THE AUSTRIAN THEORY OF VALUE AND CAPITAL: STUDIES IN THE LIFE AND WORK OF EUGEN VON BÖHM-BAWERK. KLAUS H. HENNINGS, ED. BROOKFIELD, VT.: EDWARD ELGAR, 1997

Modern economics is notorious for its inattention to capital in the sense of an intertemporal structure of intermediate goods. Production takes time, and the time that separates the formulation of multiperiod production plans and the satisfaction of consumer demands is bridged by capital. If mentioned at all, these aspects of economic reality are introduced as "the thorny issues of capital," a tell-tale phrase that portends a dismissive treatment of this critical subject area. Though a lacuna in mainstream economics, capital theory has long been a keystone in Austrian economics. With a full awareness of all the thorns, Eugen von Böhm-Bawerk (1851–1914) built his academic career around the goals of understanding the relationship between capital and interest, and extending value theory to the context of intertemporal allocation.

Klaus Hinrich Hennings (1937–1986) studied the life and work of Böhm-Bawerk in the early 1970s under the guidance of John R. Hicks. His Ph.D. thesis was ripe for publication, but Hennings's nonacademic endeavors deferred the realization of his plan. Before his untimely death, he excerpted and condensed portions of his manuscript for the Milgate et al., eds., *New Palgrave Dictionary of Economics* (1987). The entry on Böhm-Bawerk together with related entries (on capital as a factor of production, maintaining capital intact, roundabout methods of production, and waiting) provide a good summary of his thesis. Now, a quarter century after its writing and more than a decade after its author's death, Hennings's *Studies,* along with a preface by Heinz D. Kurz of the University of Graz, Austria, and twenty years of Böhm-Bawerk's correspondence with Swedish economist Knut Wicksell (forty letters), has jelled into a book.

Most illuminating is Hennings's chapter on "The Genesis of a Theory." Here we learn that Böhm-Bawerk had taken up a central question that was much discussed by his contemporaries and predecessors. "Is there any justification for the payment of interest to the owners of capital?" Hennings's earlier chapter on the continental tradition of classical economic thought puts both the question and the possible answers into sharp historical perspective. Böhm-Bawerk's "agio theory" and its implications for the alternative "exploitation theory" were enough to win him recognition by historians of economic thought. But, as Hennings persuasively argues, Böhm-Bawerk's theory broke new ground and was much more than the refutation of socialist doctrine.

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> Böhm-Bawerk's analysis culminates in a macroeconomic model of general equilibrium which is used to discuss not only the neoclassical problem of the existence and the determination of the rate of interest, but also the more classical problem of the effects of the accumulation of capital and the rate of technical progress. (p. 2)

Making use of the foundational value theory set out by Menger and taking an economy-wide perspective, Böhm-Bawerk linked the intertemporal preference structure of consumers with the intertemporal structure of production. His theory was a "full-fledged theory of intertemporal behavior in a market economy" (p. 65).

We have it, then, that Böhm-Bawerk was a macroeconomist—and a self-reflective one at that. The word "macroeconomics," of course, is a relatively modern one.[1] But in 1890, Böhm-Bawerk wrote in the *Annals of the American Academy of Political and Social Science* that "One cannot eschew studying the microcosm if one wants to understand properly the macrocosm of a developed economy" (p. 74). Packed into this understated methodological maxim is both his desire to understand the macroeconomy and his recognition that microeconomic foundations are essential for a viable macroeconomics—a view that, in the mainstream, dates only to the mid-1960s.[2]

Hennings is profoundly respectful of Böhm-Bawerk's work. He sees much good in it, and much scope for the development in the general direction staked out by Böhm-Bawerk's *Positive Theory.* But recognizing that his much-criticized and badly misunderstood period of production was a focal point of his analysis, Hennings (p. 129) opines that "Böhm's discussion is indeed often more confusing than enlightening, his use of terms inconsistent, and his examples badly chosen; worse still, a crucial step in his argument can be shown to be false." The falsity lies in the construction of an average period of production (p. 134ff) and in the assumption of a fixed subsistence fund (p. 140ff). The problems stem from the now well-established fact that neither the average period nor the size of the subsistence fund can be calculated in purely physical units. Both are dependent on input prices and hence on the interest rate. But allowing for endogenous and interest-rate-dependent measures introduces ambiguities that invalidate the simple conclusions drawn by Böhm-Bawerk. Though critical, Hennings

[1] It should be noted that the classical economists, especially Ricardo, could be considered macroeconomists in an era that predates any hint of the modern distinction. Most economists would suspect that the word itself first emerged from the pen of Paul Samuelson, but Samuelson denies it. He points a finger at Ragnar Frisch and Jan Tinbergen and dates the word's debut in print to Erik Lindahl in 1939. Paul A. Samuelson, "Credo of a Lucky Textbook Author," *Journal of Economic Perspectives* 11, no. 2 (Spring 1997): 157. It was Samuelson, however, who reorganized the subject matter of economics on the basis of a first-order distinction between microeconomics and macroeconomics.

[2] Hennings's frequent and explicit references to Böhm-Bawerk as a macroeconomist make for an intriguing comparison between this treatment of the Austrian theory of capital and interest and Israel Kirzner's *Essays on Capital and Interest* (Cheltenham, U.K.: Edward Elgar, 1997), which appeared almost simultaneously with Hennings's book. Kirzner eschews Austrian business cycle theory—and with it, presumably, the whole of macroeconomics—on the grounds that developments in this direction have not been adequately anchored to the subjectivism that has become so characteristic of modern Austrian economics. Rather than being seen as methodologically antithetical, however, these two volumes are more usefully seen as companion micro and macro perspectives on capital and interest.

differs from modern detractors of Austrian capital theory by his believing—with good reason—that the flaws are far from fatal. He does not see them as discrediting Böhm-Bawerk's general approach to the theory of production (p. 170); he calls not for a rejection of the theory but for amendments to it (p. 182).

Hennings (p. 131) reproduces Böhm-Bawerk's bull's-eye figure—a pattern of concentric rings intended to depict the time-structure of production. Production begins in the center with the use of the original means (land and labor); the process emanates outward over time; and the final product emerges at the outermost ring to satisfy the consumers' ultimate ends. Hennings ignores all subsequent developments along graphical lines (including Robert Dorfman's 1959 classic rendition of Austrian theory[3]). This idiosyncratic depiction can be seen as a forerunner of the more straightforward representation of the means-ends framework introduced by F.A. Hayek during the interwar period. The Hayekian triangle captures the essential linearity—not to deny that there are some non-linearities—in the structure of production. The triangle, which is divided along the time axis into "stages of production," corresponds closely with the bull's eye figure, which is divided along the radius into "maturity classes."

Though static by its very construction, the bull's-eye figure, as well as the better known Hayekian triangle, is intended to facilitate the analysis of change. What is the nature of the market forces that govern the allocation of resources among the various rings? Here, where Hennings is strongly influenced by Hicks's treatment of the "traverse" (the sequence of inputs and outputs that characterize the transition from one static state to another), Böhm-Bawerk's formal statement of his theory—and Hennings's even more formal statement—come in for the severest criticism. Hennings (p. 150) writes that

> Because [Böhm-Bawerk's approach] is macroeconomic in nature, it depends essentially on the way in which production is organized in different units. It breaks down when the way in which production is organized changes. As any dynamic process of change must necessarily alter the organization of production, Böhm's approach is ill-suited for a dynamic analysis of the production process of an economy. Precisely because it does not pay enough attention to entrepreneurial decisionmaking on a microeconomic level, it cannot study the process in which entrepreneurs, interacting with each other, change their production process such that the macroeconomic result is a change from one technique to another.

Yet, Böhm-Bawerk's informal analysis of the nature of the process of change, an analysis for which his approach was well suited, is not discussed by Hennings. In the case of the stationary state, the concentric rings have two interpretations: (1) the production process can be seen as proceeding over time from earliest input to final output, and (2) the areas of the rings can represent the amounts of the different kinds of capital (goods in process) that exist at a given point in time. As already suggested, depicting the stationary state was only a prelude for Böhm-Bawerk. He briefly

[3]Robert Dorfman, "A Graphical Exposition of Böhm-Bawerk's Interest Theory," *Review of Economic Studies* 26 (February 1959): 153–58. Dorfman's exposition reinforces the notion that Böhm-Bawerk was a macroeconomist.

considered the question: "What is the procedure if we wish just to preserve the amount of capital in its previous magnitude?" His answer, given in short order, is followed by the more important question: "What must be done if there is to be an increase in capital?" The answer to this question involves a change in the configuration of the concentric rings. Several types of changes are suggested, each entailing the idea that real saving is achieved at the expense of consumption and of capital in the outer rings and that the saving makes possible the expansion of capital in the inner rings. Böhm-Bawerk indicates that in a market economy it is the entrepreneurs who bring such structural changes about and that their efforts are guided by changes in the relative prices of capital goods in the various rings. Formal or informal, the message is clear: An increase in capital is not to be viewed as a simultaneous and equiproportional increase in capital in each of the maturity classes; it is to be viewed as a reallocation of capital among the maturity classes.[4]

It is easy for the modern Austrian economist to see that Böhm-Bawerk was just a step away from articulating the Austrian theory of the business cycle. This step, which was actually taken by Mises and Hayek, involved a comparison of changes in the configuration of the rings on the basis of whether those changes were preference-induced or money-induced. A change in intertemporal preferences in the direction of increased saving reallocates capital among the rings such that the economy experiences capital accumulation and sustainable growth; a money-induced change in credit conditions misallocates capital among the rings such that the economy experiences unsustainable growth and economic crisis.

Development of the theory in this direction was beyond Böhm-Bawerk for the simple reason that he would not allow himself to venture into monetary theory. His attitude toward this subject matter is revealed in the letters to Wicksell. In 1907, he wrote: "I have not myself given thought to or worked on the problem of money as a scholar, and therefore I am insecure *vis-à-vis* this subject." In 1912: "You know that I do not really feel competent as regards the extremely difficult theory of money." Also in 1912, referring to *The Theory of Money and Credit*, in which Mises first articulates the Austrian theory of the business cycle, Böhm-Bawerk mentions to Wicksell "a book on the theory of money by a young Viennese scholar, Dr. von Mises. Mises is a student of myself and Prof. Wieser, which, however, does not mean that I would want to take responsibility for all his views. I have just begun to read his book myself, and am not yet familiar with its content." And finally in 1913, a year before his death, "I have not yet included the theory of money in the subject-matter of my thinking, and I therefore hesitate to pass a judgment on the difficult questions it raises. . . . [A] judgment not based on serious study, that is to say, a dilettante's judgment, I do not want to put forward."

These instances of self-assessment and others contained in the letters to Wicksell give us some insight into Böhm-Bawerk's character. Hennings's early chapter on his

[4]Eugen von Böhm-Bawerk, *Capital and Interest*, George D. Huncke and Hans F. Sennholz, trans. (South Holland, Ill.: Libertarian Press, 1959), vol. 2, pp. 102–18. Bull's-eye figures for well-developed and less-well-developed economies appear on pp. 106 and 107; quoted questions are from p. 109.

life and times provides us with a feel for how he juggled his two careers—as public official and as academician. Still, the reader will feel that little has been uncovered about his private life—except that he was a very private person.[5] We do learn that Böhm-Bawerk was a "keen mountaineer" and a "gifted cellist," but the letters to Wicksell are more revealing. Although an Austrian gentleman who exhibited "immense politeness," Böhm-Bawerk did not pull any punches when evaluating his contemporaries. Of Otto Conrad, a Viennese secretary at the chamber of commerce, Böhm-Bawerk wrote in a letter of 1913 that "He is a kind of autodidact, who has not gone through a competent school, and despite some abilities which he possesses, he has remained half a dilettante. Confused and unclear." Of Robert Liefmann, a professor at a German University, Böhm-Bawerk wrote (in the same letter) that he "is, however, worse. . . . One of the most unpleasant mixtures of boundless arrogance, total confusion, and complete lack of conscientious care." Even the young Schumpeter fell victim to Böhm-Bawerk's acid pen in another letter of 1913: "It will be agreeable to read again a serious, meticulous, and carefully considered theoretical work [Wicksell's *Lectures*]; so different from the clever but insubstantial fantasies of Schumpeter or even the products of Liefmann." (One has to wonder what such a private person as Böhm-Bawerk would think about the publication of these letters.)

As substantial an economist as Schumpeter could claim that interest is a disequilibrium phenomenon and fantasize about a long-run equilibrium where market forces have pushed the interest rate to zero. John Maynard Keynes imagined interest to be a purely monetary phenomenon. Creating what Hayek called a "mythology of capital," Frank Knight held that production and consumption occur simultaneously, that the period of production is irrelevant, and that the interest rate is wholly determined by technological considerations. F.A. Hayek found it necessary to repeat with Knight the debate that had earlier taken place between Böhm-Bawerk and John B. Clark. These and other twists and turns in twentieth-century views of capital and interest give increased significance to the early wisdom of Böhm-Bawerk—and give timeless value to the critical assessment of the Austrian theory offered by Klaus Hennings.

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[5]Even the most cursory textbook treatments of the Austrian economists manage to report the fact that Böhm-Bawerk and Wieser were brothers-in-law. But who married whose sister? From Hennings, we learn that Böhm-Bawerk married Wieser's younger sister Paula in 1890, and that she survived her husband by fourteen years.

ERRATUM

The Quarterly Journal of Austrian Economics 1, no. 1 (Spring 1998): 38, footnote 16, should have read, in part: "in terms of the equation of exchange, we can say that free banking adjusts M so as to offset changes in V: but allows changes in Q to be accommodated by changes in P."

The editors regret this error.