This book is chiefly concerned with the econometric “hunt for the long wave”, the debate as to whether a recurring cycle of some 50 years duration can be observed in various economic series, back to 1850 or beyond. It begins with an interesting introduction to the early literature. Juglar, who in 1860 proposed the shorter (9–12 years) cycle which bears his name, appears as the main progenitor of trade cycle theory in general. Tugan-Baranowsky, a rather later and equally distinguished writer on trade cycle theory, is shown to have made a direct contribution to the “discovery” of the long wave; later scholars like Parvus and Pareto who have previously been given credit for it, appear to have done their work just after the appearance in their respective languages of translations of Tugan-Baranowsky’s work. Van Gelderen’s striking paper of 1913 also shows clear links with its Russian forerunner.

There is then (in chapter 2) a thorough discussion of Kondratieff and Schumpeter, the two giants of early long wave theory, and (it turns out) proponents of two alternative econometric methodologies. Kondratieff held that long waves in volume series (e.g., GNP, industrial production, as opposed to price series) could only be revealed once the underlying trend had been eliminated. This was reasonable enough; but he used the crude method of least squares to find the trend. He then sought to filter out shorter cycles from the series by smoothing them with a 9-year moving average. Reijnders shows that this procedure inevitably introduces serious distortions; and it completely fails to deal with cycles longer than the moving average, such as those of 15–25 years subsequently put forward by Kuznets. Kondratieff finally identified his long waves by visual inspection; as he did with “raw” price series. A further objection to his statistical methodology is that the only pure volume series he used were from the 1830s or 1850s to about 1913 – i.e., only about one and a half times the length of his alleged “waves”.

Kondratieff’s approach could be described as long-run and inductive; Schumpeter’s was short-run and deductive. He argued that there was no real trend which could be distinguished separately from cycles; only a “result trend” which was left when all the cycles had been “peeled away”. The task was rather to “peel away” the impact of shorter cycles. The statistical methods for doing so

must grow out of the theory of the patterns to which they are to apply. From knowledge about the phenomena to be handled, which is of course basically empirical but at the same time a priori with reference to each individual task in hand, we must try to form an idea about the properties of statistical contours and to derive statistical procedures appropriate to expressing those properties.”

(p. 66)

In practice however these procedures depended heavily on smoothing the data by the use of moving averages like those of Kondratieff. There was in any case no serious attempt at econometric testing; time series were used rather to illustrate a “historico-descriptive” argument and wherever they did not fit there were ad hoc explanations of the deviations.

In chapter 3 Reijnders turns to more recent empirical work by aficionados of the long wave. Much of it has involved the use of a “binary split” method by which long wave movements are found in relatively uncontroversial series (price levels) and the volume series then tested for cycles with the same period. Reijnders finds this procedure deficient also, given the problems of possible time lags and dating errors. Another problem has been the use of crude two-point raw data measurement of growth rates. This can produce the “alias effect” by which a long wave can be artificially created by dating its upswing from a trough of a shorter cycle to a subsequent peak, and its downswing by the reverse choice of dates.

Reijnders in chapter 4 shows that Kondratieff’s original insight was right: it is essential when analysing time series for evidence of a given cycle, first to “peel away” movements of longer period than the one being sought. If the “full trend” or “systematic long run movement” is not first eliminated, accurately, subsequent analysis will suffer from “perspectivistic distortion”. Chapter 5 discusses the elimination procedure, showing that the polynomial model is less trustworthy than Bloomfield’s hidden periodicities model, by which periods, amplitudes and phases of a given number of periodic functions are simultaneously estimated on the basis of a least squares criterion. He experiments with a number of UK data series for 1700–1985.
wholesale prices, industrial production and import and export volumes – and concludes that three periodical components (including a standard trend) are adequate for the estimation procedure. Chapter 6 shows how he actually calculates the full trend to be eliminated from each series. He decides early on that one periodical component seems to extend beyond the 285-year interval, so that the exercise will suffer from perspectivistic distortion unless he can find an even longer series. There is one such, the Phelps Brown/Hopkins series for consumables prices, going back to 1264 (690 years). This is therefore used to generate a fixed periodicities model to apply to all the other series. This is found to perform well; the common treatment appears to be justified since a "family relationship" is found among the amplitude proportions and phase differences of the series mentioned. This can scarcely be a by-product of the procedures used since another series, for population, after identical manipulation completely fails to show a family relationship with the rest.

Standardised data is then obtained by subtracting the log transformed full trend from the log transformed data series, and Reijnders can now proceed, in chapter 7, to use spectral analysis to look simultaneously for Kondratieff, Kuznets and other cycles. He defines the "domains" in which he is looking for evidence of cycles ("power") as >60 years ("trend"), 40–60 years (Kondratieff), 25–40 years ("buffer zone"), and 15–25 years (Kuznets). He fails to find Kondratieff power in the long price series, but does so once he has truncated it to 1700–1985; the wholesale price and export volume series are also satisfactory. However, industrial production and imports show most power in the trend domain (the latter also in the buffer zone). This agrees quite well with results for the population series, and so these apparently disappointing results are explained (away?) as due to causal influences from population. More volume series are available from the 1830s or 1850s and are treated similarly; they prove refractory until adjusted for the (direct) effects of the two world wars, but then yield Kondratieffs (and most of them Kuznets), with the exception of industrial production, which obstinately shows power in the trend and buffer zone. The buffer zone shows power for most of these shorter series and Reijnders concludes that a "building cycle" according to Easterlin's model of the interaction between economic and demographic factors must be regarded as the best candidate for explaining it.

The author concedes in his conclusion that his results are only applicable to the UK; moreover,

The present results have only an empirical status and as such only provide an alibi for a preoccupation with long-wave analysis. They can, however, indirectly contribute to what will ultimately be the principal part of the validation of Kondratieff's finding: its explanation at a theoretical level.

(p. 242)

This contribution, in spite of Reijnders' magnificent and systematic display of econometric virtuosity, is not entirely clear to this reviewer. Casual empiricism is enough to show that most volume series for most countries conform very well to the Kondratieff hypothesis since about 1920. The power shown in the Kondratieff domain in this period is probably great enough to account for Reijnders' favourable results for most series over longer periods. What then if the apparent 20th century Kondratieff is explained away, as by Solomos Solomou in Phases of Economic Growth (Cambridge, 1987) in terms of "episodic traverses" such as the process of catching up after World War II? (Solomou has a similar explanation of the apparent Kondratieff in the price series over a much longer period.) This book seems to the present reviewer decidedly the best example hitherto of the "search for the long wave" at a purely empirical level; but its author is all too right in his emphasis on the need for a theoretical explanation, and surely the form of the empirical investigation should be determined by the nature of such an explanation? One might be still more discouraging, and argue that it is inherently highly unlikely that any satisfactory explanation could be forthcoming for a Kondratieff in the sense of a more-or-less regular cycle over some two centuries. A macro-economic theory, to be plausible, must be built on sound foundations of assumptions about institutions and structures – economic, social, demographic, political. Can it seriously be imagined that the transformation of the world economy, society and polity over the last two centuries would have left behind it enough constancy in institutions and structures for such an economic cycle to have remained intact? The enterprise seems doomed. Better by far to seek to understand how changes in institutions and structures have, gradually or suddenly, led to changes in the dynamics of economic growth and