the period 1950–1985. For taxes and government spending since World War II there is evidence of a change in the causal relation in the late 1960s and early 1970s. Prior to then there is some evidence that taxes caused spending; subsequently the evidence suggests causal independence.

The two case studies are based on previously published studies from a decade ago. The macroeconomic debates have continued apace since then, as have developments in methodology and econometric technique. As Hoover says in closing the book, "The river that started with Hume rolls on, and we have yet to reach its mouth." For readers interested in methodology and econometrics of causality, and in the search for causal structure among macroeconomic variables, there is no better way to enter this stream than by reading *Causality in Macroeconomics.*

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Robert Leeson, ed., *A. W. H. Phillips*: *Collected Works in Contemporary Perspective* (Cambridge: Cambridge University Press, 2000) pp. xvii, 515, $100. ISBN 0-521-57135-9.

This volume contains Phillips's complete published output (ten journal articles, two book chapters, two book reviews and one discussion note), plus seven previously unpublished notes and essays. Although his output was "a bit thin," as Phillips himself once remarked (p. 27), it is even more than the editor promises to the reader. According to the editor's counting, the volume contains twelve chapters of Phillips's published output, six of previously unpublished essays, plus a "little-known book review." To survey Phillips's complete (published and unpublished) output I have compiled a bibliography, put at the end of this review, which in my view is an essential part of any Collected Works. It also gives me the opportunity to correct and complete a few bibliographic data.

Reluctantly, I have to maintain a little bit longer my negative tone before I can start what I really want to do, namely to praise this book. According to Leeson's counting "twenty-nine of the world's leading authorities in their field have contributed thirty-two chapters (thirty of which have been specially commissioned)" (p. xvi). The list of contributors counts thirty-two persons, which makes me wonder who is considered as a lesser authority. These contributors have contributed thirty-one chapters, plus a Foreword (by Arthur Brown) and a Preface (by Robert Leeson). So, which of the chapters has not been specially written for this volume and where has it/they been published before?

Okay—done with this. I have read this book with pleasure. First of all, Phillips had not only an extraordinary life, but must have been an extraordinary man. Or as Arthur Brown has put it: "to know him was to like him" (p. xiv). This book is a memorial to the person "whose writings (and hydraulic model) by no means exhaust the reasons for which he should be remembered" (p. xii).

The volume consists of four parts: (1) Bill Phillips: Some Memories and Reflections, (2) The Phillips Machine, (3) Dynamic Stabilisation, and (4) Econo-

metrics. Part 1 deals with the person behind the machine and his economic and econometric writings. In particular, Leeson's short biography is moving and gives us many insights to the mensch Phillips was. Personal notes are written by James Meade, Henry Phelps Brown, Elizabeth Johnson, Ann S. Schwier, and Brian Silverstone, and provide "the stuff of which affectionate stories are made" (p. 23).

First, some dry details of his life. Alban William Housego (Bill) Phillips was born on November 18, 1914, in New Zealand. In December 1929, he passed matriculation. He was too young to go to university and became an electrical engineering apprentice. In 1935, he succumbed to wanderlust and set off for Australia. In July 1937, he left Australia for Britain. Phillips had been studying by correspondence for the examination of the Institute of Electrical Engineers (IEE). Shortly after his arrival in London, in November 1938, he became a graduate of the IEE. When WWII broke out, he joined the Royal Air Force and was posted to Singapore. He was evacuated from Singapore and volunteered for further service in Java. He was eventually captured by the Japanese, and he spent three and one half years in prisoner-of-war camps. He survived and received the chance for a university education. He enrolled at the London School of Economics (LSE) for an undergraduate degree in sociology. Economics was a compulsory subject in his sociology degree, and he became interested in Keynesian theory. To learn to understand the economic system, he designed and built what became known as the "Phillips Machine"—or Moniac. In August 1967 he left the LSE and took up a chair at the Australian National University. When he suffered a stroke two years later, he and his family moved to Auckland, New Zealand. He insisted on running a course on "The Development of the Chinese Economy Since 1949" at the University of Auckland. He suffered a final stroke on March 4, 1975, the day after his first lecture of the academic year.

Part 2 deals with the Machine, of which the very first prototype was constructed in cooperation with Walter Newlyn in a garage in Croydon. Newlyn recalls how he early in 1949 met Phillips. Phillips showed him a paper he had written, entitled "Saving and Investment: Rate of Interest and Level of Income," in which he had been unable to interest any of the LSE staff whom he had approached. Newlyn, possessor of the only existing copy, summarizes this paper nicely in chapter 8 on the origins of the machine.

David Vines (chapter 9) argues that one should not evaluate this machine as a historical curiosum, but instead think of it as a heuristic device that was of enormous value to Phillips in his thinking about the economy and which, therefore, can still give acute insights to us (pp. 39–40). Accordingly, he argues "to understand the significance of the Phillips Machine is to try to understand how it works" (p. 42). Consistent with this view, Vines provides a detailed discussion of a few experiments on the machine, using the operating manual that Phillips prepared as a guide for users of his machine (that appears as an appendix to chapter 9). Subsequently, he shows how working with the machine might have given Phillips insights that led him on to his subsequent work.

Such an extraordinary machine, of course, deserves histories of its own. These are written by Nicholas Barr, Graeme Dorrance, R. M. Goodwin, and Doron Swade, also telling us what happened with it after it, like a Pinocchio leaving his father Geppetto, started to have a life on its own.

In the preface to this volume, Leeson notes a "curious" neglect of the theoretical dynamic stabilization perspective of Phillips in contemporary macroeconomics. Bob Gregory recalls that Phillips once said to him that "his best work was largely ignored—his early control work—and his Phillips Curve work was just done in a weekend" (p. 11). Adrian Pagan, on the other hand, observes that the stability essays are still cited forty years after their publication and, having such longevity, should be explored as to why this is so. According to him there are four innovations in the essays: (1) policy should not be thought of in a static but dynamic mode, (2) policy is best thought of in terms of rules, (3) the interaction of policy and system dynamics is very hard to assess; and (4) some useful observations about the nature of policy were presented as a result of the simulations performed: some seemingly innocuous lags could render many stabilization policies counterproductive. Optimal control is very powerful if the system is known. However, the equations of the system might change in response to the policy rule, as emphasized by the Lucas Critique. So, the interest in optimal control work is declined since this kind of critique became commonplace, however this is not to say that there has been a decline of interest in the study of the impact of policy. Moreover, Robin Court (chapter 49) argues that Phillips, in his later unknown work, made a comparable contribution to that known as the Lucas Critique, and thus in fact foreshadowed it.

Part 3 contains, beside a section on Optimal Control with the above-mentioned stability papers, and a section on Growth (containing "one of the most important essays that Phillips ever wrote" (Bergstrom, p. 190)) a section on the famous Phillips Curve. Ann Schwier recalls that Phillips described it as a "quick and dirty" job. He had been "playing around with some data, came up with a curve which he said was largely freehand drawn" (p. 25). According to Schwier, the curve was definitely not structural. It was a prediction relation—a crude one, but he thought it did the job. "We specifically asked about this matter of being structural and Phillips gave us a very emphatic 'no'" (p. 25). It is good to be reminded what the draftsman himself thought about this Curve, which is in sharp contrast with the more common assumption, namely that the Curve represents a structural relationship, as reiterated by Lawrence Klein's discussion (chapter 30, p. 290).

Phillips's legacy in econometrics (Part 4) is that he opened up a new field of research on continuous time econometrics modeling and statistical inference (chapter 36). Besides, Phillips played a key role in modernizing the economics department at the LSE by introducing mathematics and econometrics into the teaching of the economics degree, as witnessed by David Hendry (chapter 38).

This is a highly recommended book. In the first place, it contains the almost-complete works of Phillips, including previously unpublished but nevertheless seminal essays. In the second place, the chapters responsible for the "contemporary perspective" provides us very insightful details, ranging from very personal experiences and anecdotes to technical introductions and discussions of Phillips's Machine, Curve, and other valuable contributions to economics.

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[1] "Saving and Investment: Rate of Interest and Level of Income, 1949." Summarized by W. Newlyn in chapter 8.
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[3] "Wage Changes and Unemployment in Australia, 1947–1958." Working paper University of Melbourne, 1959. (Chapter 28.)
[4] "Estimation in Continuous Time Series Models with Autocorrelated Disturbances." Outline of a (unpublished) paper presented at a meeting at Nuffield College, Oxford in 1962. (Chapter 47.)
[5] "Efficient Fitting of Rational Spectral Density Functions and Transfer Functions." Introduction and summary of an essay that appears not to have survived. (Chapter 48)
[6] "Statistical Estimation for the Purpose of Economic Regulation." September 9, 1964. (Chapter 51.)

[7] "Estimation of Stochastic Difference Equations with Moving Average Disturbances." Extension of (1978), circulated privately in the late 1960s, but a copy of this paper has not been found.
[8] "Economic Policy and Development." Handwritten seminar presentation, April 1968. (Chapter 23.)
[9] "Economic Policies and Development, and Comments on Trade and Protection Policy." Handwritten note that follows closely the content of [8]. Phillips organized his comments as a contribution to the debate about the Vernon Committee Report, published in 1965.
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[12] "Minimum Identification Conditions for the Derivation of Optimum Linear Decision Rules."
[13] Efficient Estimation of Multivariate Difference Equations with Serially Correlated Disturbances."
[14] "A General Method of Obtaining Optimal Linear Decision Rules for Multivariate Dynamic Systems.
[15] "Some Developments in Time Series Analysis," presented at the December 1962 meeting of the Econometric Society. Summary of [12], [13], and [14].

Michalis Psalidopoulos and Maria Eugenia Mata, eds., *Economic Thought and Policy in Less Developed Europe*: *The Nineteenth Century* (London and New York: Routledge, 2002), 320 pp., $100. ISBN: 0-41525-820-0.

This book is a welcome addition, or rather pioneer, in the literature dealing with economic development, economic history, the history of economies and economic policy. It is rare for a volume to be of potential interest to such a wide audience:

> This project, then is about economic thought in a—restricted—number of European countries, over time. It seeks to bring out how economic thought got transformed and adapted and how it responded to economic policy issues and its subsequent development. It also throws light on the dissemination of economic ideas, as the leading economies like Britain, France, Germany and the Low Countries, the countries that 'produced' economic theory, are excluded from our enquiry since we focus on the industrial latecomers (p. 2).

A wide range of countries is covered and the fact that we usually hear so little about these economies makes the essays all the more interesting. Denmark, Norway, Finland, Russia, Poland, Rumania, Turkey, Serbia, Greece, Italy, Portugal, and Ireland are the countries covered. Many different themes are introduced *en passant*. For historians of economic thought it is of importance to note that British or classical economics were not dominant. The eminence of the Germans is more noted, as in the essay by Heinonen on Finland. Nationalism is the most important shaping force in the latter half of the century. One is pleasantly surprised to learn that one of the intellectual leaders of the Turks, Ziya Gokalp, paid such close attention to the doctrines of the economists and was familiar