periodic sunspots to explain recurring shocks to crops in agriculture; the rocking chair, the rocking horse or generally the pendulum to associate cyclical movement to an initial disturbance to a state of equilibrium; a ball rolling on a flat surface to explain the tendency to persistent deviation from equilibrium in monetary phenomena; a capsizing ship under the motion of waves or a breaking stick to illustrate the instability of dynamic equilibrium in debt-deflation phenomena. More recently, in the twenty first century some scholars evoked tsunamis to describe severe recessions during financial crises as opposed to milder business cycles.

Some of these references to natural phenomena were not conceived just as loose analogies, or evocative images, but as proper scientific explanations. It is the case of the reference to waves of mental excitement in the banker Mills' theory of credit cycles and commercial panics (Mills, 1868). It is the case of Jevons's explanation of business cycles as regular, periodic phenomena ultimately due to the influence of sunspots on agricultural productivity (Jevons (1884[1875]) and 1884[1878]).[3]

In the natural phenomena evoked in the metaphors, the causes of shocks and movements were clear, at least in principle. The sequence of the events set into motion could be both scientifically analyzed and narrated in discursive language. Jevons's 'sunspots' were described as periodical events that astronomy could precisely analyze and even predict. Even the less predictable events (e.g. storms) can be scientifically analyzed. Even a tsunami, although unpredictable at the present stage of knowledge, is a phenomenon whose cause clearly lies within the realm of nature, and its dynamics is the subject of study by natural scientists. Physics and meteorology study the ways winds create waves on a sea surface, as in Walras's metaphor of a lake

[2]The use of metaphors in business cycle theory has been reviewed in Baranzini and Besomi (2023), notably in White (2023); Kuster (2023); Zabalza (2023); Tieben (2023); Louçã (2023). In their introduction to the book, Baranzini and Besomi (2023, pp. 1-18) discuss the role of metaphors in structuring theories and eventually promote development along new paths of research. For further references, see Boianovsky (2023, forthcoming).

[3]White (2023) carries out a detailed analysis of sunspots in Jevons's trade cycle theory. Mills and notably Jevons built complex accounts of the credit cycles, not ignoring interactions involving institutions and social life, but natural phenomena, and their scientific explanation, are at the core of their interpretations of the recurring alternation of prosperity and depression. Also in the Marshalls's account of depressions the miserable state of mind of the business community, which can affect the collective mood, is the direct explanation of declining trust and declining investment (Marshall and Paley Marshall, 1994[1879], pp. 154-155).

agitated by the wind.

On a different epistemic approach, a number of scholars assumed physical metaphors and their scientific explanation just as ideal types to use as tools for the understanding of trade cycles. They suggest some logical, cognitive skeleton to be adopted in accounting for the vagaries of economic life. Also in these cases the physical metaphor is relevant, going beyond a didactic illustration or an evocative embellishment; it structures the way in which the scholar conceives the theoretical skeleton to be elaborated in economic theory, when analyzing sequences of phases of prosperity and depression, dynamic disequilibrium and monetary instability. The reference to these metaphors sheds light on the conceptualization of the phenomena to be dealt with in business cycle theory. The history of scientific conceptualization in economics illuminates the paths scholars take in different research programs, capturing the seeds of later evolution, successes or dead ends.

Most of the natural metaphors in trade cycles theory arose in an environment in which mathematization, although gaining space, was not yet a strict requirement for theories to be acceptable by academic communities. With the evolution towards the mathematization of economics, the links to metaphors as visible images of natural phenomena loosened. Adequate mathematical models became the requirement for theories to acquire a scientific status in various mainstream environments. Mathematical models per se, disembodied from natural phenomena became the 'metaphors' to describe economic events, even though they are accompanied by narrative accounts of various relevance and interest according to the methodological interpretation of the different scholars venturing into the study of cycles,

Thus, families of mathematical models play the role of cognitive metaphors for building trade cycle theories. These mathematical metaphors only occasionally appear in connection with traditional natural metaphors in the conceptualization of cycles. Some metaphors may still be used as evocative images, but mostly they are turned into ideal types of families of mathematical models. Fisher's metaphor of the capsizing ship was later turned into the corridor's hypothesis, in opposition to the alternative theoretical construction encompassing equilibrium plus random shocks that has roots in the earlier metaphors of the rocking chair or the pendulum. The equilibrium plus random shocks metaphor dominates contemporary mathematical models of trade cycles, to which the tsunami metaphor is superimposed to account for abnormal financial crises.[4] It acquires new mathematical complexity in contemporary models of real business cycles (Louçã, 2023)

Whichever is the relation to older metaphors, in contemporary macroeconomics models aim at describing economic variables and interactions, with none or almost none, residual reference to the natural phenomena which

[4]The roots of the 'equilibrium plus shocks' structure are to be found in Walras's metaphor of the lake agitated by the wind or in Wicksell's metaphor of the rocking horse.

originally might have inspired their cognitive skeleton. According to different methodological interpretations, mathematical models of trade cycles may be read as somewhat realistic descriptions of economic phenomena or as the construction of fictional economic worlds built for simulation purposes. In today economic jargon 'sunspots' are conventional variables, which have lost any reference to astronomical phenomena. What is left of the impulse putting into motion the rocking chair or the pendulum is just a symbolic variable, a 'shock' affecting the agents' optimizing behavior or market equilibrium with no reference to the physical domain.

However, even if naive interpretations are put aside, there are challenges and implications in adopting the dominant mathematical frame of equilibrium plus shocks in business cycles models. The first challenge is that the shocks putting into motion fluctuations in market variables are relegated to the domain of 'external events' that macroeconomic theories leave unexplained. Shocks appear to be outside the realm of the discipline and its scientific discourse.

This choice adds freedom of interpretation, since multiple situations and events may be dealt with as being external shocks; but it deprives the macroeconomic theoretical apparatus of analytical tools for a more accurate interpretation of booms and depressions. A number of pretended 'shocks', although not being economic events properly, are events with endogenous interactions with income, wealth, scarcity, economic conflicts over the middle term horizon.[5]

Similar considerations are appropriate for the metaphor of 'financial tsunamis' to deal with major financial crises, whose ultimate causes, when they are not left unexplained, appear to be nurtured on the middle term horizon by innovations and changes occurring in financial markets, as regards speculative behavior, excessive risk exposures of banks or investors, poor reserves or other endogenous causes of financial instability. But even if abnormal financial crises were ultimately to be attributed to the action of a malignant *deus ex-machina*, like central bankers mismanaging monetary policy, or the monetary institutions' incompetence or failure to take proper action, should be properly understood in a historical perspective.

A new current of thought, however, has re-established the primary role of the conditions of financial distress as primary factors in explaining the severity and persistence of depressions (Bernanke, 2023). The ultimate sources of financial instability arise from asymmetric information in financial markets, the opacity of the financial institutions' balance-sheets, the role that financial institutions play in the transformation of the maturity of liabilities and the frictions in the endogenous adjustment processes by which they transfer saving from lenders to borrowers. Thus, the tsunamis in financial markets

[5]For example, a number of external 'shocks' due to rising energy prices linked to geopolitical overturns, were also the direct result of emerging scarcities or oligopoly power in energy markets.

appear to be less the result of exogenous shocks or dramatic mistakes in monetary policies, and more the result of malfunctioning or slow adjustment in the networks of financial transactions in markets characterized by asymmetric information and other so-called 'frictions'.

The second challenge concerns the notion of equilibrium in the context of economies that grow and structurally change over time, with their rate of growth over the longer term horizon being strictly intertwined with technological innovation and institutional change. In market economies accumulation is proceeding at a faster or slower pace within processes of adoption of new technologies, international competition, a changing division of labor in international markets and, in various historical experiences, the evolution of both private and public firms and organizations. Institutional change involves private firms (such as banks, manufacturing enterprises, or other firms) and the governance of markets (business organization, jurisprudence, the judicial system, monetary authorities, economic policies).

Both the above challenges are related to Hicks's research on trade cycles. In the following sections we look at Hicks's approach and the way in which he tried to tackle them.

3 Two lines of research on trade cycles

In *Value and Capital*, whose first edition was published in 1939 followed by a second one in 1946 (Hicks, 1946[1939]), trade cycles are dealt with in the concluding chapter 24 of part 4. The first two parts of *Value and Capital*, as known, are devoted to static analysis, whereas parts 3 and 4 deal with dynamics. Trade cycles are thus placed within the realm of dynamic analysis, as Hicks will consistently do in all his subsequent works, although with differing emphasis on the factors that qualify trade cycles as phenomena which can be properly dealt only in a dynamic analytical framework.

In the relevant chapter, Hicks stresses the need for economics to develop a dynamic approach as opposed to the static one, but he also mentions some of the reasons why his book did not go further into the development of the dynamic approach (Hicks, 1946[1939], p. 294). It is interesting to recall the last of these reasons, which is the necessity to enrich the theory of the dynamic process with the historical knowledge of capitalist development (Hicks, 1946[1939], pp. 294-295).

Hicks then turns to offer some tentative and general considerations about trade cycles.[6] He starts by pointing out that booms are nothing but a period of intense capital accumulation. Consequently, slumps are phases in which the accumulation process stops (Hicks, 1946[1939], pp. 295-297). The process of accumulation and growth goes through three phases. The first

[6]For a detailed analysis of Hicks on trade cycles in *Value and Capital*, see also Rubin (2011).

preparatory phase is characterized by a small increase in the demand for factors and money. If there are unemployed labour and money, the increase in demand has no significant effect on prices and interest rates.[7]

The second phase is the one during which the construction of new capital goods takes place. Now the increase in the demand for factors is larger. Unemployment declines while, at the same time, prices of the 'more sensitive' commodities tend to rise and some firms tend to expect further price rises (their expectations become more elastic) with a consequent further reduction of unemployment (Hicks, 1946[1939], pp. 295-296).[8]

The economy can pass to a third phase characterized by generalized optimism, which Hicks summarizes with the spreading elasticity of price expectations, and decreases of unemployment with increases in wages. 'The boom waxes fast and furious' (Hicks, 1946[1939], p. 296), but the process can get into trouble in several ways.

On the one hand, the demand for money rises and the monetary authority has to consider whether let credit expand indefinitely or check its expansion with a rise of interest rates. Moreover, the long-term interest rate could rise even before any policy intervention.[9] It is however unlikely that the rise of interest rates is sufficient to choke the expansionary process to any significant extent. On the other hand, it is possible that part of the community has expectations 'stubbornly inelastic', so that the demand for goods does not rise as much as the more optimistic agents expected and this can change their expectations.[10] For Hicks, however, the most important factor that can stop the boom is 'the check which must come from the mere completion of productive processes, from the achievement of the capital accumulation planned in the first stage and now carried out.' (Hicks, 1946[1939], p. 297).

Booms, therefore, may be killed by credit restriction or die by working themselves out. Even though in most cases there are more causes at work, it is important to understand which of them is the dominant one, as

[7] 'The only prices which are likely to be affected are those which are a direct expression of a change in the expectations of the most sensitive trading-agents, like for example the prices of ordinary shares.' (Hicks, 1946[1939], p. 295).

[8] On the notion of elasticity of expectations, see Hicks (1946[1939], p. 205): 'I define the elasticity of a particular person's expectations of the price of commodity X as the ratio of the proportional rise in expected future prices of X to the proportional rise in its current price.'

[9] 'It is even probable that the long rate of interest will rise before there is any action by the monetary authority; since the long rate of interest reflects interest-expectations, the mere apprehension of the possibility of such action by the monetary authority will induce a rise in the long-term rate of interest.' (Hicks, 1946[1939], p. 296).

[10] If 'the division between sensitive and insensitive people corresponds more or less to a division between people using different banking systems (that is to say, different kinds of money), the check due to this cause may be transmuted into a check through credit restriction, brought about in order to keep the different kinds of money at par.' (Hicks, 1946[1939], p. 297).

this has significant implications for the nature of the ensuing slump (Hicks, 1946[1939], p. 297). A slump is the cessation of accumulation, which is 'sufficient in itself to produce the typical slump phenomena–downward revision of expectations, leading at once to a fall in ordinary shares; shift of demand from commodities and factors to money and fixed-interest securities, leading to a fall in prices, a rise in unemployment, and (after an initial period of stringency, due to distress borrowing) a fall in interest rates.' (Hicks, 1946[1939], p. 297).

If all prices and expectations were equally flexible, the ending of accumulation would be sufficient to give rise to endless slumps (Hicks, 1946[1939], p. 298). This generally does not occur because of price rigidities and people's sense of normal prices.[11] However one should not give excessive importance to these stabilizing factors as they

> can do nothing more than provide a breathing-space; if something new supervenes, which converts that breathing-space into recovery, well and good; but if nothing happens to induce a genuine resumption of the process of accumulation, then the stabilizing factors are bound to grow weaker as time goes on. Prolonged experience of low prices will disturb the norms, and induce a further revision of expectations downwards. A secondary slump will set in, far more dangerous than the first, since there is less resistance available to prevent collapse.' (Hicks, 1946[1939], p. 298).

This is the reason why the way in which the boom comes to an end is important. If its end is due to a credit restriction, it is likely that the economy had not exhausted its investment opportunities. The reduction of credit induces firms to postpone their investment, but the opportunities remain available and exploitable in the future, so that a new expansionary process can start.

If instead the boom dies a 'natural death, the situation is much more dangerous. Some entirely new factor is then needed to convert depression into recovery, and therefore to avert the dangers of secondary depression.' (Hicks, 1946[1939], p. 299). Inventions and innovations are the crucial factors that can bring the economy out of a slump. The two terms are used in a broad sense by including also changes in tastes, often due to sources in politics, education and demography: 'Any of these causes is capable of providing the sort of stimulus for which we are looking.' (Hicks, 1946[1939], p. 299).[12]

[11] For example, after a certain price decline some entrepreneurs may come to be convinced that prices are now abnormally low and they will begin to develop production plans on the grounds of an expected price rise (Hicks, 1946[1939], p. 298).

[12] See Hicks (1946[1939], p. 299) for a description of how the shift of the demand for a consumer good to another can stimulate the demand for inputs in general.

Hicks argues that innovations cannot guarantee a process of accumulation and growth without fluctuations. In fact, 'there is no reason to suppose that the rate of innovation is very regular; and if it is not regular, that in itself is a sufficient reason for a cycle–even a fairly regular cycle–to develop.' (Hicks, 1946[1939], pp. 299-300).[13]

However, if these irregularities were the only problem, wise economic policies could aim at reducing them in two ways: i) fluctuations can be damped through an adequate timing of public investment; ii) some control can be done through monetary policies, although less effectively (Hicks, 1946[1939], pp. 300-301). These considerations would be 'well and good' if there were no reason to worry about the average rate of innovation in the long run, but we have to consider the possibility of secular changes in the rate of innovation. If this rate slows down, booms would tend to die off more frequently and slumps would be more frequent and more likely to be dangerously long (Hicks, 1946[1939], p. 301).

Although Hicks regards innovations as important, he seems to regard them essentially as exogenous, differently from what Schumpeter attempted to do in his business cycle theory (Schumpeter, 1939). For Schumpeter, innovations are inherent to capitalist market economies. They sustain accumulation because of the endogenous impulse to change and innovate by entrepreneurs (Schumpeter, 2021[1934]). Hicks underlines that innovations do not advance at a regular pace, but he puts no emphasis on recurring waves of innovations as in Schumpeter's theory of capitalist development. Also in subsequent accounts of phases of prosperity, innovations appear as recurring but occasional events.[14]

Hicks concludes the chapter by reasserting the importance of dynamics as opposed to statics.

> We began our study of dynamic economics by rejecting the concept of a stationary state as an analytical tool. We rejected it then, because it seemed to be no more than a special case, which offered no facility for generalization. We have come in the end to doubt whether it is even conceivable as a special case; to suspect that the system of economic relations we have been studying is nothing else but the form of a progressive economy. (Hicks, 1946[1939], p. 302)

The 'system of economic relations', which generates fluctuations in the rate of accumulation which are at the core of trade cycles, has to be addressed through the language of dynamic economics, both because those fluctuations are real phenomena in a progressive economy and because, to-

[13]Moreover, the boom itself may affect the rate of innovation. For this reason, a slump 'may find itself abnormally short of investment opportunities' (Hicks, 1946[1939], p. 300).

[14]We shall briefly return to this topic in the concluding section.

gether with changes in investment and the time-profile of the building of real capital, they involve the anticipations of future prices and plans which look forward to the disclosure of an uncertain future.

The concern with a progressive economy led Hicks to look at Harrod's model of dynamic accumulation (1948), but it also led him to a new in-depth analysis of his notion of dynamics. In 1950, a few years after the publication of the second edition of *Value and Capital*, Hicks published the book *A Contribution to the Theory of the Trade Cycle* (1950), large part of which is devoted to the construction and presentation of his well-known multiplier-accelerator model of trade cycles. Here, we shall not deal with the analytical features of the model.[15] Instead, we concentrate on some of Hicks's general considerations about his model and dynamic analysis as well as on how he relates his own work to that of others.

In the book there is a significant change of focus with respect to *Value and Capital*. The model's core dynamics is built around real variables, notably real output and its variations, investment and consumption. The core dynamics results from the combined effect of the multiplier and accelerator. These are the fundamental factors, which are sufficient to generate cycles in real output (under the additional assumptions of a full-employment roof for output and a floor for disinvestment), and which are called *primary*.

Hicks's model, under strict conditions, can produce a perfectly regular cycle, but such regularity is not to be expected in the real world. Therefore, 'in order to explain the facts, we do not want to assume uniformity in conditions; what we want is a theory which allows variation in conditions, but still leaves us with a cycle of the same basic character. Our theory does seem to meet this need.' (Hicks, 1950, p. 109).[16]

In *A Contribution to the Theory of the Trade Cycle*, the monetary factors (like liquidity preference and the interest rate) contributing to fluctuations are regarded as *secondary* and their analysis is essentially relegated to two narrative chapters at the end of the book (Hicks, 1950, pp. 136-168). In this respect, there is a significant difference from the previous book, where Hicks had devoted attention to money demand, price expectations and credit restrictions. Moreover, in the new book the agents' psychological reactions are overshadowed by the somewhat mechanical links connecting consumption and investment to income and its variations in the multiplier-accelerator mechanism. It is the criticism that Burns moved to the book in his rather unfavorable review, where he underlined how the model could not satisfactorily account for important aspects of business fluctuations as attested in statistical and historical studies (Burns, 1952).

[15] A very clear and formal presentation of the model can be found, for example, in Gandolfo (1971, pp. 73-85 and 111-115).

[16] One of the factors that produce different cycles is the variation of the investment coefficient ($v = \Delta K/\Delta Y$).

Burns went perhaps too far in his critical comments. In the model, Hicks had added lags to make the working of the accelerator less mechanic and less 'violent' (Hicks, 1950, pp. 56-82 and Hicks 1977, pp. 177-181), but the absence of credit relations, and a thorough analysis of the working of the financial system, in Hicks's model is remarkable. This absence will not survive in his later writings on the trade cycle. He will return to give the monetary, and financial, factors a crucial role to play in his account of cyclical fluctuations and also to pay critical attention to price dynamics.

As to the problem of the dynamic method, in the book Hicks develops his previous position. In *Value and Capital* he had defined economic dynamics as 'that part of economic theory in which all Quantities are dated' (Hicks, 1946[1939], p. 115). For Frisch (1933, p. 171), economics is dynamic when 'we consider the magnitude of certain variables in different points of time, and we introduce certain equations which embrace at the same time several of these magnitudes belonging to different instants.' For Harrod (1948, p. 4), dynamics is the study of an economy in which rates of output are changing. In the book, Hicks develops the analysis in a way which includes all these three definitions.[17] (Hicks, 1950, p. 10).

Hicks relates his approach to trade cycles and dynamic analysis to that of other economists. In particular, he regards the following economists as antecedents to his 1950 theory of trade cycles:

1. Keynes, for the relationship between saving and investment and the multiplier (Hicks, 1950, p. 3);
2. Kalecki, Samuelson and others for their contribution to the accelerator theory (Hicks, 1950, p. 5);[18]
3. Harrod (1948) for having emphasized, in particular, two central points:
   (a) The necessity to look at business cycles as a problem of an expanding economy (fluctuations must be studied as around a rising trend) (Hicks, 1950, pp. 7-8).
   (b) The study of an expanding economy is best conducted by concentrating on output rather than employment (Hicks, 1950, pp. 8-9).[19]

Notwithstanding its limits, still in the 1980s, Hicks regarded his 1950 book as a 'substantial' contribution to the development of his dynamic the-

[17] 'I shall not in this place propose any new definition; I shall merely point out that the theory advanced in this book is dynamic in *all* of the senses which have thus been proposed. But whether it is therefore to be regarded as establishing a record in 'dynamism' is a matter which I shall leave to the judgement of the reader.' (Hicks, 1950, p. 10).

[18] Frisch (1933) is crucial for the formalization of the accelerator.

[19] In the list of his antecedents Hicks does not mention Robertson, even though in the preface to the book Hicks (1950, pp. vi-vii) acknowledges his indebtedness to him. Hicks repeatedly emphasized his indebtedness to Robertson in many respects (see, e.g. Hicks, 1942, 1966, 1982c).

ory' though not fully satisfactory (Hicks, 1982b, p. 217). Just a few years after, Hicks was aware that his 1950 model was only a partial effort to look at the dynamic evolution of economic phenomena. He was dissatisfied with the results he had reached until then without denying the partial advancement he had achieved with respect to a merely static approach. In the mid-1950s, he came back to the thorny issue of dynamic analysis in the effort to better reconcile the lines of research he had pursued in *Value and Capital* and *A Contribution to the Theory of the Trade Cycle*.

4 Framing the theory: the methods of dynamic analysis

In 1956, in 'Methods of dynamic analysis' (Hicks, 1982[1956]) Hicks argues that his two 'substantial contributions' to dynamic theory before then (Parts 3 and 4 of *Value and Capital* and *A Contribution to the Theory of the Trade Cycle*) remained theoretically disjoint constructions which did not fit together (Hicks, 1982[1956], p. 217). In the new paper he tries to build a bridge by developing a coherent framework to explore various possible perspectives from which to look at dynamic analysis. The article marks a major turning point in Hicks's research.

A 'dynamic method', in Hicks's definition, is based on a class of dynamic models that may be used to analyze an economic process in time. He studies different families of models dealing with processes in time within a comprehensive classification of alternative criteria to give economic variables the time dimension. He builds on the analytical structure originally set out in *Value and Capital* to untangle questions of time in general economic equilibrium theory.

In 1956, he proposes to look at dynamic models starting from the definition of a single period to proceed to build up sequences of periods, clarifying how the single periods link together into a process in time. Hicks constructs families of models 'for a single period' that may be regarded as part of a sequence of periods and used for the analysis of processes in time. The classification is built around some conceptual axes: the ex-ante versus ex-post accounting on one side (or stock-flow distinction) as well as the distinction between fix and flexible prices. The theory looking at how the single periods are connected will later be named 'continuation theory'.[20]

In 1956, Hicks goes beyond the definition of dynamic theory adopted in

[20]Hicks explicitly refers to the continuation theory in his last article, where he mentions the writings in which he had contributed to it (Hicks, 1990, p. 537). Fontana (2004) addresses the problem of the single-period theory versus the continuation theory in Hicks's thought, with special focus on the notion of endogenous money. On the continuation theory, see also Amendola and Gaffard (2008).

Value and Capital and *A Contribution to the Theory of the Trade Cycle*. He broadly defines the field of dynamics as the 'theoretical analysis of the process of economic change' (Hicks, 1982[1956], p. 220). He focuses not just on variables at different points in time or on changes in output, but on economic change broadly speaking. After these remarkable insights on the theoretical core of what dynamic economic theory should be, in the following twenty years Hicks's research pursued various projects, which all dealt with one aspect or the other of this challenging task without fully reconciling, once more, the methods on which he had focused in his various contributions.

In 1965 he published *Capital and Growth* (1965), a book that both developed his theoretical inquiry into the logical structure of dynamic methods in economic analysis and studied equilibrium over time in an expanding economy along a path of balanced growth, where no change occurs other than the expansion of all activities at a uniform rate (Hicks, 1965, p. 132). The book opened the way to the innovative analysis of the traverse, the focus of his later book *Capital an Time* (1973), and his effort to build a dynamic method to deal with innovation and changes of the capital structure on Austrian foundations.[21]

In a number of later writings, notably in the essays collected in *Economic Perspectives* (1977), Hicks kept on discussing the merits and limits of his efforts to build a dynamic theory in relation to other scholars' methods and efforts. This critical, and self-critical, assessment of dynamic methods is a common thread running through all his writings, and it will resurface in later writings as the focus of his works in a further phase of his life, till his last published book in 1989 and his last article in 1990.

Hicks does not deny that the comparative analysis of self-contained single periods can be a useful way to deal with some historical problems, in particular to make historical comparisons between the state of societies at different points in time. He, however, strongly denies that comparative analysis is sufficient to give account of complex dynamic processes, either in historical or theoretical inquiries. The proper theory to link together what goes from one period to the next, and to move towards the dynamic analysis of processes of change, should include the agents' expectations and their revision as a consequence of past results, the time profile of the building of new capital and of carrying capital goods to completion, the traverse from one steady state to a different one as a consequence of innovation, the presence and effects of active public policies or institutional changes.

In this long intellectual travel towards economic dynamics, in 1976 a further essay marked a new turning point in Hicks's thought. He again underlines that he had followed various trends to face the question of how to

[21]For further analysis and assessment of this evolution of Hicks's thought, see Ingrao (2013, pp. 584-592).

conceive and model an economy in time. In 'Time in economics' (Hicks, 1982[1976]), he stresses that in economic and social processes time is irreversible and it matters for this very reason. 'In space we can move either way, or any way; but time just goes on, never goes back. (...) past and future are different.' (Hicks, 1982[1976], p. 283).

Hicks holds that there is a conceptual incompatibility between the definition of a state of equilibrium and the proper analysis of processes in time. Large part of the essay is a straightforward attack to the theory of growth conceived as 'steady state economics'. The approach to growth theory as in Harrod's and Domar's models of growth is criticized as a 'come-back of equilibrium', and thus as an analysis avoiding the essential questions of true dynamic perspectives (Hicks, 1982c, p. 291).

Hicks also criticizes some poor attempts at dynamic analysis, including his own approach in *Value and Capital* and Keynes's treatment of time. He explains what dynamic analysis should aim at by quoting the chapter on the traverse in his book *Capital and Time* (1973), which was 'a first attempt at a formal theory of an economy which is not in a steady state, not in "Growth Equilibrium"–an economy which has a history, so that things actually happen.' (Hicks, 1982[1976], p. 293).

In the second part of the essay Hicks refers to his effort in *Capital and Time* 'to analyze a growth process sequentially' and he calls attention to the new concept of 'Impulse', when a major technical change widening the range of technical possibilities sustains new investment and rises the pace of accumulation till some emerging scarcity of resources puts a brake to expansion.[22]

In conclusion, in Hicks's there was a progressive shift from an earlier definition of dynamic analysis as the building of models taking into account dated variables to a more comprehensive definition adopted in the book on trade cycles in 1950. In 1956 he explores the deeper conception of dynamics as sequential analysis of processes in time, encompassing the study of sequences of single periods that are not conceived as isolated, but are linked together to account for economic variables moving in the time dimension. He then defines dynamic analysis as the study of economic change, a theoretical challenge presenting still unsolved difficulties in terms of formal analysis. Finally, in 1976 there is a shift of focus to the study of sequential processes in irreversible time, where changes take place in a proper historical context, since the past is marked by irreversible events. This last notion is the most radical conceptual challenge in terms of analytical complexity, and Hicks clearly points out its difficult coexistence with the idea of equilibrium.

It is important to stress how far Hicks goes in both the essays in em-

[22]'If the autonomous change is an invention which widens the range of technical possibilities, it must begin by raising profitability and inducing expansion; but the expansion encounters scarcities, which act as a brake.' (Hicks, 1982[1976], p. 295).

phasizing the distinction between what he calls 'equilibrium' and a true dynamic approach in economic theory. As we noted above, his criticism addresses various families of growth models but also the concepts of rational choice and consumer choice, which become blurred once change and new unexpected events are part of the scenery at future dates and agents perceive the future being uncertain and bringing about novelties and surprises (Hicks, 1982[1976], pp. 286-287). Notably, Hicks's criticism of equilibrium includes the Ramsey-type family of optimum saving models, which later were put at the core of DSGE models. He comments that although they are not properly steady state models, 'the whole of the plan is looked at together' and there is 'no movement from past to future' and no space for the unexpected (Hicks, 1982[1976], p. 292).

Hicks, however, is aware of his inability to build fully convincing models while pursuing his aspiration to adopt a wider notion of dynamic analysis. In several occasion he recalls the limits of his theoretical construction. Notably his 1976 essay includes a critical reflection on his 1950 book on trade cycles, of which he declares to be not particularly proud, even though it had some merits for the attempt to 'get back *into* time'. It does so by introducing time lags (present behavior depends on past experience) and by using the notion of autonomous investment and its possibility to change over time, something that makes the model 'become less deterministic, and so less equilibrist.' (Hicks, 1982[1976], p. 292).

Although admitting the shortcomings of his own efforts in various works, Hicks is crystal clear about the line of thought to be followed towards a dynamic theory conceived as the theory of economic processes in time, pointing to the fundamental requirements of building out-of-equilibrium dynamic economics, focusing on change and exploring irreversible paths of evolution. Hicks 'the elder' always addresses his doubts and proposals in moderate language; but in theoretical substance his research aiming at this new direction is subversive, more subversive than many outspoken critical statements advanced by opponents of neoclassical theories.

5 'Are there economic cycles?' Hicks's later works

Hicks's radical approach to dynamics resurfaces in his later reflections on trade cycles. The analysis of trade cycles, phenomena taking place in time and involving innovations and change in investment and output, faces all the theoretical challenges that Hicks had addressed in considering the methods of dynamic analysis.

In 1981, he delivered a lecture at the University of Stirling (the first of a series in honor of Lionel Robbins), which was published in a slightly

revised version in 1982 (Hicks, 1982a). The question mark in the title of the lecture is provoking. In fact, the lecture raises a number of questions concerning what is to be understood by 'economic cycles'. Hicks discusses what a number of authors included into the broad definition of trade cycles, and which phenomena they tried to analyze in their theories, and with which intellectual tools.

Thus, a part of the lecture looks at the question from the perspective of the history of economic thought, but a large part of it is concerned with the consideration of trade cycles from the perspective of economic history. Hicks briefly recalls aspects of the historical evolution of market economies to better understand the aims of various theoretical explanations of trade cycles, and to account for the changes in their nature over almost two centuries.

In the short space of a lecture, Hicks aimed neither at a detailed reconstruction of theories nor at an articulate reconstruction of historical episodes or trends. He advances hints and well argued suggestions which should be read as a stimulus to a critical discussion. Although some specific points of his interpretation might be questioned, or they obviously need further analysis, the issues raised by Hicks forty years ago appear still relevant today in considering the evolution of contemporary macroeconomic theory.

The first question that the essay raises is the very notion of trade cycles. Hicks suggests to distinguish various types of historical events, which have been studied under the broad definition of trade cycle. He rejects the interpretation of cycles that Jevons proposes in his theory of sunspots, not only for the specific content of Jevons's theory already criticized by others and soon deemed untenable, but also because he believes that it is fundamentally wrong to regard the broad range of phenomena typical of trade cycles as essentially similar to recurrent natural phenomena .

Historical evidence does not fit with the elementary metaphor of regular fluctuations similar to those occurring in nature, by which Jevons was inspired when building his theory of trade cycles due to sunspots. In his reading of the crises to which Jevons had looked at, Hicks sees a sequence of separate financial crises, which recurred in the context of 19th century British economy at approximate intervals of ten years from 1825 to 1867. These crises had similar characters because of the financial institutional setting (notably banks and the system of trade credit) of the time, and because of the limits to price bubbles and expansionary phases set by the gold standard rules guiding monetary policy.

Hicks mentions as a different phenomenon the prolonged depression, which affected the British economy in the last decades of the 19th century and that lasted till the First World War. In this episode of the British economic history, he sees a remarkably different phenomenon. The depression in Great Britain had no international dimension, since other economies were growing. It was due to the loss of primacy that the British economy expe-

rienced in manufacturing and in international trade due to the competition from other emerging countries. The depression hit the British economy because of the competition of these countries. It was thus an episode of change in the international division of labor, which originated from the catching up of new competitors. The primacy Britain had gained from the first industrial revolution was being eroded by technological progress and the pace of accumulation abroad.

Hicks's interpretation suggests a classification of episodes of booms and depressions that should include as separate episodes and different types of crises major financial crises; phases of depression or stagnation of some duration and persistence which represent a slowdown of the rate of growth; shorter term cyclical fluctuations associated to buffer stocks and their depletion or renewal; price booms due to price speculation in shares, real assets or commodities markets which produce temporary bubbles that eventually burst; some economies experiencing episodes of weak growth that finally peter out; some economies which experience episodes of scarcity that block growth processes and induce recessions or slow growth.

This list casts radical doubts on the possibility to look at the complex of historical phenomena of booms and depressions with the lenses of a strictly cyclical evolution of economic data, conceived as recurring statistical observations of time series which should be arranged in somewhat mechanical cyclical patterns. Hicks seems to suggest that the nature of the phenomena should be looked at with detailed historical lenses, placing in historical perspective the various economies examined and the specific, single or multiple episodes under examination, according to the broad classification of which above.

This is particularly true with regard to the factors which block growth in expansionary phases. Hicks suggests that the mechanisms generating persistence, recurrence or turning points depend on the monetary institutions, on the international monetary system within which an economy operates, on the nature of the financial institutions and the regulations under which work, on state interventions and the stance of public policies (if any), on the more general causes affecting growth in the short and long run.

In this wider perspective the opposition of monetary versus real causes of the cycle fades away. Hicks points out that the so-called trade cycles have essentially to do with accumulation and its pace. Accumulation may slow down and the causes why this, more or less abruptly or for short or long periods, are strictly connected to monetary institutions, monetary policies and the international monetary system. In the more recent periods the stance of public policies plays a role. A further factor is the scarcity constraint hitting accumulation processes due to scarce energy resources, which is also a phenomenon to be understood in a historical perspective in the context of the international arena.

To understand the varying nature of 'trade cycles' Hicks suggests historical reading anchored to the nature of financial institutions (the banking system, the payment system), the presence of an active center in the financial system as (a central bank or some coordinating institution), the operational mechanisms of the international monetary system (the rules and policies that it dictates), the scenarios of competition in international trade, the patterns of global growth, the political context and public policies.

In his 1989 book, Hicks comes back to the ideas presented in the Robbins lecture, but the book offers a more articulate framework for his reflections on trade cycles and how to deal with them from a dynamic perspective. The aim of the book, which is the peculiar mark of Hicks's theoretical reasoning, is to look at markets as complex, interactive social structures, where different specialized agents interact to actively perform transactions, making prices and adjusting supply and demand according to institutional arrangements.

The book contains a conjectural, theoretical analysis of how markets work through specialized intermediaries and the changing institutional rules to which they adhere, and which provide trust and facilitate adjustments in monetary transactions between traders, which involve debt contracts between borrowers and lenders. Some financial structure is embedded in the net of multilateral commercial transactions, but it evolves in history with more complex financial organizations and rules.

Thus, for Hicks, markets cannot work without some organized network of specialized traders and the sophisticated rules they adopt or agree on, along with the evolution of institutions and the irreversible time of history. The book is a peculiar, perhaps quite unusual perspective on how to rebuild economic theory by accounting for markets with no residual assumption of an auctioneer. Hicks builds a theoretical narrative, not a historical reconstruction; but his narrative takes into account the working mechanisms of monetary institutions and major changes in business organizations and market institutions through history. His account of trade cycles should be read against this theoretical background.

In Part 3 of the book (entitled 'Problems and policies'), Hicks devotes one chapter (Hicks, 1989, chapter 11, pp. 93-101) to what he calls 'the old trade cycle'. He opens the chapter underlining that Keynes's work was a turning point between two different epochs in economic thinking. The change was associated with another turning point in the real world, that is to say the 1929-1934 crisis which was 'the passage from one way of organizing economic affairs to what would have to be another.' (Hicks, 1989, p. 93). Instead, other economists, indeed most of them, looked at the situation as a major example of a typical disturbance which was called the trade cycle (Hicks, 1989, p. 93).

Hicks then offers a brief historical reconstruction of the theory of trade cycles as regular phenomena to be studied with scientific methods. Such an

approach started with Jevons in the 1870s, but the cycles that he thought of were not the statistical cycles known to modern economists. Jevons and his contemporaries 'were thinking of the sequence of trade *crises* which had marked the preceding half-century' (Hicks, 1989, p. 94).

These crises had attracted the attention of several economists before Jevons. Hicks concentrates on John Stuart Mill and his *Principles* (1965[1848]). For Mill, the 'cycle was a financial cycle. There was a boom, with rising prices and then rising interest rates; it led to a crisis, with a wave of bankruptcies. The unemployment which followed was a consequence of the bankruptcies (...) After the crisis prices fell: rates of interest then came down. The latter was a first step on the road to recovery.' (Hicks, 1989, p. 95).

The crisis was brought about by a growing demand for credit and, eventually, for 'solid money' (gold), which put at risk the central bank's reserves. The central bank (the Bank of England) reacted by restricting borrowing and this generated the crisis.[23] This sort of cycle had two important characteristics: i) the Bank of England was then the world economic centre; ii) the Gold Standard 'was sacred' and it provided a ceiling to the expanding process (Hicks, 1989, p. 96). Hicks then proceeds to examine the problem of the floor to the cycle.

> Prices, particularly of primary commodities, would fall at the crisis; but if the cycle was to continue (or if there was to be a return to equilibrium) they must be stopped from going on falling. How should that be? They had fallen in the crisis, not because they had been thought to be 'too high', but because the money that was needed to support them had been lacking; bear speculation, selling to buy back later, would nevertheless have been a feature of the fall. One can see that a point would be reached (there is plenty of experience of its being reached) when the balance of opinion among speculators would turn in favour of the fall having gone too far, so they would begin to speculate for a rise, at first very tentatively. Such speculation is stabilizing; it needs to be encouraged. (Hicks, 1989, p. 96)

Mill did not see all this, although it was already in Thornton's *Paper Credit* (1991[1802]) known to him. The 'Thornton precept', as Hicks calls it, predicates that i) once the crisis has started, the center of the system (the Bank of England) must ensure its security, i.e. its reserves, through high interest

[23] 'In the crisis, weak positions were uncovered, and there were failures. But the Bank itself survived, and most of the banks survived. The pressure then relaxed; interest rates, being symptoms of the pressure, came down. When the debris had been cleared up, so that nearly all firms which survived were of unquestioned solvency, an "equilibrium", as it might be called, would be restored. But it would be an unstable equilibrium, since it was just from such that the former boom had started. Sooner or later the cycle would be re-enacted.' (Hicks, 1989, p. 96).

rates; ii) once this is done, the Bank must aim at 'spreading security from itself to the rest of the banking system, and then outside. The two belong together.' (Hicks, 1989, p. 97)

This does not necessarily mean that the interest rates should be reduced as soon as the Bank's security is re-established.[24] The essential point of the Thornton precept is that after a significant crisis the financial system as well as the rest of the economy have to be brought back to health.' (Hicks, 1989, pp. 97-98). This means that 'though the financial system had no sure means of maintaining an "equilibrium", it did have means of correcting excessive departure from it.' There was the conviction that it was possible for major banks to act together to prevent 'overheating'. If the precept was followed there would exist some means to contrast a divergence in the opposite direction. However this implied that 'there was someone, or some body, that was in a position to take the action required. In that crucial sense the system needed to have a *centre*.' (Hicks, 1989, p. 98).[25]

6 Coming to terms with Keynes and 'Keynesian equilibria'

Since the 1930s Keynes's theory has represented for Hicks an important point of reference. He regarded Keynes's contribution as very significant, even though he never was a Keynesian in the sense in which other economists of his time were. Here, of course we cannot enter into a thorough examination of the relationship between Hicks and Keynes; we limit ourselves to consider only some aspects and issues that are more relevant to the main objective of the present paper. We concentrate, in particular, on Hicks's

[24] 'For it should not be taken for granted that offers to lend, at low rates of interest, to *suitable borrowers*, will in such conditions be easily taken up. Active lending presupposes confidence, on the part both of the lender and of the borrower; *and* of the borrower, because of the lender in the borrower, for how should the (now) selective lender have confidence in the borrower if the borrower cannot give reason for feeling that confidence himself? That loans are available at low rates, from one part of the central nucleus of the banking system to another–between well-established banks, or from them to other well-established financiers–does not necessarily imply that they are so easily available outside.' (Hicks, 1989, p. 97).

[25] Such an interpretation of the central bank does not necessarily imply that this is the way in which we now think of a central bank. The contemporary idea of a central bank is that it 'has a close relation to government; it is a part of what in a wide sense may be called the political structure of the country in which it is operating. (...) because of the risks to which any bank is in principle subject, a banking system as such has a tendency to develop a centre, being a bank, or group of banks, on which other banks come to rely.' Hicks (1989, pp. 98-101). Hicks (1989, pp-98-101) concludes the chapter with some historical considerations about the evolution from the Gold Standard regime to its abandonment with the shift from the UK to the US of the world economic center.

critical view of Keynes's *General Theory* (1973[1936]).

In *Economic Perspectives* (1977), Hicks recalls the difference between his approach to trade cycles in the early 1930s and Keynes's position, which was then fully developed in *The General Theory*.

> Like Pigou, (and Dennis Robertson) I thought that we were talking about *fluctuations* (...). Booms could then be considered to be times of high prices, slumps as times of low prices–with regard to some norm, which throughout the fluctuations would be unchanged, or not much changed (...). Keynes, with his keen nose for the actual, the current actual, sensed that in the Great Depression, during which we were then living, that was ceasing to be true; I am sure he was right in thinking that it was ceasing to be true. It is quite another matter whether he was right to project his vision on to so wide a canvas.' (Hicks, 1977, p. 141n).[26]

Hicks's perplexity about the possibility to project Keynes's vision to a 'wide canvas' can be understood by looking back at his 1936 review of *The General Theory* (Hicks, 1936) and at chapter 6 of *Methods of Dynamic Economics* (1985) on Keynes's method.

Hicks sees *The General Theory* as Keynes's breaking away from the traditional view of trade cycles seen as deviations from equilibrium. Still in *A Treatise on Money* (1971[1930]a), Keynes shared this traditional view of trade cycles. Static economic theory explains the working of the economic system in 'normal' conditions. Booms and slumps are deviations from normal and have to be explained by some disturbing cause (Hicks, 1936, p. 239). In 1936, Keynes breaks away from this approach.

> It is no longer allowed that ordinary economic theory can give a correct analysis of even normal conditions (...). But if there is no norm which we have understood, it is useless to discuss deviations from it. The changing, progressing, fluctuating economy has to be studied on its own, and cannot usefully be referred to the norm of a static state. (Hicks, 1936, p. 239)

In Keynes's new analytical and methodological framework, also in a changing economy supplies and demands are necessarily equal if the supply of a certain commodity is defined as the amount of it that sellers want to offer at a certain price at a certain date (the current supply). If there are unsold stocks of the commodity, it is because sellers prefer to sell them at a better price in the future, so that those stocks are not part of the current supply. Therefore, current supply and demand are necessary equal because every transaction has two sides.

[26] Hicks (1982c) is a more detailed exposition of Robertson's approach to trade cycles and the differences with Keynes.

If the analysis is focused on current variables, also prices are determined by current demand and supply. Thus, current supply is determined by the sellers' willingness to hold part of their commodities over for the future. Such willingness, in turn, depends on the sellers' expectations of the future (Hicks, 1936, p. 239).

> There thus emerges a peculiar, but very significant, type of analysis. If we assume given, not only the tastes and resources ordinarily assumed given in static theory, but also people's anticipations of the future, it is possible to regard demands and supplies as determined by these tastes, resources and anticipations, and prices as determined by demands and supplies. Once the missing element–anticipations–is added, equilibrium analysis can be used, not only in the remote stationary conditions to which many economists have found themselves driven back, but even in the real world, even in the real world in 'disequilibrium.' (Hicks, 1936, p. 240)

Keynes's new methodology is the first of his discoveries.[27] From the point of view of pure theory, the method of expectations is likely the most revolutionary element of *The General Theory*. It re-introduces determinateness into processes of change: 'The output of goods and the employment of labour, together with the whole price-system, are determined over any short period, once the stock of goods (...) existing at the beginning of the period, is given, and once people's expectations of future market conditions are given too.' (Hicks, 1936, p. 241).

Moreover, it is also possible to deduce what outputs, employment and prices would be if expectations, the capital stock, tastes, etc. were different. Such a 'method is thus an admirable one for analysing the impact effect of disturbing causes; but it is less reliable for analysing the further effects.' (Hicks, 1936, p. 241).[28]

In this framework, it is possible to say something about 'further effects' as one can deduce what the stock of goods will be at the end of the period if decisions are carried out and this is the basis for the analysis of the next period, but 'it is probable that the change in actual production during the first period will influence the expectations ruling at the end of that period; and there is no means of telling what that influence will be. The more we go into the future, the greater this source of error, so that there is a danger, when it is applied to long periods, of the whole method petering out.' (Hicks, 1936, p. 241).

[27] Hicks (1936, p. 240n) points out the relation between Keynes's and the Swedish School's methodologies.

[28] In a footnote, Hicks clarifies what has to be intended by short period: it is a span of time short enough to allow the neglecting of changes in expectations within it.

Such a difficulty ultimately derives from difficulties concerning the very first period because it is unrealistic to assume that important changes of data leave expectations unchanged even immediately. There is a 'psychological unknown' that affects the extent of the impact of changes and as 'more time is allowed, more and more scope is allowed for such variations, both in degree and kind.' Therefore, it is not to be expected that even most elaborated analyses would allow us to see very far ahead (Hicks, 1936, p. 241). For this reason, Keynes's analysis 'does not settle nearly as many questions as we may hope (Hicks, 1936, p. 242).

Thus, in 1936 Hicks, with the reservation recalled above, regarded Keynes's analysis as fundamentally acceptable as far as it was confined to the short period. Almost fifty years later, in *Methods of Dynamic Economics* (1985) Hicks carried out a more radical criticism of Keynes's short-period analysis and short-period equilibria.[29]

In chapter 6 of the book Hicks deals with Keynes's methods in three of his major works; *A Tract on Monetary Reform* (1971[1923]), *A Treatise on Money* (1971[1930]b; 1971[1930]c), *The General Theory* (1973[1936]). For Hicks (1985, p. 52), Keynes's *Tract* was theoretically conventional: the quantity theory of money is regarded as fundamental. In *A Treatise* there is a significant change: what is fundamental is no longer the quantity theory but the 'fundamental equations' (Keynes, 1971[1930]b, pp. 111-214).

The change, for Hicks, was due to changes in the actual economic order. Between the *Tract* and *A Treatise* Britain had returned to the Gold Standard and Keynes criticized such a decision because he thought that the par of the pound was fixed at a level inconsistent with money wages, which were essentially rigid (Hicks, 1985, p. 53). The inconsistency between wages and the pound exchange rate implied that Britain was in a disequilibrium situation, but classical theory had no satisfactory theoretical explanation of disequilibrium situations. In *A Treatise* Keynes tried to provide it (Hicks, 1985, p. 53).

At the analytical level, considering a closed economy, the source of disequilibrium that Keynes considers is an expansion (or a contraction) of credit and its effects on prices.[30] Keynes's approach was 'Marshallian'. Marshall was concerned with the response to an increase in demand for the product of a single industry. He dealt with the problem by starting from the short pe-

[29]The book is an amply revised version of the first part of *Capital and Growth* (1965) and Hicks's further attempt to develop his dynamic analysis (Hicks, 1985, pp. v-vi).

[30]'This concentration on prices is characteristic of the *Treatise* model; to us, who know what was to happen afterwards, it is bound to be startling. Effects on output, and on employment, which were later to move so much into the centre of the picture, are entirely disregarded. (Was this a relic of Quantity Theory problematics? Keynes was writing a book about money.) So his disequilibrium is solely one of prices (and profits). These are considered by themselves.' (Hicks, 1985, p. 54).

riod, when the new equilibrium is determined by the firms' response given their inadequate equipment. Only when new equipment is available, the industry will realize a long-period equilibrium. Keynes started from such an analytical framework (Hicks, 1985, p. 54). The notion of equilibrium adopted in *A Treatise* corresponds to Marshall's long-period equilibrium, at which profits are at their normal level.

Hicks (1985, pp. 55-56) then re-writes Keynes's equations by using the *General Theory* notation and considers the effects of deviations from the (long-period) equilibrium. The analysis of the process considered by Keynes could be carried out by using a sequential model, in which increments in C (consumption) depend on the excess profits (Q) that occurred in the previous 'week' (Hicks, 1985, p. 56). But this is not what Keynes did.

Since, in Keynes's analysis, both C and Q are derived from national accounting, they have to be contemporaneous, but this makes sense only if the economy has already reached an equilibrium. In other words, the disequilibrium to which Keynes's fundamental equations refer 'must itself be an equilibrium' (Hicks, 1985, pp. 55-56). This conclusion was 'congenial' to Keynes in 1930 (Hicks, 1985, p. 57). However, in Keynes's construction it is harder than in Marshall's to hold that a short-period equilibrium 'could go on, even for a while, without "other things" being affected.' (Hicks, 1985, p. 57).

A Treatise was subjected to several criticisms regarding in particular the possibility that price adjustments can occur without any effect on the output and employment. Thus, Keynes abandoned the *Treatise* hypothesis of fixed output and employment and allowed for quantity changes. The natural way to do this was 'to seek to construct a model in which quantities changed with no effect on prices. Price-effects, at the least, had to be pushed into the background.' (Hicks, 1985, p. 57).

Hicks's observations on Keynes's approach to prices in *The General Theory* could be misleading as it is not fully correct to hold that he tried to build a model in which quantity changes do not affect prices.[31] However, this does not invalidate Hicks's more general criticism of Keynes's method in *The General Theory*. He argues that the Marshallian distinction between short and long-period equilibria could no longer be maintained. In a long-period equilibrium, profits are normal in the sense that they do not incentive entrepreneurs to change their scale of operations. In Keynes's new model, the scale of operations being now a variable, equilibrium can be realized at

[31] Although it is true that Keynes did not pay too much attention to prices in the book, Keynes (1973[1936], pp. 292-309) makes it clear that, generally, prices are increasing in the output. This is not the case only under the special assumption that the aggregate supply curve is perfectly elastic. Here, it is not possible to enter into a thorough discussion of this issue; it suffices to recall that Keynes's aggregate supply curve is derived from a Marshallian supply curve under the assumption of decreasing marginal returns. For more details, see Sardoni (2011, pp. 67-82).

any level of activity and such equilibrium is consistent with unemployment (Hicks, 1985, pp. 57-58).

But Keynes's equilibrium is not such as to justify the fact that, at it, there is no incentive for firms to vary their output and employment. While in *A Treatise* such a situation denoted a long-period equilibrium from which the economy can deviate in the short period, in *The General Theory* it is no longer possible to interpret it in the same way, because 'the new equilibrium was to be reached by a multiplier process', which is the same sort of process by which the short-period equilibrium of *A Treatise* was reached. Thus though equilibrium is defined in a long-period manner, it is used in the way in which the *Treatise* had used the short-period equilibrium. 'There is now just one sort of equilibrium; but it has some of the characteristics of each of the parents from which it has sprung.' (Hicks, 1985, p. 58).

Like in Marshall's short and long-period, equilibria in *A Treatise* are static in the sense that they remain unchanged in so far as the factors that determined them remain unchanged. But can *The General Theory* be regarded static in this sense? Keynes thought that it could (Hicks, 1985, p. 58). For Hicks, instead, there is a fundamental reason why this is not the case.

> Saving and investment are flows, which extend over a period. It is accepted that what happens during the period depends not only on investment and saving propensities, but also upon the stock of capital goods with which the period opens. Now if, during the period, net investment is not zero (and it is surely intended that the model should apply more generally than to that special case) the stock of capital goods, at the end of the period, cannot be the same as at the beginning. So it is impossible for the behaviour of the economy, in the next period, just to repeat. The *General Theory* model, in the period examined, cannot be in a static equilibrium. (Hicks, 1985, p. 59)

Furthermore, it is not possible to respond to this criticism by arguing that it could be addressed to Marshall's short-period equilibria as well and Marshall 'would have had a way out'. Marshall would have argued that when, in the short period, the output is being produced with an inappropriate equipment, there would be more appropriate new equipment under construction which, however, cannot yet be used and, hence, does not affect the current short-period equilibrium.

This line of defense is not valid when macroeconomic analysis is carried out. Keynes's equilibrium, like Marshall's, is a 'restricted equilibrium', but it has to be restricted also in another sense. It must be confined to the determination of employment within the period under consideration, taking that period by itself. Keynes's equilibrium can be static only in the sense that employment does not change during the period considered. 'Other

things that are implied in the model, such as the capital stock (which would be changing), are not considered. We just put them out of our minds.' (Hicks, 1985, p. 59). Therefore, for Hicks, Keynes's theory is not dynamic but, like Marshall's, quasi-static.

> So long as the period is looked at *by itself*, all that matters about the investment, during the period, is the employment that it gives, and the income that it generates. It does not matter, accordingly, whether the form that it takes is wisely or unwisely chosen. It is only when one looks further forwards that it does matter. The Keynes theory, so interpreted, is inherently short-sighted. (Hicks, 1985, p. 60)

A possible way out of Keynes's difficulties would be to limit the analysis to situations in which, for a certain time, there is no net investment, i.e. the economy is in a static state. In this way the Marshallian short-period equilibrium can last a significant span of time.[32] This can certainly be a situation that market economies can experience, but it cannot be regarded as sufficiently general to provide a satisfactory analysis of the capitalist dynamics. Keynes's theory would be the 'Economics of Depression' (Hicks, 1937, p. 155).

Keynes's 'Marshallian' theoretical and analytical approach in his 1936 book is not such as to be regarded as a 'general theory' of market economies. It is its 'equilibrium method' that makes this hard, if not impossible altogether. The construction of a general theory of market economies, to the extent that this is possible at all, should be based on the grounds of the dynamic method, which Hicks tried to develop during large part of his intellectual life.

7 Some concluding critical remarks

The theory of trade cycles or, more specifically, the analysis of booms and slumps face significant challenges that we mentioned in section 2. In the paper we try to show how Hicks's approach can provide, or at least suggest, an answer to such challenges.

The two main features of Hicks's approach which we pointed out are:

- the idea that each single cyclical episode can be properly understood and analyzed only thanks to the analysis of the historical and institutional context in which it takes place. From this perspective, metaphors and/or formal models can have a degree of usefulness, but they cannot be the key single instrument to give account of and explain economic fluctuations.

[32] The short period becomes much longer than at Marshall's times (Kahn, 1989, p. xxiv).

- From a more general point of view, a proper analysis of fluctuations can be carried out if the, largely dominant, static (or equilibrium) method is abandoned in favor of dynamic methods.

In the paper we illustrate the main features of Hicks's most representative works on trade cycles and dynamics by pointing out their innovative and original aspects. In our view, Hicks's works are an important contribution to a better understanding of the capitalist dynamics also in the current situation, even though, coherently with Hicks's position, such a task requires taking account of the present economic, institutional and political context, which of course differ from that analyzed by him.

Moreover, there are also theoretical and analytical issues that, we believe, require further developments with respect to Hicks's own contributions. In particular, innovations, their nature and the role they play in the dynamics of market economies need more attention than Hicks paid to them. Hicks acknowledges that innovations are a fundamental factor that can bring the economy out of a phase of depression or stagnation. As we saw in section 3, in *Value and Capital* he stresses the importance of innovations for the economy's exit from slumps, but already in his review of *The General Theory* he had pointed out their importance for the effects on investment and Keynes's failure to adequately deal with the issue (Hicks, 1936, pp. 248-252).

Keynes's position in *The General Theory* was quite likely influenced by the fact that he apparently was not fully aware of the prospective sources for further innovative advance in advanced market economies, as if in the roaring twenties welfare gains due to innovations had somewhat hit a roof, in spite of the fact that his generation had experienced radical change in life style and consumption patterns due to technological advance.[33]

Hicks, however, seems to regard innovations essentially as exogenously produced rather than the outcome of the capitalist competitive process itself. Hicks's position is different from Schumpeter's, who establishes a strong link between the entrepreneurial drive for profits and innovation.[34] Schumpeter's economics hardly attracted Hicks's attention. This is rather surprising as Schumpeter's general views on how to approach the analysis of business cycles is very similar to Hicks's with respect to the importance of the historic comprehension of the context in which they take place.[35]

[33]It is interesting to recall that such a criticism of Keynes's 'pessimism' had been clearly formulated by Pigou (1936). Pigou criticizes Keynes's pessimistic view ('Mr. Keynes' vision of the day of judgment') by pointing out that 'If the immediate future is to resemble at all the recent past, new objects, the creation of which requires investment, are likely to be invented.' (Pigou, 1936, p. 129).

[34]'For actions which consist in carrying out innovations we reserve the term Enterprise.' (Schumpeter, 1939, p. 102).

[35]'General history (social, political and cultural), economic history, and more particularly industrial history are not only indispensable but really the most important contributors to the

The present paper is not a place where the topic of the relation between Hicks's and Schumpeter's approaches to the dynamics of capitalism can be thoroughly addressed. We limit ourselves to simply suggest a possible fruitful line of future research.

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understanding of our problem. All other materials and methods, statistical and theoretical, are only subservient to them and worse than useless without them.' (Schumpeter, 1939, p. 13).

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