

Retrospectives

On the Definition of Economics

Roger E. Backhouse and Steven G. Medema

This feature addresses the history of economic terms and ideas. The hope is to deepen the workaday dialogue of economists, while perhaps also casting new light on ongoing questions. If you have suggestions for future topics or authors, please contact Joseph Persky, Professor of Economics, University of Illinois, Chicago, at <jpersky@uic.edu>.

Introduction

Economists are far from unanimous about the definition of their subject. Here are some definitions of economics from contemporary principles of economics textbooks:

Economics is the study of economies, at both the level of individuals and of society as a whole (Krugman and Wells, 2004, p. 2).

Economics is the study of how human beings coordinate their wants and desires, given the decision-making mechanisms, social customs, and political realities of the society (Colander, 2006a, p. 4).

■ *Roger E. Backhouse is Professor of the History and Philosophy of Economics, University of Birmingham, Edgbaston, Birmingham, United Kingdom. Steven G. Medema, is Professor of Economics, University of Colorado Denver, Denver, Colorado. Their e-mail addresses are <r.e.backhouse@bham.ac.uk> and <steven.medema@ucdenver.edu>.*

Economics is the study of how society manages its scarce resources (Mankiw, 2001, p. 4).

[Economics is the] social science that studies the choices that individuals, businesses, governments, and entire societies make as they cope with scarcity (Bade and Parkin, 2002, p. 5).

[E]conomics is the study of human behavior, with a particular focus on human decision making (Gwartney, Stroup, Sobel, and MacPherson 2006, p. 5).

Thus, economics is apparently the study of the economy, the study of the coordination process, the study of the effects of scarcity, the science of choice, and the study of human behavior.

One possible conclusion to draw from this lack of agreement is that the definition of economics does not really matter. After all, the textbooks including these definitions are all fairly mainstream and quite similar in many ways. Perhaps the definition of economics is best viewed as a tool for the first day of principles classes but otherwise of little concern to practicing economists. Another possible conclusion is that the subject of economics is too broad to be usefully pinned down in a short definition. Richard Lipsey, for example, refused to define the subject in his widely used textbook, *An Introduction to Positive Economics* (1963), but instead gave a series of examples of economic problems, thereby suggesting a broader discipline than could be encompassed in any singular definition. Jacob Viner reflected this spirit in his oft-quoted statement: "Economics is what economists do." (We have been unable to find this statement in Viner's publications, but a remark by Kenneth Boulding (1941, p. 1), a student of Viner's in 1932–3, suggests that it arose in conversation.)

We sympathize with Viner's quip. Economics is potentially very broad; indeed, it has become increasingly broad over the past 200 years. Attempts to pin down the subject in a few words are thus almost certainly doomed to failure. Viner suggests that actions are more important than definitions. However, we also believe that definitions of economics *are* important. Definitions of economics have often helped to convey what economists see as legitimate problems for economic analysis, as well as the methods of analysis, approach, and techniques they consider appropriate for doing economics. As these have evolved over time, it is not surprising that the definition of economics has also changed.

Early Definitions: National Wealth and Human Behavior

For the classical economists, political economy was about national wealth and economic growth. The Greek writer Xenophon had invented the term "economics"

in the fourth century BCE, using it to refer to the art of household management, a meaning of the word “economy” that is still active today. Adding the word “political” reflected a sense that this problem could be extended to the level of nations. Some two millennia later, Adam Smith described political economy as “a branch of the science of a statesman or legislator,” and his *Inquiry into the Nature and Causes of the Wealth of Nations* (1776 [1976], p. 428) explained the relative fortunes of different countries, as well as the policies that might “enrich both the people and the sovereign.”

In the early nineteenth century, this wealth-based definition was sharpened in several ways. As Britain’s industrial revolution unfolded and the outlines of industrial capitalism began to emerge, economics began to reach beyond the issue of increasing wealth, with the more broad-based emphasis being captured in Jean-Baptiste Say’s (1803) definition of political economy as the “science” that treats “the production, distribution, and consumption of wealth.” The study of political economy that emerged in the early decades of the nineteenth century was philosophically narrower in scope than found in the analysis of Smith, who after all was once a professor of “moral philosophy” (Fontaine, 1996; Winch, 1996; Rothschild, 2001). Where Adam Smith’s work was only one facet of a larger system of moral philosophy and so cannot be understood apart from his concern with morality and with society as a whole, the generation of Say and David Ricardo (1817) saw themselves as creating a new and separate science of political economy.

Although political economy continued to be defined by its subject matter throughout the classical period (O’Brien, 2004), the definitions given began to hint at a methodological approach. For example, John Stuart Mill (1844 [1967], p. 323) defined political economy in this way: “The science which traces the laws of such of the phenomena of society as arise from the combined operations of mankind for the production of wealth, in so far as those phenomena are not modified by the pursuit of any other object.” Here, Mill defined the subject as dealing with the results of certain motives, thereby linking it to the methods that were appropriate for it, and categorizing other motivations as outside of political economy. But his definitions of these motives were tied to a specific subject matter—wealth. In Mill’s view, the accumulation of wealth depended on certain laws that were known to be true, like the law of diminishing returns and the “population principle”—that population would multiply faster than food supply. Even though these laws were known to be true, they were to be regarded as only statements of tendencies, for what Mill (1844 [1967], p. 330) called “disturbing causes” might interfere with their operation. The Millian method of political economy centered on logical deduction from these known premises, although historical investigation was needed to establish the applicability of any laws so discovered.

But the discussion of wealth did not always take place at the national level: some nineteenth-century definitions began to bring in the individualistic element. For example, if wealth was made up of exchangeable value, then perhaps exchange, not wealth, is the fundamental phenomenon. This insight implied that political

economy was concerned with the interaction of individuals within a larger social context. Richard Whately (1832) went so far as to propose renaming the subject “catallactics”—the science of exchanges. Wealth-based definitions of the subject continued to dominate, but the idea of catallactics did not disappear: in the modern era, Ludwig von Mises (1949, p. 3), F. A. Hayek (1976, pp. 108–109), and James Buchanan (1964, p. 217) have argued the case for a definition grounded in catallactics.

The individualistic element came even more to the fore towards the later part of the nineteenth century, when political economy saw the rise of definitions of economics focusing more on human behavior than on the concept of wealth accumulation. Carl Menger (1871 [1976], p. 48) said that economics is “related to the practical activities of economizing men.” While Menger eschewed references to the motivation for economizing, for some economists, such as William Stanley Jevons and Alfred Marshall, this change of definitional focus was influenced by their view that psychology was needed to understand economic phenomena. In economic theory, the change was marked by explanation in terms of utility—both as a description of how choices are made and as a welfare criterion. This perspective is reflected in Jevons’s (1871 [1965], p. vi) depiction of economics as “a calculus of pleasure and pain.” This focus on utility, whether as a welfare judgment or framework for thinking about choices, suggested a move toward individualism and away from the emphasis on wealth that had dominated classical thinking. Indeed, even those, such as Henry Sidgwick (1901), who held to the older wealth-based definition of the subject, often used utility-related concepts of well-being rather than material wealth in its traditional sense.

These changes are the background to the definition of economics made famous by Alfred Marshall. In what became the dominant treatment of the subject, his *Principles of Economics*, Marshall (1890 [1920], 1.1.1–2) wrote:

Political Economy or Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing. . . . Thus it is on the one side a study of wealth; and on the other, and more important side, a part of the study of man.

This definition was a significant shift, for Marshall was claiming that economics was primarily a “study of man.” Not only did Marshall study individuals’ actions, but he also attached importance to the way human character evolved in response to the environments people faced and the choices they made, considerations generally absent from modern economics (Raffaelli, 2006). The individualistic element was even more clearly at the center of the approach of the Austrians and others influenced by them, such as Knut Wicksell (1901 [1934]) and Philip Wicksteed (1910), who believed that economics was about economizing—the elimination of waste in the administration of resources.

Marshall's definition also marks a time when the word "economics" was displacing "political economy" as the favored name for the subject. Knut Wicksell (1901 [1934], pp. 1–2) argued that, as decisions are taken by individuals (there being no such thing as the national household), the term "*political economy*" was not appropriate—although Wicksell apparently did not use the new term "economics," either. Wicksteed (1910, p. 17), too, felt that "political" no longer fit the practice of economists, who were examining "the general principles of administration of resources, whether of an individual, a household, a business, or a State." For Alfred Marshall, the main supporter of the term "economics," this renaming of the subject was part of establishing economics as a professional, scientific field, which meant distancing it from direct political involvement and an ideological commitment to *laissez-faire* that had become associated in the minds of some with the term "political economy."

The Robbins Definition: Scarcity

Perhaps the most common currently accepted definition of economics stems from Lionel Robbins's *Essay on the Nature and Significance of Economic Science* (1932 [1935]), where Robbins (p. 15 [p. 16]) defined economics as "the science which studies human behavior as a relationship between ends and scarce means which have alternative uses." Robbins claimed that his definition did no more than sum up the way economists thought about and practiced their discipline, but actually his definition was very much a minority view at the time. Of the various textbooks offering definitions of the subject in the first three decades of the century, only Fetter (1915) and Fairchild, Furniss, and Buck (1926)—the latter of whom identified "the insatiability of man and the niggardliness of nature" (p. 8) as the foundation of economics—came close to the definition offered by Robbins.

The Robbins definition of economics was criticized both for being too broad and for being too narrow. It was considered too broad in that it failed to divide economics sufficiently from other social sciences. But it was also said to be overly narrow in that it was too heavily tilted toward theory and left little, if any, room for empirical analysis, history, and institutions—and it essentially wrote ethics out of economics.

The textbooks of the 1920s and 1930s confirm that economists were reluctant to accept the Robbins definition (Backhouse and Medema, forthcoming). In England, Marshall's definition remained as dominant as his text. In the United States, one could find leading texts arguing that economics was about "the wealth-getting and wealth-using activities of Man" (Ely, Adams, Lorenz, and Young, 1926) and that no definition was required (Taussig, 1927). This time period was the heyday of Institutionalism, a broad movement emphasizing empirical work and skeptical of abstract theories about maximizing individuals. A typical institutionalist definition of economics is found in a textbook by the Harvard labor economist

Sumner Slichter (1931, p. 11): “The subject matter of economics is industry, the process by which men get a living . . . economics studies industry, not as a technological process, but as a complex of human practices and relationships.” This definition, clearly influenced by Thorstein Veblen, covered Slichter’s own work on labor, as well as John R. Commons’s analysis of legal history; Wesley Clair Mitchell’s quantitative work on wealth, income distribution, and the cycle at the National Bureau of Economic Research; and Gardner Means’s analysis of the corporation and what he called administered pricing. Slichter’s definition has some echoes of Alfred Marshall’s, but the emphasis on the social organization of industry implies a somewhat different perspective.

If the Institutionalists were an example of those who saw the Robbins definition as too narrow, other textbooks saw it as too broad. Frank Knight’s (1933) *The Economic Organization*, which along with Marshall’s *Principles* was the foundation of Chicago price theory from the 1920s, said (p. 4) that economics “deals with the social organization of economic activity” via the price system or under free enterprise. Knight considered the definitions given by Marshall and Robbins too broad, and even “useless and misleading,” arguing that economizing behavior has a fairly narrow scope in the larger spectrum of human action. Indeed, Knight thought in the 1920s (!) that economists tended to apply the concept of rationality to far too broad a range of activities.

Robbins’s (1932) definition reflected the focus on analyzing individual behavior that had accompanied the development of marginalist microeconomic analysis. Yet, while scarcity definitions made their occasional appearance in new textbooks published after Robbins’s *Essay*, definitions emphasizing wealth and exchange remained dominant, and books employing these older definitions did not move toward the scarcity definition when they were revised.

The professional journal literature in economics in the post–World War II years offered at least four definitions of economics, all drawing on themes mentioned earlier: 1) the Vineresque “economics is what economics does”; 2) a Robbins-style definition based on scarcity; 3) a definition in terms of wealth (which was seen as consistent with a belief in the centrality of scarcity); and 4) a definition of economics as concerned with the subject of rationality (Parsons, 1937, pp. 757–75; Spengler, 1948, pp. 2–3). By 1960, one could still find references critical of the Robbins definition in the journal literature, but most of these were by economists who questioned the direction in which economics was moving. Within the mainstream, Harry Johnson (1960, p. 552) allowed that most economists “would probably accept” the Robbins definition, “at least as a description of their workaday activities.”

The gradual movement toward broader acceptance of the Robbins definition after World War II reflects an economics that was becoming narrower and more technical. During the war, many economists had worked alongside scientists and engineers, solving urgent practical problems (including logistics and military tactics and strategy). The Cold War continued this process, with much work on game theory and operations research being sponsored by the U.S. Navy and the Air Force, the latter often being

linked to RAND. In the early 1950s, the only unambiguous endorsements of the Robbins definition in the journal literature were by members of the Cowles Commission, the center of work on general equilibrium modeling. But by the end of the 1960s, when mathematical methods—including the axiomatic approach—were much more pervasive, this definition had become widely accepted.

By the late 1960s and into the 1970s, the textbook literature had shifted toward Robbins-style scarcity-based definitions, too. In the first edition of his *Economics*, Paul Samuelson (1948) did not offer a definition of the subject. His statement that economics deals with questions of “What?” “How?” and “For Whom?” resonated equally with scarcity definitions and definitions emphasizing the production and distribution of wealth. That Samuelson’s focus was on the social level rather than on individual behavior (individual choice at the level of the consumer and the firm gets 90 pages near the end of this 600-page edition from 1948) is not surprising, given the still all-too-fresh memories of the Great Depression and the war-time emphasis on administering the national economy. Some two decades later, Campbell McConnell’s (1960, p. 23) text, like Samuelson’s, still defined economics as a subject very much focused on choice at the social level: “Recalling that wants are unlimited and resources are scarce, economics can be defined as *the social science concerned with the problem of using or administering scarce resources (the means of producing) so as to attain the greatest or maximum fulfillment of our unlimited wants (the goal of producing).*” By Samuelson’s tenth edition in 1976, however, he was offering an expansive definition of the subject based upon his original three questions, and dealing explicitly with both individual and social choices (Samuelson and Temin, 1976, p. 3): “Economics is the study of how people and society end up choosing, with or without the use of money, to employ scarce productive resources that could have alternative uses, to produce various commodities and distribute them for consumption, now or in the future, among various persons and groups in society. It analyzes the costs and benefits of improving patterns of resource allocation.”

The Evolving Relationship between Scarcity and Choice

The Robbins definition of economics may seem straightforward, but it has been interpreted in different ways. For example, consider the relationship between scarcity and choice. The idea that scarcity implies choice, which in turn takes place through a process of rational maximization, is common currency in contemporary economics. Even critics of rationality often advocate bounded rationality rather than rejecting the idea of rationality altogether. But these links were not always so overt. There can be no question that the Robbins definition put scarcity at center stage, and that scarcity, in turn, creates a resource allocation and distribution problem. However, the fact that scarcity makes choice necessary does not imply either that economics need focus on the process of individual choice, nor that such choice need be rational. Positive prices are the result of scarcity, and from this

comes the analysis of markets and other allocation mechanisms. Growth and development are about overcoming the problem of scarcity, and even Keynesian macroeconomics can be seen as about avoiding the waste of scarce resources. But all of this analysis at both the micro and macro levels can be—and has been—done with or without rational-choice underpinnings.

The scarcity definition of economics thus left space for economists to see the subject in different ways. Milton Friedman adopted a scarcity-based definition of economics in his famous Chicago price theory lectures as early as the mid-1940s, calling economics “the science of how a particular society solves its economic problems,” where “An economic problem exists whenever *scarce* means are used to satisfy *alternative ends*” (Friedman, 1962, p. 6; see also Johnson, 1947 [2008]). This definition contains no mention of rationality or of maximizing behavior; indeed, Friedman did not find it necessary to ground his analysis of demand in any theory of human behavior (Mirowski and Hands, 1998). Friedman’s (1953) methodological view was that economics is simply about observed behavior, irrespective of what causes that behavior. In this argument, utility maximization is no more than a hypothesis for predicting behavior.

The move toward a greater emphasis on the choice process began in the 1940s, though it really did not pick up steam until the 1950s and 1960s. George Stigler (1942, p. 12, emphasis added) took matters a step further than Friedman when he wedded maximization to scarcity, defining economics as “the study of the principles governing the allocation of scarce resources among competing ends when the objective of the allocation is to *maximize* the attainment of the ends.” The notion of economics as a study of maximization under constraints was also at the center of Paul Samuelson’s (1947) *Foundations of Economic Analysis*, though Samuelson did not provide a definition of the subject there.

In contrast, Kenneth Arrow (1951, 1959), and others who favored an axiomatic approach to economic theory, focused on rational action, which they explicitly distanced from utility maximization subject to a budget constraint and the various limitations that it posed as a theory of choice. Rationality is a more encompassing notion than maximization—for example, it also extends to the analysis of situations facing principals and agents. Game theory makes strong demands on rationality, as does the concept of rational expectations. Rational preferences in this view were not assumed to be self-interested—though they could be—but simply complete and transitive (Giocoli, 2003; see also Arrow’s comments in Amadae, 2003, p. 230). The larger point to be taken here, though, is that this approach reflected an emphasis on choice and the psychology of choice as the centerpiece of economic analysis. Use of the term “rational choice” was also especially significant in the 1950s and 1960s for its normative implications in a world where capitalist democracy had to be defended against Soviet collectivism: it showed that, like planning, efficient markets too could be grounded in rationality (Amadae, 2003). This focus on rationality also served to demarcate economics from sociology (see Samuelson 1947, p. 90, echoing the view of the Harvard sociologist Talcott Parsons).

By the 1970s, maximizing behavior and rationality were sometimes being explicitly combined. As Gary Becker (1976, p. 5) famously described it, “The combined assumptions of maximizing behavior, market equilibrium, and stable preferences, used relentlessly and unflinchingly, form the heart of the economic approach as I see it.” This definition of economics, of course, is a far more narrowly and specifically drawn definition than one seen in Robbins, while at the same time being completely consistent with Robbins. It makes economics an approach rather than a subject matter, and it is extremely specific about the nature of the individual choice process and the type of social interaction that economic analysis involves. It also facilitated an expansion of the scope of economic analysis.

The Expanding Boundaries of Economics

When Robbins (1932, p. 15) defined economics as “the science which studies human behavior as a relationship between ends and scarce means which have alternative uses,” he noted immediately the rather radical implications for the scope of the science, insisting that as long as there are opportunity costs imposed by scarcity, there are “no limitations on the subject-matter of Economic Science” (p. 16). But Robbins did not pursue the implications of this statement. This led Gary Becker, in some unpublished remarks at the session marking the 75th anniversary of the publication of Robbins’s *Essay* at the ASSA (Allied Social Science Associations) meetings in Chicago, during January 2007, to suggest that Robbins perhaps did not really believe his own definition. Of course, by this measure, neither did anyone else, in that prior to the 1960s almost no economists would have applied economic techniques across the full spectrum of human life and decision making.

The expansion of the boundaries of economics was bound up in the shift from scarcity to choice—when economists began to think of economics as the analysis of individual or collective decision making. Some of the early moves toward expanding the boundaries of economics—for example, Becker’s (1957) work on discrimination and Jacob Mincer’s (1958, 1962) work on human capital acquisition—were not far from economists’ traditional concerns. However, this literature took a different approach from previous work by treating phenomena as components or as outcomes of an individual choice process. Similarly, the distinctive feature of the work on political processes by James Buchanan and Gordon Tullock (1962), Anthony Downs (1957), William Riker (1962), and others was the use of a choice-theoretic framework. It was not until well into the 1960s that economists moved decidedly outside the subject’s traditional boundaries, with work such as Becker’s (1968) analysis of crime and punishment. Against a legal tradition that saw criminals as unreasonable violators of society’s reasonable norms and conventions, Becker assumed that criminals were making rational career choices based on consistent and stable preferences, in light of their opportunity sets or constraints. While the boundaries were expanding, however, the approach to “doing econom-

ics,” ironically, was narrowing. The move to economics as the analysis of choice had the effect of pushing to the side questions of philosophy and ethics, history and institutions, broader conceptions of rationality, and various nonmathematical approaches to the subject.

Given Gary Becker’s role in pushing outward the boundaries of economics, one might expect that he would have had strong views about a broad definition of the subject. However, in his 1971 graduate textbook, Becker (p. 1) defined economics with a straightforward extension of the Robbins definition to a choice-theoretic framework: “the study of the allocation of scarce means to satisfy competing ends.” In 1976, though, Becker (1976, p. 4) felt compelled to point out that most economists find the generality of this definition embarrassing and qualify it “to exclude most nonmarket behavior.” What distinguished Becker and others tilling these soils (many of them Becker’s students) is that they did not exclude nonmarket behavior from their own work.

While some variant of the Robbins definition might seem to go hand-in-glove with broadening the field of economics, not everyone associated with the expansion of the boundaries of economics has been favorably disposed toward the Robbins definition. For example, both James Buchanan and Ronald Coase have expressed opposition to a general extension of economics to all areas in which choices are made. Buchanan (1964)—who was a student of and greatly influenced by Frank Knight—preferred to define economics as “the study of the whole system of exchange relationships” (p. 220), even suggesting that the Robbins definition “served to retard . . . scientific progress” (p. 214). Coase (1977, p. 487) suggested that economics involves the study of “the social institutions that bind together the economic system,” in which he included firms, input and output markets, and the banking system, and he predicted a dim future for the application of rational choice theory across the social sciences (Medema, 1994). For both Buchanan and Coase, then, economics is defined by its subject matter rather than its approach.

Much of this expansion of the scope of economics has been based on a unifying concept that individuals choose rationally in all aspects of their lives: not just in making occupational and consumption choices (legal or illegal), but also in the voting booth, in marriage, and in the rearing of children. Recent work in behavioral economics and experimental economics pushes the boundaries of economics in a different direction: instead of basing explanations on a hypothesis of rational choice, it has often questioned whether choices are rational or consistent. For example, a broad range of work shows that people’s choices over an objective set of outcomes will vary depending on how those choices are framed. This work often verges into what has been traditionally viewed as psychology (how people actually make choices) or sociology (how choices are influenced by social settings). This kind of work has not yet resulted in the sort of reformulation of the foundations of economic analysis that could lead to displacing the Robbins definition of economics, but it may have the potential to do so.

Conclusion

Modern economists do not subscribe to a homogeneous definition of their subject. At a time when economists are tackling subjects as diverse as growth, auctions, crime, and religion with a methodological toolkit that includes real analysis, econometrics, laboratory experiments, and historical case studies, and when they are debating the explanatory roles of rationality and behavioral norms, any concise definition of economics is likely to be inadequate.

This lack of agreement on a definition does not necessarily pose a problem for the subject. Economists are generally guided by pragmatic considerations of what works or by methodological views emanating from various sources, not by formal definitions: to repeat the comment attributed to Jacob Viner, economics is what economists do. However, the way the definition of economics has evolved is more than a historical curiosity. At times, definitions are used to justify what economists are doing. Becker's definition clearly reflects his approach to economic analysis, and the principles texts from which we quoted in our introduction reflect their authors' perspectives on current work in the subject—even if the actual contents of these texts varies little across authors (Colander, 2006b).

However, definitions can also reflect the direction in which their authors want to see the subject move and can even influence practice. Robbins (1935, p. xv, italics added) claimed that his essay was based on “the actual practice of the *best* modern works” on economics. This is a statement with which the Marshallians and the Institutionalists, the dominant forces in the profession at the time, would not have agreed. In other words, Robbins's definition reflected the way he believed economics *should* be done. James Buchanan (1964, p. 214), for one, believed that the Robbins definition *did* influence the practice of economics rather than simply summing it up: “Only since *The Nature and Significance of Economic Science*,” he said, “have economists so exclusively devoted their energies to the problems raised by scarcity, broadly considered, and to the necessity for the making of allocative decisions.” Whether or not economists are conscious of it happening, adhering to a specific definition may constrain the problems that economists believe it is legitimate to tackle and the methods by which they choose to tackle them.

References

- Amadae, Sonja.** 2003. *Rationalizing Capitalist Democracy*. Chicago: University of Chicago Press.
- Arrow, Kenneth J.** 1951. *Social Choice and Individual Values*. New York: Wiley.
- Arrow, Kenneth J.** 1959. "Rational Choice Functions and Orderings." *Economica*, n.s. 26(102): 121–27.
- Backhouse, Roger E., and Steven G. Medema.** Forthcoming. "Defining Economics: Robbins's Essay in Theory and Practice." *Economica*.
- Bade, Robin, and Michael Parkin.** 2002. *Foundations of Microeconomics*. Boston: Addison Wesley.
- Becker, Gary S.** 1957. *The Economics of Discrimination*. Chicago: University of Chicago Press.
- Becker, Gary S.** 1968. "Crime and Punishment: An Economic Approach." *Journal of Political Economy*, 76(2): 169–217.
- Becker, Gary S.** 1971. *Economic Theory*. New York: Knopf.
- Becker, Gary S.** 1976. "The Economic Approach to Human Behavior." In *The Economic Approach to Human Behavior*, 3–14. Chicago: University of Chicago Press.
- Boulding, Kenneth E.** 1941. *Economic Analysis*. New York: Harper.
- Buchanan, James M.** 1964. "What Should Economists Do?" *Southern Economic Journal*, 30(3): 213–22.
- Buchanan, James M., and Gordon Tullock.** 1962. *The Calculus of Consent*. Ann Arbor: University of Michigan Press.
- Coase, Ronald H.** 1977. "Economics and Contiguous Disciplines." In *The Organization and Retrieval of Economic Knowledge*, ed. M. Perlman, 481–91. Boulder, CO: Westview Press.
- Colander, David C.** 2006a. *Economics*. 6th ed. Boston: McGraw-Hill Irwin.
- Colander, David C.** 2006b. *The Stories Economists Tell: Essays on the Art of Teaching Economics*. New York: McGraw-Hill.
- Downs, Anthony.** 1957. *An Economic Theory of Democracy*. New York: HarperCollins.
- Ely, Richard T., Thomas S. Adams, Max O. Lorenz, and Allyn A. Young.** 1926. *Outlines of Economics*. 4th ed. New York: Macmillan.
- Fairchild, Fred Rogers, Edgar Stevenson Furniss, and Norman Sydney Buck.** 1926. *Elementary Economics*. New York: Macmillan.
- Fetter, Frank A.** 1915. *Economic Principles*. New York: The Century Co.
- Fontaine, Philippe.** 1996. "The French Economists and Politics, 1750–1850: The Science and Art of Political Economy." *Canadian Journal of Economics*, 29(2): 279–93.
- Friedman, Milton.** 1953. "The Methodology of Positive Economics." In *Essays in Positive Economics*, ed. M. Friedman. Chicago: Chicago University Press.
- Friedman, Milton.** 1962. *Price Theory: A Provisional Text*. Chicago: Aldine.
- Giocoli, Nicola.** 2003. *Modeling Rational Agents*. Aldershot: Edward Elgar.
- Gwartney, James D., Richard L. Stroup, Russell S. Sobel, and David A. MacPherson.** 2006. *Microeconomics: Private and Public Choice*. 11th edition. Mason, OH: Thomson.
- Hayek, Friedrich A.** 1976. *Law, Legislation and Liberty*. Vol. 2: *The Mirage of Social Justice*. Chicago: University of Chicago Press.
- Jevons, William Stanley.** 1871 [1965]. *The Theory of Political Economy*. 5th ed. London: Macmillan.
- Johnson, Glenn.** 1947 [2008] "Notes from Milton Friedman's Course in Economic Theory, Economics 300A." In *Research in the History of Economic Thought and Methodology*, vol. 26-C, ed. Marianne Johnson and Warren J. Samuels, pp. 63–117.
- Johnson, Harry G.** 1960. "The Political Economy of Opulence." *Canadian Journal of Economics and Political Science*, 26(4): 552–64.
- Knight, Frank H.** 1933. *The Economic Organization*. Chicago: University of Chicago.
- Krugman, Paul, and Robin Wells.** 2004. *Microeconomics*. New York: Worth.
- Lipsey, Richard G.** 1963. *An Introduction to Positive Economics*. London: Weidenfeld and Nicolson.
- Mankiw, N. Gregory.** 2001. *Principles of Economics*. 2nd ed. Forth Worth: Harcourt Publishers.
- Marshall, Alfred.** 1890 [1920]. *Principles of Political Economy*. 8th ed. London: Macmillan.
- McConnell, Campbell R.** 1960. *Elementary Economics: Principles, Problems and Policies*. New York: McGraw-Hill.
- Medema, Steven G.** 1994. *Ronald H. Coase*. London: Macmillan.
- Menger, Carl.** 1871 [1976]. *Principles of Economics*. Translated by James Dingwall and Bert F. Hoselitz. New York: New York University Press.
- Mill, John Stuart.** 1844 [1967]. "On the Definition of Political Economy and on the Method of Investigation Proper to It." In *Essays on Some Unsettled Questions of Political Economy*, reprinted

in *Essays on Economics and Society, 1824–1845. The Collected Works of John Stuart Mill*, Vol. 4. Toronto: University of Toronto Press.

Mincer, Jacob. 1958. “Investment in Human Capital and Personal Income Distribution.” *Journal of Political Economy*, 66(4): 281–302.

Mincer, Jacob. 1962. On-the-Job Training: Costs, Returns and Some Implications. *Journal of Political Economy*, 70(5, Part 2): 50–79.

Mirowski, Philip, and D. Wade Hands. 1998. “A Paradox of Budgets: The Postwar Stabilization of American Neoclassical Demand Theory.” In *The Transformation of American Economics: From Interwar Pluralism to Postwar Neoclassicism*, ed. Mary Morgan and Malcolm Rutherford, 260–92. Durham, NC: Duke University Press.

Mises, Ludwig von. 1949. *Human Action*. New Haven, CT: Yale University Press.

O’Brien, D. P. 2004. *The Classical Economists Revisited*. Princeton: Princeton University Press.

Parsons, Talcott. 1937. *The Structure of Social Action*. New York: McGraw-Hill.

Raffaelli, Tiziano. 2006. “Character and Capabilities.” In *The Elgar Companion to Alfred Marshall*, ed. T. Raffaelli, G. Beccattini, and M. Dardi, pp. 488–94. Cheltenham and Northampton, MA: Edward Elgar.

Ricardo, David. 1817. *On the Principles of Political Economy and Taxation*. London: John Murray.

Riker, William H. 1962. *The Theory of Political Coalitions*. New Haven: Yale University Press.

Robbins, Lionel C. 1932 [1935]. *An Essay on the Nature and Significance of Economic Science*. London: Macmillan.

Rothschild, Emma. 2001. *Economic Sentiments: Adam Smith, Condorcet and the Enlightenment*. Cambridge, MA: Harvard University Press.

Samuelson, Paul A. 1947. *Foundations of Economic Analysis*. Cambridge, MA: Harvard University Press.

Samuelson, Paul A. 1948. *Economics*. New York: McGraw Hill.

Samuelson, Paul A., and Peter Temin. 1976. *Economics*. 10th ed. New York: McGraw Hill.

Say, Jean-Baptiste. 1803 [1834]. *A Treatise on Political Economy; or the Production, Distribution, and Consumption of Wealth*, edited by Clement C. Biddle, translated by C. R. Prinsep. Philadelphia, PA: Grigg and Elliot.

Sidgwick, Henry. 1901. *The Principles of Political Economy*, 3rd ed. London: Macmillan.

Slichter, Sumner. 1931. *Modern Economic Society*. New York: Holt.

Smith, Adam. 1776 [1976]. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Oxford: Oxford University Press.

Spengler, Joseph J. 1948. The Problem of Order in Economic Affairs. *Southern Economic Journal*, 15(July): 1–29.

Stigler, George J. 1942. *The Theory of Competitive Price*. New York: Macmillan.

Taussig, Frank William 1927. *Principles of Economics*. 3rd, rev. ed. New York: Macmillan.

Whately, Richard. 1832. *Introductory Lectures on Political Economy*. 2nd ed. London: B. Fellowes.

Wicksell, Knut. 1901 [1934]. *Lectures on Political Economy*, vol. 1, translated by E. Classen. London: Routledge.

Wicksteed, Philip. 1910. *The Common Sense of Political Economy*. London: Macmillan.

Winch, Donald. 1996. *Riches and Poverty: An Intellectual History of Political Economy in Britain, 1750–1834*. Cambridge: Cambridge University Press.