

L. Tvede. *Business Cycles from John Law to the Internet Crash*. London and New York: Routledge, 2001. Pp. x + 350. ISBN 0 415 27050 2. £65.00.

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Lars Tvede, an engineer with a BA in economics who has worked in investment banking and in the high-tech and communications industries, has added a worthy contribution to the already long list of publications on business cycle theories.¹ This is one in the handful of post-Haberler single-handed book-length attempts to survey and classify trade cycle theories, and is notable for not following the customary approach consisting in pigeon-holing theories according to the actual cause evoked to explain cycles and crises. Most of the existing surveys (a number of which take the form of appendices to books whose authors attempted to place their own theories in context) tend in fact to reproduce and update the scheme used by Haberler in *Prosperity and Depression*, which distinguishes monetary theories, over-investment theories, under-consumption, changes in costs, maladjustments, psychological theories, and harvest theories.²

Tvede's approach reflects his education and professional background, and here we find both the merits and the shortcomings of this book. Business cycle theories, as well as the older explanations of crises, are read and classified according to the mechanics of the feedback mechanisms required to explain the cumulative divergence from equilibrium and the turning points, with a special attention to the phenomena connected to credit and financial markets. In a way, this perspective is very basic; yet here lies its strength. Any explanation of a crisis must in fact, logically speaking, take into account some factor capable of explaining why the system remains (for a time at least) far from equilibrium: there must be some kind of positive feed-back between an effect and its cause so that the cause is reinforced instead of exhausting itself; this may be coupled to a mode-locking mechanism, that is, something coordinating and synchronising the behaviour of different parts of the system. And any explanation of turning points must include some negative feed-back mechanism slowing down and eventually reversing the operation of the positive feed-backs. Some of these mechanisms are endogenous while others are exogenous; some are linear and others non-linear; some deterministic and others stochastic; some operate on intrinsically stable systems and others on unstable ones. Tvede translates trade cycle theories in terms of the logical-mechanical components of each explanation, and is therefore able to supply simple schemes for classifying these models (a task which the reader will largely have to accomplish him- or herself).

Three such schemes are worth mentioning, for their intrinsic interest and as they give a fairly good idea of Tvede's approach. The first concerns positive feed-backs, of which five typologies are listed (p. 165): positive feedback loops ('vicious circles, in which a given event stimulated another, which in turn stimulated the first. Early theories such as those of Mill and Marshall, which suggested that people accelerated spending when they saw prices go up, belonged to this category'); echoes ('clusters of investments in durable capital goods ... or consumers goods'); cascade-reactions ('chain reactions with a built-in amplifier effect. This was typical in "mass-psychology" theories'); lags (examples of which are cobwebs and accelerators); and disinhibitors ('phenomena in which potential negative feedback

processes were temporarily blocked by positive feedback processes. Many psychological theories incorporating tendencies towards conventional behavior could be described as such').

The second scheme regards the upper turning point, which for the economy is characterised by negative feedback loops (bottlenecks, business expenditure and profitability, critical lengthening of investment periods), re-investment echoes and lags (accelerator and cobweb phenomena, and lagged inventory adjustments), while in the case of equities they are characterised by negative feedbacks (valuations falling behind actual prices, rising cost of money, drain of liquidity to the real sector, new issues), echoes (waves of profit-taking) and cascades (p. 258).

The third scheme provides an 'overview over different approaches to business cycle modelling at the end of the millennium', which are classified in a four-box grid according to whether they are deterministic or stochastic and endogenous or exogenous (pp. 289-94). The separating line for the deterministic-stochastic division is whether economic behaviour is relatively predictable and orderly or relatively complex and unpredictable: the exogenous-endogenous division, besides its obvious economic meaningfulness, is based on the awareness that 'modeling inherent instability meant use of non-linear functions'. Most classical and neoclassical models belong to the endogenous deterministic category. The endogenous and stochastic group includes some strange bedfellows such as Keynes and Minsky on the one hand, for their emphasis on financial instability, and Jevons's sunspots together with rational expectations models. Jevons, however, is also seen as the first example of the exogenous and deterministic models, which possibly include political cycle theories. Finally, the real business cycle theories of the 1980s are exogenous and stochastic, as they 'typically suggest a dynamic behavior where the amplitude of fluctuations was determined mainly by the size and frequency of the shocks, and where the length and sequence of cyclical events was determined by the inherent nature of the propagation mechanism'.

Although the partitioning is blurred and there can be overlapping, this kind of approach is promising as it points to some essential features of cycle theories and in particular to the fundamental problem they have to tackle: the relationship between crisis and equilibrium. Whether implicit or explicit, the reflection on what brings and keeps the system far from equilibrium is at the heart of business cycle and crisis theories; it is not just a matter of identifying *the* destabilising factor or factors, but of realising that in order to provide a valid explanation of crisis, the *possibility* of crisis has to be contemplated at the outset. The problem is not mainly one of mechanical causation, but an epistemic one. Although relatively rarely, some cycle and crises theorists explicitly discussed this problem. Marx, for instance, examined the possibility of crises *before* discussing their necessity. Keynes insisted that there is a neat dividing line between those (the orthodox) who believe that the system is self-adjusting in the end, and therefore rely in their explanation on exogenous causes or on frictions and maladjustments, and those (the heretics) who reject this idea, thereby supplying endogenous explanation of crises ('Poverty in Plenty: Is the Economic System Self-Adjusting', November 1934, in *Collected Writings* vol. XIII). Harrod, although not relying on Keynes's orthodox/heretic distinction, expressed the same concept by way of criticism of Pigou's psychological theory and by considering the instability of equilibrium as the *vera causa* of the cycle. But the most explicit statement to such an effect was given by Adolph Löwe in 1926, who clearly affirmed that no business cycle theory is

possible at all if equilibrium is supposed to be stable. Hayek acknowledged the importance of Löwe's problem (although he tried to bypass it), and drew the only possible consequence for the historian of thought: 'the only classification [of business cycle theories] which could be really unobjectionable would be one which proceeded according to the manner in which such theories explain the absence of the "normal course" of economic events, as presented by static theory' (Hayek, *Monetary Theory and the Trade Cycle*, London: Cape, 1933, pp. 53-54).

Normality *versus* abnormality of equilibrium and crisis, orthodoxy *versus* heresy, stability *versus* instability: these are the conceptual couples recurrent in the economic debate which lay behind the classification propounded by Tvede. In spite of being conducted more in engineering than in economic terms, Tvede's approach – by showing how the problems of equilibrium, instability and cycles are intrinsically related – is enlightening and likely to be a suitable accompaniment (and possibly a guideline) to a history of crises and cycles theories developing Hayek's hint.

The engineering approach is at the same time the strength and the weakness of this book. The theories Tvede discusses are rarely placed in their context, some interpretations are rather hazardous (Say's Law, for instance, is taken to mean that production *stimulates* demand: p. 94), there is hardly a broad outline of what unites and divides the main schools of thought, there are many imprecisions (which are however compensated by a number of penetrating judgements, often thrown out almost parenthetically), credit and financial instability are overemphasised, there are some relevant omissions (the list of names missing from the index includes people such as Spiethoff, Tugan-Baranovsky, Kalecki, Harrod, Aftalion, Malthus, Sismondi, Moore, Haberler and the Swedes; one of the most surprising exclusions is Richard Goodwin, whose pioneering contributions in non-linear dynamics surely deserve a reference, especially considering that the chapters dealing with chaos theory hardly mention an economist), and the book could have been improved by a good deal of copy-editing (several names are misspelt, hardly any reference indicates page numbers, the index is not complete and the list of references misses a number of items cited in the text).

Nevertheless, this enterprise was obviously not meant to be a scholarly treatise on the history of business cycle theories. Tvede's book is rather an interpretation of the complex developments of the theoretical reflections on a problem which, willy-nilly, accompanied most of the history of economic thought and still is with us. Again, this has the advantage of offering a clear perspective which is missing from other accounts, but is subject to the risk of narrating the events in teleological terms as leading, along with progress in the analytical toolbox, towards a more complete and rich kind of explanation. Tvede occasionally succumbs to this temptation, as for instance when reconstructing the 'archaeology' of trade cycle theories (chapter 6), beginning from a Cambridge connection (Marshall, Pigou and Robertson, complemented with a reference to Hawtrey), gradually realising that more data were needed, data which were supplied first by Mitchell and then by Kuznets, who also realised that along with the 'Juglar' cycle there was a longer one, which coexisted with a range of cycles of different periods (Kondratieff's, Kitchin's, and Metzler's inventory cycles) and are actually incorporated in a unifying theory by Schumpeter. The upshot of such a narration becomes clear a few chapters later, when a model coupling cycles of different wavelengths is discussed, showing the emergence of various kinds of loops and feedbacks leading to the identification of chaotic motion (chapter 18; to honour the

truth, however, it should be pointed out that Tvede acknowledges that contemporary model-makers are not always aware, as the 'classicals' were, that several explanations of cycles are possible and necessary and should be allowed to co-exist).

Once one is aware of the aim and of the shortcomings of this book, it makes very valuable reading. The peculiar style of narration supplies an additional bonus: it is packed full of anecdotes, each chapter has a secondary story to tell (often illustrated with pictures of the main characters), the main concepts are expounded in boxes or bullet-listed. The result is a very clear and entertaining account of a potentially boring subject.

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Notes

1 This is a second edition; the first was published in 1997 by Harwood Academic Publishers, and bore the subtitle: *From John Law to Chaos Theory*. The new edition has about 70 additional pages, most of which update the final part with reflections induced by the internet bubble; there are two new appendices, one listing the American leading, coincidental and lagging indicators and one depicting a typical sequence of events in a business cycle.

2 A relevant exception is Mirowski's *Birth of the Business Cycle* (New York and London: Garland, 1985), where the organising principle is found in the logical 'stages' (not necessarily chronologically developed in the same order) necessary to construct a theory of instability.