

prevent this outcome. In this model, price and wage flexibility are the *source* of the *instability*, and in Chapter 3 the authors show that some real wage inflexibility, introduced via a real-wage Phillips curve, can improve the stability properties of the model.

The authors' positive contribution begins in Chapters 4 and 5 which present the building-blocks of the authors' prototype model. Chapter 4 modifies the overlapping generations model of Chapter 2 to allow for imperfectly competitive firms and increasing returns to scale. The result is the possibility of multiple equilibria and an emphasis on the importance of firms' expectations about the level of aggregate demand. Chapter 5 examines the labour market. Hahn and Solow argue that a 'realistic' model must allow for persistent involuntary unemployment and, as part of the negative aim of the book, they aim to show how involuntary unemployment can arise from the rational decisions of firms and workers. Whilst endorsing the approach taken by efficiency wage and insider-outsider theorists, Hahn and Solow also present two new models. One is a modified job search model whilst the other, which the authors make use of in Chapter 6, is a model of bargaining that they term a 'fairness' theory. The latter approach, which is reminiscent of Shaked and Sutton (1984), assumes the existence of insiders, who are already employed by the firm, and outsiders or unemployed. The authors show that if the outsiders adopt a strategy in which they refuse to compete with the employed for jobs unless one of their number defects, in which case they all compete, there may exist a subgame perfect equilibrium in which there is no wage undercutting. In this model, the fear of a 'wages free-for-all' prevents the unemployed from lowering the wage.

Chapter 6 presents a preliminary model of the type Hahn and Solow advocate. It is in the spirit of the previous chapters in that imperfect competition and increasing returns are combined with a labour market with features similar to that of the fairness model presented in Chapter 5. Importantly, the model is only *in the spirit* of the previous chapters: the underlying relations are suggested by, but do not arise exactly from, the models previously presented. The authors justify the departures from the exact models by the extra 'scope, realism, flexibility, and tractability' gained. The result is a model that achieves the authors' aim of depicting an economy that experiences fluctuations in employment and output,

has a procyclical real wage, and in which there is a role for active government policy.

Perhaps the most disappointing part of the book is the failure of the authors, having invested so much effort in developing the model, to put it 'through its paces'. Hahn and Solow content themselves with presenting only a small number of simulation results, and are at pains to point out that their aim was only to show the flavour of the results that can flow from a model of this type. However, this leaves the reader without any sense as to how general the simulation results are, and how sensitive they may be to the specific parameter values and functional forms assumed. In particular, one would expect the results to be particularly sensitive to the 'naive' expectations adjustment assumption. Nevertheless, there is much of value in this provocative, lucidly written volume. Readers will take away with them a greater skepticism for the view that price and wage flexibility are all that is required to ensure a stable economy. Others will be sympathetic to the pragmatic approach taken with respect to microfoundations. To the extent that this prompts researchers to develop models in a similar vein, Hahn and Solow will have achieved both of their aims.

MARK WRIGHT

*Australian National University*

REFERENCES: Cooley, T.F. (ed.) (1995), *Frontiers of Business Cycle Research*, Princeton Press, New Jersey; Shaked, A. and Sutton, J. (1984), 'Involuntary Unemployment as a Perfect Equilibrium in a Bargaining Model', *Econometrica* 52, 1351-64.

*F.Y. Edgeworth: Writings in Probability, Statistics and Economics 1-3*, edited by Charles R. McCann Jr (Edward Elgar, Aldershot, 1996), pp. xliii + 1613. £UK315.

Towards the end of his life, Edgeworth edited his magnificent three volumes of *Papers Relating to Political Economy* (1925), containing his major papers and reviews in economics. However, about three quarters of his published papers were in mathematical statistics, and during his life he

received at least as much acknowledgement for this work. For example, he was President of Section F of the British Association in 1889 and 1922, President of the Royal Statistical Society 1912–14, and was its Guy Medalist (Gold) in 1907. He received his first major recognition in his crucial role in producing the three volumes of the British Association Report on index numbers in the late 1880s. While the originality and importance of his work in economics is recognized, his statistical star has waned. These three volumes, edited by McCann, provide a companion set to accompany his volumes of economics papers. They provide a valuable reference source for any library.

Volume I contains 29 papers under the headings of 'probability' and 'the law of error'; volume II contains 25 papers, largely on distribution theory (though no general heading is given); and volume III contains 35 applications in the areas of economics, the natural sciences, education (the statistics of examinations), and psychological research. Nevertheless, the emphasis throughout is on conceptual issues and the development of statistical methods; there is always the impression, despite the obvious effort required to produce the applications, that Edgeworth is concerned mainly to illustrate the way in which methods might be applied, rather than primarily being concerned with establishing empirical results. With these headings the papers, reproduced directly and in full from the original sources, are in chronological order and include some reviews. Unfortunately the quality of the reproductions is sometimes poor, and a number of the figures appear simply, to use the words of the *Economic Record's* review editor when handing over these volumes, as 'Edgeworth black boxes'. The editor makes special mention, as 'a very important addition to the collection' of the *Nature* article containing Edgeworth's 1889 address to Section F of the British Association; but given the quality of the reproduction most readers would prefer to read the version that Edgeworth included in his edited *Papers*. Another overlap with the earlier volumes is the 1910 *Economic Journal* paper on 'the application of probabilities to economics'.

Anyone approaching Edgeworth's work is faced by several difficulties, although there are substantial rewards to be obtained like, as Edgeworth himself would say, alpine flowers which can only be seen at the high altitudes over which he soared. His style is extremely terse and allu-

sive, coloured (though not always clarified) by his fondness for neologisms, obscure references and sharp comments. He was engaged, during an 'age of luxuriant speculation', in a very lively debate involving crucial stages in the development of statistical concepts and methods. Despite the long papers on, for example, 'the methods of statistics' and the 'representation of statistics by mathematical formulae', Edgeworth did not provide for statistics the types of synthesis that he fortunately produced in economics for the pure theory of monopoly, distribution, taxation and international values. The modern reader will find it difficult to penetrate the debate without already knowing something of the issues and methods. When discussing barter in a large market Edgeworth used the description, 'a mighty maze! but not without a plan', quoting (as always without acknowledgement) the lines from Pope's 'Essay on Man': this expression is also perfectly suited to Edgeworth's own work. But Edgeworth did not himself provide such a plan, and he never responded to Jevon's kindly and valuable advice to work hard to improve the clarity of his writing. He nearly always addressed the members of a community of scholars who were assumed to know all the issues and have an understanding of the background to the debates.

It therefore seems unfortunate that the editor has not provided such a 'road map' or plan, instead giving a brief 14-page introduction, with only five pages devoted to a commentary on the articles. It would perhaps have been better to omit the brief biographical material and discussion of his economics and instead give more emphasis to placing the papers in perspective. In the discussion of the economics there is the amazing statement that *Mathematical Psychics* 'catapulted him to fame', and the editor regrettably mistakes Jevon's point about the need for clear writing, and accuses him of failure 'to grasp the message' (p. xxii) of *Mathematical Psychics*, a book that Jevons was singularly well placed to appreciate.

The reason for making these papers available in this way is surely that there is still much that the modern reader can learn from reading Edgeworth in the original. The idea, commonly expressed in many areas, that all previous work of any value is encapsulated in modern texts, is fanciful in the extreme. But some more help from the editor would be appreciated.

The modern reader, in this era of specialization, cannot help but be amazed by the breadth and depth of Edgeworth's work. It has to be remem-

bered, however, that in the 19th century it was still possible to find polymath of very high quality. Edgeworth's own family circle provided him with early examples, and others such as W. Whewell, H.C.F. Jenkin, W.K. Clifford and, to some extent F. Galton, may be mentioned. Jevons, who lived near Edgeworth in Hampstead, also had extremely broad interests and could appreciate all of his endeavours. Edgeworth was nevertheless exceptional in the quality and originality of his work. This is why his papers still repay close reading. The editor and publisher are therefore to be thanked for providing a valuable research resource.

JOHN CREEDY

*University of Melbourne*

*The Bank of England: Money, Power & Influence 1694–1994*, by R. Roberts and D. Kynaston (Clarendon Press, Oxford, 1995), pp. xii+ 315. Price not stated.

This collection of papers, presented at a 1994 conference to mark the Bank of England's tercentenary, that considers various aspects of the Bank's history by subject, is a valuable complement to Kynaston's monumental history of the City (the first two volumes of which were reviewed in the December issue) and the official Bank histories (Clapham 1994, Sayers 1976 and Ffords 1992) that outline the subjects considered here (and much more) essentially chronologically. The authors also had access to the Bank's archives (a welcome change in attitude to the secretiveness of a quarter-century ago).

After an opening survey of developments up to 1820 (by Bowen), Kynaston outlines the development of the original private bank into its present position as a vital formulator and implementer of important aspects of government policy.

Cairncross's lucid outline of the progress in the Bank's role as an important influence in the economy is a model for economic historians. It confirms the validity of Montagu Norman's observation that the Bank has the 'right to offer advice even to the point of nagging; but always of course subject to the supreme authority of the government' (quoted in Sayers 1957). The United

Kingdom is fortunately unique in that differences of opinion between the Bank and the government may be discussed openly without questioning 'the supreme authority of the government' or leading to the resignation of the Governor.

Roberts completes the domestic description with an outline of the convoluted transformation of the Bank from being 'another' private bank to being the fulcrum of the British financial system and a leading arbiter of the international system.

Cottrell describes the increasing complexity of the Bank's operations as the influencer and monitor of the world's leading international financial market between 1918 and 1972. Pringle extends the record with a description of Central Bank cooperation since 1970.

A detailed chapter describes the evolution of the Bank's administration and organization.

The final contribution is a lenitive discourse on the Bank's past, present, and future by Pennant-Rea (then the Bank's Deputy-Governor). It implicitly assumes that the Bank will achieve greater independence from the government—a proposal comparable to a suggestion that defence policy should be separate from foreign policy and that the armed forces should be free of governmental supervision.

An appendix is a 29-page chronology of the important events in the Bank's history. It is a valuable source for financial historians.

GRAEME S. DORRANCE

*University of New South Wales*

REFERENCES: Clapham, J. (1994), *The Bank of England: A History*, Cambridge; Fforde (1992), *The Bank of England and Public Policy, 1941–1958*, Cambridge; Sayers, R.S. (1957), *Central Banking After Bagehot*, Clarendon Press, Oxford; — *The Bank of England, 1891–1944*, Cambridge.

*Post Keynesian Economics: An Annotated Bibliography*, by John King (Edward Elgar, Aldershot), pp. x + 816. £UK135.

Whilst the precise definition of any school of thought is not straight-forward, the problem is