On The Concepts of Period and Run in Economic Theory

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I

Heinz Kurz has made major contributions to our understanding of long-period production interdependent models inspired by Piero Sraffa's classic writings, see, for example, Kurz and Salvadori (1995). In doing so he has, on the whole, sided with the view of Pierangelo Garegnani, John Eatwell and Murray Milgate, see, for example, Eatwell (1997), that, traditionally and necessarily, rigorous economic theory can only be long period in the sense of analyzing relationships between dominant, persistent forces at work in the economy. This implies that there is no place, or at least little fundamental place, for a theory of the short period in its own right: this is so, despite Richard Kahn's superb, path-breaking 1929 Fellowship Dissertation for King's College, Cambridge, "The economics of the short period"[1], and the dominant view of Keynes scholars that the analysis of *The General Theory* itself is mainly placed in a short-period setting, as it is in Michal Kalecki's approach in his analysis of accumulation, the cycle and growth. The last occurred in Keynes's

* I thank but in no way implicate Christian Gehrke, Raja Junankar, Peter Kriesler, Prue Kerr and John Nevile for their comments on a draft of this chapter.

[1] Kahn's Dissertation was only published in English in 1989, shortly after Kahn's death, see Kahn (1989), Harcourt (1994; 1995, Ch 5).

own as well as others' contributions, not least because of Kahn's key influence on the development of Keynes's thought as he moved from *A Treatise on Money* (1930) to *The General Theory* (1936), see Harcourt (1994; 1995, Ch 5).

In some ways Kurz's stand is reflected in the methodology of modern mainstream theory, not least as it is to be found in the dominant textbooks. Typically, students are introduced to the theory of long-term growth, a modern updated version of Roy Harrod's natural rate of growth, g_n, Harrod 1939, 1948. g_n is now interpreted as the **actual** long-run path of the economy which needs explanation, rather than the supply-side potential of the economy, as Harrod had it. A perhaps extreme version of this is the following statement by Robert Lucas[2] "The balanced growth path will be a good approximation to any actual path "most of the time" …. exactly the reason why the balanced path is interesting to us" Lucas (1988, 11). In so far as the short period gets a hearing at all, it is in analysis of fluctuations around this long-period full employment trend of the economy, often (but increasingly less so), in terms of the **IS/LM** interpretation of Keynesian theory. This dichotomy in the profession goes back at least to the unceasing debates between those two great friends, Thomas Robert Malthus and David Ricardo, who seldom saw eye to eye

[2] Needless to say (as I always advise Heinz not to write!), I am most grateful to Heinz for bringing the quote to my attention in a draft of Kurz(2010) at p.9. Alas, in the published version he has removed this quote.

on analytical matters, yet greatly loved and respected each other. (Could this be said of the pairing in our trade now of any two 'heavies', who take diametrically opposing views?) Ricardo wrote to Malthus about their disputes: "It appears to me that one great cause of our difference of opinion … is that you have always in your mind the immediate and temporary effects of particular changes – whereas I put these … quite aside, and fix my whole attention on the permanent state of things which will result from them". (Ricardo to Malthus, 24 January 1817, in Sraffa with Dobb 1951-73).

One by-product of this long-established dichotomy has been the incoherence in the narratives about the medium term between the short period and the long period, an incoherence which has been stated most clearly by Bob Solow (1997, 231-32): "One major weakness in the core of macroeconomics … is the lack of real coupling between the short-run picture and the long-run picture."

I want now to mention a long-running distinction that I often stress, that between 'period' and 'run'. I argue that though they were not always consistent in their usage – would we have ever remembered Keynes saying "**In the long period**, we are all dead" ? – Marshall and Keynes did have such a distinction in mind. 'Period' is a theoretical concept where what is and what is not confined to the *cet. par*. pound is decided by the theorist in question (and the issue being examined); whereas 'run' refers

to actual historical episodes where what relevant determining factors change or do not change are products of that particular historical episode and are not decided by the theorist and/or historian analyzing it. Dennis Robertson clearly recognized this when in 1956 he distinguished between two concepts of the long period which Marshall had in mind, one of which I would argue is more akin to a run: "one in which it stands realistically for any period in which there is time for **substantial** alterations to be made to the size of the plant, and one in which it stands conceptually for the Never-never land of unrealized tendency", Robertson (1956), 16, emphasis is in original, see also Guillebaud (1952), 126-7.

Finally I shall argue that a possible solution to the conundrums and incoherence thrown up by these issues is to be found in the approach (which occurred independently of each other) of Richard Goodwin and (late) Michal Kalecki. In their approach, the trend and cycle are regarded as "indissolubly mixed" – "fused indissolubly" is Goodwin's expression, see Goodwin (1982, 117) – and that the world we observe is exhibiting processes of cyclical growth. In such processes, the impact of long-term and short-term factors on decision-makers in the present provides the conditions to establish, not only what happens now but also what will happen next; and so on. Kalecki put it succinctly and with crystal clarity (so what is new?): "the long-run trend [is] but a slowly changing component of a chain of short-period situations … [not an] independent

entity", Kalecki (1968; 1971), 165. For Goodwin's seminal contributions to the same approach, see Goodwin (1982) and Harcourt (1985; Sardoni 1992, Ch 21). Peter Kriesler has reminded me that the same considerations apply to the neglected but fundamental work on the concept of the traverse by, for example, John Hicks and Adolph Lowe, see Kriesler (1999).

II

This view of the world provides a fundamental critique of the statistical procedure of breaking time series down into trend and cyclical components,[3] a procedure which assumes that the factors responsible for each component are overwhelmingly independent of one another. It also challenges the mainstream procedure of approaching economic issues by asking: is there an equilibrium out there to be found and, if so, is it unique or but one of a multiple set? And then asking, if there is an equilibrium (or a set), is it (or are they) locally and globally stable? This procedure also implies that the factors responsible for the existence of equilibrium (equilibria) are overwhelmingly independent of those responsible for stability. Keynes himself seemed to follow the traditional approach when, in response to a criticism of *The General Theory* by Ralph Hawtrey, Keynes wrote:

[3] It does not affect the impact of either seasonal or the existence of residuals on the magnitudes of variables in time series.

> "[Hawtrey] finds … the whole genesis of dynamic change, not in what I regard as the fundamental factors, but in what I think is better described as the higgling of the market.
>
> Entrepreneurs have to endeavour to forecast demand. They do not, as a rule, make wildly wrong forecasts of the equilibrium position. But they may not get it just right; and they endeavour to approximate to the true position by a method of trial and error …" Keynes, *C.W.*, vol XIV, 1973, 182.

In his 1937 lectures he wrote:

> "If I were writing the book again I should begin by setting forth my theory on the assumption that short-period expectations were always fulfilled; and then have a subsequent chapter showing what differences it makes when short-period expectations are disappointed" Keynes, *C.W.*, vol XIV, 1973, 181.

To be fair to Keynes, he contradicts himself later on when he outlines the method of shifting equilibrium, which by allowing for such feedbacks, takes him a long way towards a theory of path-dependent cyclical growth, see Keynes 1936; *C.W.*, vol VII, 1973, 293-4.

Joan Robinson also clearly had such a set of criticisms in mind when, in explaining Harry Johnson's inability to understand *The General Theory*, at least as she did, because of his age, she wrote: "The short period is here and now, with concrete stocks of the means of production in existence. Incompatibilities in the situation will determine what happens next. Long-period equilibrium is not at some date in the future: it is an imaginary state of affairs in which there are no incompatibilities in the existing situation, here and now" Joan Robinson (1962), 690.

Historical circumstances help to explain the disjuncture between the approaches and the reality that the theory is meant to illuminate. First, it is not always properly taken into account that our founder, Adam Smith, wrote before the industrial revolution had taken off in the United Kingdom in an all-embracing manner and that he was influenced by Isaac Newton and the characteristics of classical physics. Thus, his distinction between market prices and natural prices, with the latter argued to be centres of gravitation, is clearly an expression of this intellectual background. Whether market prices are regarded as fluctuating around or converging on natural prices, the latter are seen as having the characteristics of the core of a magnetic field, as being the dominant attractor of actual prices, the principal determinant of their sizes. Moreover, in a world before the industrial revolution was generally established, reversibility was more easy to accept than in a world where

the industrial revolution was emerging and technical advances, investment and dynamic competition became more and more the norms. In such a world, classical physics, the analogy of the pendulum always swinging around or returning to its state of rest, became less and less appropriate, yet the bulk of economic theory continued to be built on such an analogy.

As we saw, Ricardo concentrated on the long period and, while he became more and more aware of the possible disrupting effect of machinery on employment levels and wage-earners' well-being, he found little place in his formal analysis for that most characteristic feature of the capitalist environment, technical progress and its embodiment through accumulation in the stock of capital goods. Perhaps this over states the case because he did liken the effects of free trade to being akin to technical advances in agriculture, staving off in real time, the inevitable approach otherwise to the classical stationary state, see Harcourt 2006, Ch 7, the section on Ricardo's theory of distribution and growth.[4]

Marx, of course, did recognise all this and there is no doubt that his basic concepts and his schemas of production and reproduction could be adopted to allow incisive analysis of these phenomena. Marshall also was well aware of these outstanding facts of life in the world around him, but his theoretical structure, static partial equilibrium analysis, using supply

[4] Peter Kriesler also reminded me that I had written about these puzzles in Harcourt (1981), Sardoni (ed.) (1992), see Kriesler (1999), 400-401.

and demand curves in the market, short and long periods, was at odds with his deep insight that the development of the economy was better explained by biology in the form of an evolutionary organic system.[5]

III

Many years ago I wrote a "speculative and exploratory" essay entitled, "Marshall, Sraffa and Keynes: incompatible bedfellows?" in which I examined the use by these authors of the concept of a centre of gravitation, see Harcourt (1981; Sardoni, 1992, Ch 12). In contrast to the vision of the person being honoured in this volume, I had more faith in the operational nature of the concept in the analysis of Keynes's short period than I did in its use in Sraffa's system and Marshall's long period. I argued that it was more reasonable to take the short cut of using the short-period equilibrium values of saving, investment and income associated with the point of effective demand to illuminate actual values in the national accounts from period to period (quarterly and annually) than to explain observed price patterns by underlying natural prices, prices of production or normal prices. I also identified (with the help of John Eatwell, Pierangelo Garegnani, Bertram Schefold and Ian Steedman) four different definitions of centre of gravitation, all of which

[5] In his PhD dissertation, Hart (2009), Neil Hart has written an incisive account of Marshall's dilemma and the more successful attempts to overcome it in the decades after Marshall's death in 1924 by the insights and contributions of modern evolutionary economists.

have been implied in economic theories using the concept.[6] Since I wrote the essay, I have been persuaded by Ajit Sinha, see Sinha (2010, Ch. 4), that Sraffa's system does **not** require the concept of a centre of gravitation in the sense of Smith and Ricardo's natural prices and Marx's prices of production. Marshall's use of the concept in a long-period context seems to me to be more and more problematic, no doubt a sign of yet another senior moment.

As Robertson pointed out, see p.4 above, in the Never-never land of theory, the Marshallian long-period equilibrium is the final outcome of a series of short periods (short-period equilibria?) converging on it, stations on the way to this long-period cross. But it is a Never-never land because once the analysis starts, no change in methods of production, i.e., no further technical progress or innovations are allowed by the theorist to impinge on the convergence process. Clearly this is a serious limitation on the depiction of what actually happens in real world processes. (Heinz Kurz is, of course, explicit about this limitation, see, for example, Kurz and Salvadori (1995), Chs 1 and 12). Yet this 'vision' not only underlies Marshall's analysis, it is also in essence the specification implied when applying co-integration techniques in modern econometric studies, see

[6] Three were analogies drawn from physics, the fourth was drawn from meteorology. The first was a frictionless pendulum, the second, a pendulum which eventually stopped swinging because of frictions, the third, a dog always running towards its master, who is riding a bike. The fourth relates to the average values of the principal variables determining the average values of temperature over the year, see Harcourt (1981); Sardoni (1992, 251-2).

Granger, 1993; Harcourt 2007. It is also the procedure that Stephen Marglin followed in his 1984 Marshall lectures, Marglin (1984a) and big book (1984b), see Harcourt (2006), Ch. 8.

IV

The person who most successfully overcame Marshall's self-imposed limitations was, of course, Wilfred Salter, see Salter (1960, 1965), who successfully brought together Marshall's methods and concepts, short period and long period, in his pioneering analysis of the embodiment through accumulation of the latest technical advances in additions to the existing stocks of capital goods. Salter did not require that the economy or industry or firm actually reach the position where the entire stock of capital goods consisted of the latest "best-practice" technique chosen under the influence of the expected relative prices of the services of the factors of production at the beginning of the period of analysis; only that, in a competitive environment, accumulation would proceed until actual prices allowed only the ruling competitive rate of profits to be received on new investment. Previous vintages in the stock of capital goods continued to contribute to total output as long as their quasi-rents were positive (strictly, non-negative). The abstractions needed to make this theory precise, to use a period to illuminate a run, are not

nearly as far removed from the actual real world processes present in the run, as to lead us to query the illuminations provided.

The long-period method abstracts from these factors just as it illogically in terms of its own approach ignores in its analysis, the effect of another dominant and persistent force – the presence of inescapable, fundamental uncertainty in the environment in which all important economic decisions have to be made.

V

While I have been critical of some aspects of the approach to which Heinz has made such outstanding contributions, it would be wrong to deduce that there is not a substantial place in economic theory for this approach and these contributions. That is a major reason why I have always fought the attempts to remove them from their rightful place, both historically and analytically, under the rubric of Post-Keynesianism. Moreover, even Joan Robinson, who was the most persistent and sustained expositor of the criticisms I have been making, acknowledged in her final evaluation of Piero Sraffa's influence, their essential place in the critique of the conceptual foundations of the mainstream and in the provision of viable and persuasive alternative approaches to economic theory. Thus in her 1980 article with Amit Bhaduri, she coupled together

Marx, Sraffa and Kalecki as compatible bedfellows (each in their own place) in the way forward.

Richard Kahn in 1959 set out very clearly the nature, role and limitations of Golden Age analysis, of which the long-period theory of production is surely a species of this large genus. And in his positive endorsement of Kurz and Salvadori, the late Paul Samuelson noted that he would be buying new copies of it (or subsequent new editions) at regular intervals, so great would be the depreciation of the current vintage in his possession from much use.

VI

As I argued above, Goodwin's and late Kalecki's approach overcomes the incoherence located in the gap between the short period and the long period in the approach of mainstream economics, and in Marshall's attempts to close it. Goodwin and Kalecki also use centres of gravitation in the short-period Keynesian sense I discussed above. But that is not to say that there are not major difficulties associated with the analysis of cyclical growth itself. These have mainly to do with the transfer of the short period from the analysis of the individual firm or industry to the economy as a whole. It is probably not too far from actual happenings to take the capital stock (and the supply of skilled labour) as given for the firm's and the industry's short period (especially in a period

of recession or depression as Kahn pointed out). But the assumption that all short periods in the economy are of the same length and start and end on the same dates are heroic assumptions of a completely different order of abstraction. One way in which this problem has been, or can be, tackled is to use rates of change at an instance in time. I think Joan Robinson may have had this in mind when she argued, see Joan Robinson (1971), 17-18, that "short period" was an "adjective, not a substantive", for which she was robustly criticized by Tom Asimakopulos, always a definite period of stretch of time person himself, see Harcourt and Kerr (2009), 93-94. He argued for the use of the macroeconomic short period being a definite length of historical time and so must have, at least implicitly, incorporated the assumptions mentioned above.[7]

An instance of time is also not without its difficulties, for actions occurring concurrently at an instance in time and which together determine current aggregate activity and its composition, are themselves outcomes of individual decisions spread out over past time and applying to periods in the future of different expected lengths – they do not occur simultaneously. That is why Keynes when writing *The General Theory* eventually despaired of ever finding an appropriate unit of time to handle these puzzles and so he set them to one side, see Keynes (1973), 184-85;

[7] I was glad to find that I had set out these limitations clearly at the beginning of an article I wrote in 1963 and published in 1965, see Harcourt 1965; Sardoni (1992), 83-84.

Harcourt (1981); Sardoni (1992, 258-59). But the same sorts of issues plague long-period analysis too.

VII

To sum up, cyclical growth models, for all their limitations and unfinished business, have removed one major obstacle to the analysis of processes occurring in historical time. That is why I have come to regard them as the most promising way forward (though, alas, I lack the technical skills to be of much use in this exciting task). I do not, of course, expect Heinz to agree with the first part of the last sentence though I am sure he would agree with the second part! Moreover, in writing this chapter I am conscious that I have drawn on views I have set out in other places over a long period (sic). But as I move through my 80th year, perhaps I may be indulged as I bring them together in one place in grateful homage to a great and good friend.

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