

Hoover, Kevin D.

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## A review of Alan Bollard's 'A Few Hares to Chase: The Economic Life and Times of Bill Phillips'

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A REVIEW OF ALAN BOLLARD'S  
*A FEW HARE'S TO CHASE: THE ECONOMIC LIFE AND TIMES OF BILL  
PHILLIPS*

BY  
KEVIN D. HOOVER

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CENTER FOR THE  
HISTORY OF POLITICAL ECONOMY  
AT DUKE UNIVERSITY

**A Review of Alan Bollard's**  
***A Few Hare's to Chase:***  
***The Economic Life and Times of Bill Phillips***

Kevin D. Hoover  
Department of Economics  
Department of Philosophy  
Duke University

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### **Abstract**

A.W.H. Phillips is little known to the economics profession today, except as the creator of the Phillips curve. Bollard's engaging biography tells the story of a provincial New Zealander and practical engineer, who emerges as a hero in World War II, and plots a spectacular rise from 3<sup>rd</sup> class sociology degree to Tooke Professor of Economics at the LSE in just eight years. Bollard's biography is a welcome corrective – both in demonstrating that Phillips' most important contributions to economics lay in the realms of macroeconomic dynamics and time-series econometrics and in showing how those aspects of his work must be appreciated to place the more famous Phillips curve into perspective.

**JEL Codes:** B31, B22, C22, E12, E31, E32

**Keywords:** A.W.H. Phillips, Phillips curve, time-series, Phillips machine, Moniac, L.S.E.

Alan Bollard, *A Few Hares to Chase: The Economic Life and Times of Bill Phillips*. Oxford: Oxford University Press, 2016. xi + 263 pp. \$35 (cloth), ISBN: 978-0-19-874754-3.

Reviewed for EH.Net by Kevin D. Hoover, Department of Economics, Duke University.

To most economists "Phillips" is just the name of a particular, much discussed, and much controverted curve relating inflation to unemployment. Who Phillips the man actually was is a matter of little interest and much ignorance. A few of the better informed may have heard something of the Phillips machine -- a piece of idiosyncratic plumbing, thought to be no more important to economics, perhaps, than a child's vinegar-and-soda model of a volcano is to volcanology. Alan Bollard's biography of Alban William Housego ("Bill") Phillips finally gives us a fascinating picture of just who Phillips was. The book is short. Primary source materials on Phillips are limited and his professional career was short, but the book would probably be only half the length had Bollard not taken his subtitle seriously and written extensively about Phillips' times and context, as well as about his life. Much of the history is written in a subjunctive mood, with Bollard noting what Phillips would have experienced or known based on where he was when. On the whole, Bollard's strategy provides useful contextualization and not merely padding.

Phillips was born in 1914 on a farm in New Zealand. He came from a family of tinkers. His father found ingenious ways to bring running water and electricity to the farm before these were widely available in their area. The son inherited a deeply pragmatic feel for what works and what helps.

Phillips had a practical, rather than intellectual, intelligence. Through correspondence and vocational courses, he trained and passed qualifying examinations as an engineer. As soon as he was able, he set off on a journey to England -- mostly by land. The journey took him from New Zealand to Australia, Japan, Korea, China, Manchuria, Russia, Germany, and finally to England, arriving in 1935 at the age of 21. Phillips appears to have approached the trip with an adventurous, but naïve spirit. He was arrested in Japan for taking pictures in a restricted military area. He offered his services as an engineer to a Siberian mine, which, in the event, did not want him, the mine being part of the Gulag with the work provided by prisoners.

After several years in a variety of engineering jobs in England, Phillips had only just decided to seek a degree at the London School of Economics (LSE) when the war broke out. Phillips joined the Royal Air Force and was stationed in Singapore in time for the Japanese invasion of Malaya. He provided signal service by modifying the armaments of the obsolete Brewster Buffalo fighter aircraft to make them somewhat less overmatched against the advanced Japanese fighters. Phillips was named a member of The Most Excellent Order of the British Empire (M.B.E) for his heroism in defense of the transport *Empire Star*, which came under heavy Japanese air attack while evacuating British troops and civilians from Singapore. He ultimately was imprisoned by the Japanese on Java. Here his practical engineering skills proved useful, as he was able to cobble together radios and to figure out clever ways to hide them in order to keep his fellow prisoners apprised of the war news.

The war was a prelude. The heart of Phillips story is the LSE. His observation of the social organization of the prison camp piqued Phillips' interest in the social sciences.

He came at the subject with the mindset of an engineer, but not, it must be said, with that of a central planner, but rather as a practical man who could identify and solve problems.

On being demobbed in 1946, Phillips decided to remain in England, and briefly studied at the School of Oriental Studies (Mandarin and Chinese history) and the School of Slavonic and East European Studies (Russian). He had a gift for languages, proving ultimately to be fluent in Mandarin, Russian, and French, as well as English, and to have a working knowledge of Dutch, Malay, and German. He entered the LSE -- a war-weary veteran among callow youth -- reading sociology. In the end, he squeaked by with a Third Class degree, having passed his sociology examinations, but having failed applied economics and economic history and just passing economic principles by a single mark (41 of 100). Bollard places part of the blame on his "nicotine addiction," which strikes me as rather implausible, given the prevalence of heavy smoking at the time and the many successful nicotine addicts.

Still, Phillips stunningly poor performance in his first degree sets the stage for a most extraordinary story: in 1949, he barely achieved a B.A. in sociology, by 1954 he received a Ph.D. in economics, and by 1958 he was Tooke Professor of Economics at the LSE. The key to this success was the Phillips-Newlyn machine. Phillips tried to make sense of some Richard Sayer's lectures, drawing on some hydraulic analogies in Kenneth Boulding's textbook, and ultimately produced a paper based on them. Walter Newlyn, who later became a well-known British monetary economist, was also an ex-serviceman and a student with Phillips at the LSE. He read Phillips' draft and introduced him to John Hicks' IS-LM model of Keynesian economics. Together Phillips and Newlyn with support of the LSE decided to construct a hydraulic working model of the economy out

of old aircraft parts. This might seem today a quixotic endeavor, but Bollard helps us to recall that Phillips worked at a time when digital computers were primitive, expensive, and not widely available and when the Keynesian model was only beginning to be understood.

To make the machine required all of Phillips' engineering prowess. At one frustrating juncture, he said "at least Heath Robinson's contraptions always worked" (p. 130). (The cartoonist Heath Robinson was the British equivalent of the American Rube Goldberg.) But, as Bollard makes clear, the problems were economic as well as mechanical. Verbal and graphical descriptions could elide and ignore aspects of the economy that the engineering requirement that the model should actually work forced Phillips to face. These included the need to develop a consistent set of stock/flow relationships, to account for the role of unemployed resources and capacity constraints in the economy, to be specific about the kinds of policy interventions that were possible, and to account for the transitional processes between equilibria.

The machine forced concreteness and clarity onto the model. It was documented in a journal article, was a success, and was taken up as a tool by James Meade and others in their teaching. The LSE supported an improved model, which was eventually commercialized as MONIAC, the acronym for a name suggested by Abba Lerner: Monetary National Income Automatic Computer. Twelve to fourteen of the machines were built -- mostly for universities, but also for two central banks and the Ford Motor Company. James Meade had a pair of mirror-image machines built that could be connected together to illustrate international macroeconomics. The machine was talked



about in the popular press and by politicians. Several of the machines are preserved in museums today.

MONIAC formed the basis for Phillips' doctoral dissertation. The machine so impressed the economists at the LSE that Phillips received his Ph.D. in 1954 and was quickly promoted to Reader in Economics. Bollard refers to the position of reader as the equivalent of associate professor in the system of ranks employed in the United States and increasingly around the world. But in fact, in Britain in the early 1950s, professorial chairs were very few and represented a fairly exalted status, so that a readership was as high as many academics could ever expect and more nearly equivalent to a typical full professorship in the United States today. In 1958, he was named to the Tooke Chair in Economic Science and Statistics in the University of London (of which the LSE is a part), a chair previously held by Edgeworth and Hayek -- not a bad show for the poor sociologist of 1949.

The lessons of MONIAC formed the basis for Phillips' most important work in economics. The machine convinced Phillips both of the necessity of a fully worked out model of the economy and of the limitations of such physical models. Its operation impressed upon him the possible instabilities of the economic system and the potential role of policy in reducing them. Phillips addressed these themes by immersing himself in the emerging field of control theory, again drawing on his engineering background. In two papers in 1954 and 1957 he analyzed the susceptibility of an economy in which processes take place over time to display fluctuations and instability and the role of economic policy in smoothing those fluctuations. He applied the proportional-integral-and-derivative (PID) control system to economic problems. This is probably Phillips'

most important contribution to economics. In the context of the control approach, he identified the importance of expectations and the noninvariance of economic relationships, now commonly known as the Lucas critique. While on sabbatical at Cambridge, Milton Friedman met Phillips and from him got the idea of adaptive expectations, which he and colleagues, such as Phillip Cagan, subsequently applied frequently in empirical analyses. Bollard does not note that Friedman repaid Phillips in a debased coin, asserting -- quite wrongly -- that the Phillips curve displayed elementary errors in economic analysis.

The Phillips curve -- a name that he himself never used -- was the product of Phillips' most famous paper. Bollard rightly observes that the paper has been misunderstood -- in part because of Phillips' own natural diffidence -- and that it should be seen against the background of control theory. Phillips depreciated his own efforts as "a wet weekend's work" (p. 165). Bollard -- mistakenly in my view -- piles on, saying that Phillips' "statistical approach was not sophisticated" (p. 166).

The issue of the relationship of inflation and unemployment was a long-standing one. Phillips' interest arose out of policy discussions in the late 1950s and out of the recent availability of his colleague Henry Phelps-Brown's new data set. The plot of inflation against unemployment rates was a hodge-podge without much apparent order, until Phillips decided to connect the dots -- that is, to treat it as a time series. This revealed a series of looping patterns in the data, corresponding to business cycles, which Phillips understood to be the typical result of the dynamic systems that he had studied theoretically. His principal concern was with the short-run behavior of the system. The paper is frequently regarded as an atheoretical data-mining exercise; but that misses the

point. Phillips thought about the economy as a system of differential equations, which could generate dynamic behavior around a longer-run equilibrium locus, which is what we usually identify as the Phillips curve. As Bollard notes, Phillips had actually drawn a theoretical version of the Phillips curve in his 1954 paper. In the famous 1958 paper, he implicitly used the conceptual framework of the 1954 paper to decompose the empirical relationship of wage-inflation and unemployment into a long-run locus and an associated short-run dynamics -- implicit, because the differential equations are never mentioned. Proceeding without a computer to estimate the nonlinear, long-term solution to a system of differential equations, Phillips employed characteristic cleverness and focused on results in his handling of the limited data. Far from being unsophisticated statistics, Phillips displayed the kind of statistical sophistication that combined deep theoretical and practical understanding to turn the crudest materials into practical knowledge -- the economic equivalent of the radios that he built and secreted away in the Japanese prisoner-of-war camps. It was a tour de force of data analysis. And it launched an industry -- propelled by economists who failed to understand the framework that informed Phillips' original paper. Despite the fame that it engendered, Phillips himself hardly pursued this line of research further.

Although his last published paper appeared in 1968, the Phillips curve article of ten years earlier was for all intents and purposes his last important paper. His interests turned to continuous-time econometrics, a natural extension of his focus on differential equations, and to development economics with a special interest in China. Phillips was by all accounts an exemplary teacher. He was an important figure in the conversion of the LSE from its quasi-Austrian and anti-quantitative mold under Lionel Robbins into a

powerhouse of econometrics in the 1960s and 1970s. Phillips helped to recruit Denis Sargan and Rex Bergstrom and to teach subsequent leaders in econometrics, such as David Hendry and Peter Phillips. Phillips' work on PID control systems is closely related to error-correction modeling and to cointegrated time-series modeling, areas in which Sargan and his LSE students played an important part.

In 1967, thirty-two years after coming to Britain, Phillips returned to the Antipodes -- precisely to the Australian National University. After suffering a stroke in 1970, he finally returned to New Zealand, and took up teaching again in 1973. In 1975, he suffered another, massive stroke and died at age 60. While his life was eventful, his career as an economist was short. Bollard has done a great service by presenting a fascinating account of the life and by reminding us of what Phillips' achievements as an economist actually were.

**Kevin D. Hoover** is Professor of Economics and Philosophy at Duke University and Editor of *History of Political Economy*. He has written extensively on the history of macroeconomics, including recently "The Genesis of Samuelson and Solow's Price-Inflation Phillips Curve," *History of Economics Review* 61(Winter 2015): 1-16.

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