

Capital in the Nineteenth Century. By Robert E. Gallman and Paul W. Rhode. Chicago: University of Chicago Press, 2019. xvi + 381 pp. Illustrations, tables, notes, references, index. Cloth, \$65.00. ISBN: 978-0-226-63311-4.

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Reviewed by Bob Kaminski

The capital-stock and annual product series that form the heart of Robert Gallman and Paul Rhode's *Capital in the Nineteenth Century* should already be familiar to business and economic historians. They do not contain new estimates. Gallman developed them to shed light on American economic growth across a series of classic papers published from the 1960s to shortly after his death in 1998. Even the annual product series, which Gallman only circulated privately with cautions against its misuse, has already appeared in the *Historical Statistics of the United States*. Nevertheless, there is more value added in this book than gathering Gallman's seminal work into one easily accessible volume—itself a worthy task. It offers business historians a major new reference work containing food for methodological thought, while also offering an introduction to the history of quantitative economic history—a congenial macroeconomic companion to the controversies surrounding Robert Fogel and Stanley Engerman's works on slavery.

Gallman's project applied the national income accounting pioneered by his mentor, Simon Kuznets, to nineteenth-century America, turning primarily to physical capital-stock estimates as a proxy for and determinant of economic growth. This decision reflected capital-stock data's comparative availability and its relative insensitivity to business cycles. It also reflected Gallman's contribution to ongoing debates about capital accumulation's place in economic growth. His annual production series "completely undermined any picture of a constant rate of capital formation" given by Nicholas Kaldor's famous "stylized facts" about balanced growth paths for nineteenth-century America (p. 124). Yet, Rhode notes, Gallman was no more a devotee of Walt Rostow's influential model placing significant savings-rate expansions as a precondition for "takeoff" into modern economic growth. Rather, Gallman's now familiar findings showed America's economy growing steadily in output and capital intensity over the long nineteenth century. Yet this was no simple story of industrialization. Under Gallman's definition of capital, "manufacturing was less capital-intensive than agriculture, so that the rising. . . manufacturing sector. . . actually lowered the capital-to-output ratio of the overall economy" (p. 13). Moreover, the capital stock embodied in structures in 1900 remained three to four times larger than that in equipment, exemplifying the mundane capital

deepening that Gallman found beginning earlier than conventional capital-stock measures could capture and combining with productivity increases to begin modern economic growth by the antebellum period.

Rhode's introductory essays summarize Gallman's project, methodology, and major findings, situate them within the larger thrust of economic history scholarship, and suggest their relevance to recent economic debates. Subsequent chapters by both authors concisely detail Gallman's core capital-stock model (chapter 3), extend it back to the Revolutionary Era (chapter 4), introduce Gallman's annual product model (chapter 5), and test Gallman's census-style capital-stock series against estimates generated using perpetual-inventory methods (chapter 6). Of these, Rhode's discussion in chapter 5 of Gallman's annual product series should merit the most attention. Thereafter, the volume includes chapters detailing Gallman's capital-stock estimates for agriculture (chapter 7), mining and manufacturing (chapter 8), nonfarm real estate (chapter 9), transportation (chapter 10), communication and electric utilities (chapter 11), inventories (chapter 12), consumer durables (chapter 13), and the colonial and early national periods (chapter 14), before Rhode offers some concluding thoughts (chapter 15). These should be required reading for specialists in relevant fields with information on Gallman's sources and methods, references to earlier papers, and Gallman's retrospective reflections on his industry-specific series. They also contain insights for nonspecialists, such as chapter 13's treatment of the nineteenth-century adoption of cast-iron stoves as an early consumer-durable revolution.

Gallman and Rhode's discussion of the former's meticulous attention to definitions and classification provides lessons but also provokes questions. As Gallman noted, "The concept of capital is elastic" and its definition must accord with both the available data and a scholar's research concerns (p. 71). The discussions parsing book value, reproduction cost, and market price across various manufacturing-census schedules in chapter 3 and relevant industry-specific chapters should serve as a valuable companion to scholars interpreting manufacturing census data. Gallman's work also highlighted the importance of carefully tailoring definitions of variables to reflect the question at hand. His preferred capital-stock estimates departed from existing series by Kuznets and Raymond Goldsmith (which excluded agricultural improvements beyond structures) to include the "reproduction cost of clearing and breaking farmland, fencing it, and draining and irrigating it" (p. 44). These inclusive estimates reflected the nineteenth-century American economy's agricultural orientation and underlay Gallman's major findings.

At the same time, Gallman's exclusion of land and human capital from this definition merits discussion, especially considering recent

scholarship on slavery and capitalism, human capital, and environmental history. Gallman and Rhode briefly note when analyzing “the savings and investment behavior of planters” that slaves constituted capital, but unjustly capitalized labor remained labor when “concerned with the measurement of long-term economic growth” via physical capital deepening (p. 339). Growing human capital is a potentially thornier problem—at the least, a confounding variable in the relationship between capital and output levels. The omission of land values, however, prompts the greatest concern. Gallman’s decision here is understandable: unimproved land values neither result from human investment nor reflect economic growth. Nevertheless, “bad farming practices may erode the fertility of the land.” Though Gallman is right that the resulting losses “have to do mainly with the value of land, rather than with the value of improvements,” they nonetheless represent a dissaving from society’s available means of production—one that required compensating investments in fertilizer and crop innovations like those Rhode has highlighted with Alan Olmstead (pp. 75–76).

Regardless, Gallman’s capital-stock estimates should remain an invaluable reference for business historians—with or without a quantitative bent—seeking to place their analyses in macroeconomic or industry-level context. This volume should prompt further reflection on the significance of seemingly quotidian investments in land breaking, agricultural improvements, and residential structures’ large share of nineteenth-century America’s capital stock. These investments provided the opportunity to develop “sweat equity,” especially during slack seasons—a potentially fruitful but underused concept for scholars of small business as well as those of inequality, as Rhode highlights through the allusion in the book’s title to Thomas Piketty’s *Capital in the Twenty-First Century* (2013).

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The Underground Wealth of Nations: On the Capitalist Origins of Silver Mining, A.D. 1150–1450. *By Jeannette Graulau.* New Haven: Yale University Press, 2019. xvi + 373 pp. Illustrations, tables, appendixes, notes, bibliography, index. Hardcover, \$85.00. ISBN: 978-0-300-21822-0.

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Reviewed by Karin A. Amundsen

Economic historians have long recognized Europe’s early modern bullion crisis as the origin of capitalist mining corporations to supply