From Market-Places to a Market Economy

The Transformation of Rural Massachusetts 1750–1850

Winifred Barr Rothenberg

Winifred Barr Rothenberg

From Market-Places to a Market Economy

The Transformation of Rural Massachusetts, 1750–1850

WINIFRED BARR ROTHENBERG is assistant professor of economics at Tufts University.

The University of Chicago Press, Chicago 60637
The University of Chicago Press, Ltd., London

Printed in the United States of America

01 00 99 98 97 96 95 94 93 92 1 2 3 4 5 6

ISBN (cloth): 0-226-72953-2

Earlier versions of some chapters have been previously published—ch. 4: "The Market and Massachusetts Farmers, 1750–1855," in the *Journal of Economic History* (41, no. 2 [1981]: 283–314); ch. 5: "The Emergence of a Capital Market in Rural Massachusetts, 1730–1838," in the *Journal of Economic History* (45, no. 4 [1985]: 781–808); ch. 6: "The Emergence of Farm Labor Markets and the Transformation of the Rural Economy: Massachusetts, 1750–1855," in the *Journal of Economic History* (48, no. 3 [1988]: 537–66); and ch. 7: "Structural Change in the Farm Labor Force: Contract Labor in Massachusetts Agriculture, 1750–1865," in *Strategic Factors in Nineteenth Century American Economic History: A Volume to Honor Robert W. Fogel,* edited by Claudia Goldin and Hugh Rockoff (Chicago: University of Chicago Press, 1992). All are used with permission.
Credits for display illustrations appear on page 265.

Library of Congress Cataloging-in-Publication Data

Rothenberg, Winifred Barr.
From market-places to a market economy : the transformation of rural Massachusetts, 1750–1850 / Winifred Barr Rothenberg.
p. cm.
Includes bibliographical references and index.
1. Capitalism—Massachusetts—History. 2. Massachusetts—Industries, Rural—History. 3. Markets—Massachusetts—History.
4. Agriculture—Economic aspects—Massachusetts—History.
I. Title.
HC107.M4R67 1992
330.9744'03—dc20 92-13535
CIP

⊗The paper used in this publication meets the minimum requirements of the American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

This book is for my mother
whose memory I aspire with all my heart to honor.

Acknowledgments

OVER THE MANY YEARS I HAVE BEEN WORKING ON THE MATERIALS of this book, I have found extraordinary people who have sustained me in this enterprise. I am not sure one can do work like this without the intellectual stimulation, the generous encouragement, and the good cheer of what has proved to be a genuine community of scholars. Most indispensable of all—the burr under the saddle—has been the example their own work has set. I feel privileged to acknowledge with gratitude: first, and with a full heart, Jerome Rothenberg; then Joyce Appleby, Jeremy Atack, Paul A. David, Stanley Engerman, David Hackett Fischer, Robert W. Fogel, David Galenson, Robert E. Gallman, David Garman, Claudia Goldin, Oliver Hart, Morton Horwitz, Alice Hanson Jones, Julius Kirshner, Allan Kulikoff, Beth Lilienstein, Robert A. Margo, John J. McCusker, Sarah F. McMahon, Bettye Hobbs Pruitt, Ellen Rothenberg, Robert A. Rothenberg, Daniel Scott Smith, Kenneth Sokoloff, Richard Sylla, Peter Temin, Lorena Walsh, Gordon Wood, and Gavin Wright. That they made this book as good as it is in no way implicates them in its failure to be better.

I am grateful also to my "dear enemies," to Michael Merrill, James Henretta, Jonathan Prude, Steven Hahn, Christine Heyrman, Christopher Clark, and other "moral economists" whose lively opposition has given to the work of disagreeing with them an energy, a passion, a *frisson* it otherwise would not have had.

I had the support of a grant-in-aid from the Economic History Association, which is always worth more than its face value if it can be understood to be a validation by colleagues one greatly admires. The manuscript was completed with the support of a generous fellowship from the American Council of Learned Societies.

As everyone who does archival research knows, the librarians and their staffs are the Gatekeepers. I am indebted to David Proper, Florence Lathrop, Theresa Percy, Lorna Cobden, Kathy Majors, and Leo and Helen Flaherty, and their staffs, for access over many years to the treasures they have guarded at, respectively, Historic Deerfield, the Baker Library Archives, Old Sturbridge Village Library, the Society for the Preservation of New England Antiquities, the American Antiquarian Society, and the Massachusetts State Archives.

To Julie McCarthy, Editor at the University of Chicago Press, and to Joseph H. Brown, copyeditor, go my astonished thanks for their scrupulous efforts to make me look good.

Introduction

THIS WORK IS OFFERED AS A CONTRIBUTION TO A LONG-STANDING BUT vigorously ongoing debate about the pace, pattern, and genesis of growth in the early American economy. I say *long-standing* because interest in the performance of the economy can be traced back at least to the earliest years of independence, when documenting the growth of the "First New Nation" was indistinguishable from celebrating it, an act of fervent patriotism as well as a tool of public administration. Listing, measuring, weighing, enumerating, calculating—all were part of a growing obsession with counting that constituted what James Cassedy has called "the beginnings of the statistical mind."[1] Births, marriages, and deaths had to be recorded in civil registries (at least in those states that had voted to disestablish religion); population had to be counted to determine representation, taxation, the organization of wilderness into territories and of territories into states; ratable polls, acreage, and the values of real and personal, agricultural and commercial property had to be enumerated to determine the incidence of state and local taxation. Customhouse agents monitored the international traffic in dutiable commodities; naturalists catalogued indigenous plants and animals, took daily temperature readings, recorded climatic phenomena and related them to crop yields, mortality, and outbreaks of disease; farmers, artisans, traders, private bankers, and moneylenders recorded debts in account books and ledgers; surveyors calculated and almanacs published the longitude, latitude, and heights of hills ("eminences"), church steeples, and lighthouses; recruiting officers registered the height, birthplace, and residence of soldiers, sailors, and militiamen; clerks of courts of common pleas docketed actions for debt; ship manifests itemized the heights and weights of children carried in the domestic slave trade; almshouse hospitals recorded the weights of infants born to paupers; the Quartermaster Corps kept accounts of civilian wages and provisions prices paid at each fort; and probate courts in every county inventoried all the personal property (and, in the North, all the real property) owned by a large fraction of all decedents.

Because aggregate data were not collected before 1840, it is from sources such as these that economic historians have been attempting to reconstruct the performance of the American economy in its early dec-

1. Cassedy, *Demography in Early America.*

ades. The first modern estimate found the United States between 1800 and 1840 to have been an economy with falling per capita output, its rapid population growth outrunning the ability of a fairly rudimentary technology to generate a commensurate increase of real output.[2] This pessimistic view, however, has not prevailed. The westward movement to more fertile lands, the shift of resources from agriculture to higher-productivity sectors (commerce, construction, and manufacturing), and the increased productivity within agriculture itself all suggest that both per capita output and its rate of growth per annum rose between the Revolution and the Civil War,[3] and more recent research has yielded estimates tracking per capita output by decade.[4]

While no consensus on rates has yet emerged,[5] considerable importance attaches to the consensus that there *was* growth. In an overwhelmingly agricultural economy, as the United States was before 1840, a stagnant or declining agriculture would have canceled out the contributions of more vigorous sectors to the overall rate of growth. That resources were, instead, sufficiently mobilized to produce output ahead of prodigious population growth speaks to the dynamism of the farm sector in particular. But what were the sources of that dynamism? Was it due

2. Martin, *National Income in the United States.*

3. See, e.g., Kuznets, *Income and Wealth of the United States;* Parker and Whartenby, "The Growth of Output before 1840"; Seaman, *Essays on the Progress of Nations;* Taylor, "American Economic Growth before 1840"; Berry, *Estimated Annual Variations in Gross National Product;* David, "The Growth of Real Product"; Poulson, *Value Added in Manufacturing, Mining, and Agriculture;* Weiss, "U.S. Labor Force Estimates"; Gallman, "American Economic Growth before the Civil War"; Engerman and Gallman, "Economic Growth"; and Gallman, "The Pace and Pattern of American Economic Growth."

4. The following estimates of per annum growth rates are among those that have appeared in the literature. (*a*) Real GNP per capita grew at an annual rate of 1.4 percent between 1805 and 1809 and 1.1 percent between 1835–39 and 1855–59 (Berry, *Estimated Annual Variations in Gross National Product*). (*b*) Real GDP per capita grew at an annual rate of 0.25 percent between 1800 and 1820, 1.96 percent from 1820 to 1840, and 1.6 percent from 1840 to 1860 (David, "The Growth of Real Product"). (*c*) Real value added per capita grew at 0.4 percent per annum from 1809 to 1839 and 1.4 percent from 1835 to 1859 (Poulson, *Value Added in Manufacturing, Mining and Agriculture*). (*d*) Real GDP per capita grew at 1.51 percent per annum from 1793 to 1800, at 0.46 percent from 1800 to 1820, at 0.93 percent from 1820 to 1840, and at 1.44 percent from 1840 to 1860 (Weiss, "U.S. Labor Force Estimates," table 6 and p. 26). (*e*) Total factor inputs per capita grew at an annual rate of 0.12 percent from 1774 to 1800, 0.49 percent from 1800 to 1840, and 1.05 percent between 1860 and 1900 (Gallman, "American Economic Growth before the Civil War," table 8). (The values given in *a*, *b*, and *c* are adapted from Engerman and Gallman, "Economic Growth," table IV, p. 23.)

5. And what agreement may have been achieved must now come to terms with new estimates of the size of the labor force, the size of the capital stock, and the pattern of real wage growth (Weiss, "U.S. Labor Force Estimates"; Gallman, "American Economic Growth before the Civil War"; and Margo, "Wages and Prices during the Antebellum Period").

to an increase in the supply of inputs?[6] to an increase in the productivity of inputs? to improvements in the quality of inputs?[7] to more efficient organization of the production process?[8] Or was it the consequence of exogenous factors acting on the American export sector?[9] How should this multiplicity of growth factors be ranked?[10] It is in the context of these kinds of questions that this set of studies seeks to make a contribution.

This book had its beginnings in an attempt directly to measure the growth of an agricultural economy on the cutting edge of transforming change: rural Massachusetts between 1750 and 1850. The problem, as I initially formulated it, was to estimate for a sample of farms inventoried at probate a set of production functions, by which is meant the quantitative relations between farm outputs, on the one hand, and land, labor, and capital (working livestock and farm tools) inputs, on the other. Data problems proved to be serious, not the least of which was to construct an index with which to deflate probate values in order to avoid confounding real changes with fluctuations in the purchasing power of the currency.

It was in the course of constructing a deflator relevant to that economy—composed of the products raised by those farmers, constructed from farm-gate prices charged by those farmers, and weighted by the relative importance of each of those products to Massachusetts farmers—that two observations struck me as particularly significant: regional differentials in the price of corn appeared to narrow (converge) over time; and the farm price index, once constructed, appeared to ex-

6. Territorial expansion, farm making, and clearing expanded the land input; high rates of natural increase, the slave trade, and immigration expanded the labor input; capital imports, domestic savings, the natural increase of livestock, and, most of all, "the hard work of farm building" expanded the capital input (McCusker and Menard, *The Economy of British America*, 84).

7. The quality of cleared land is improved by fencing, rotation, fallowing, and manuring; the quality of labor by education, skills (including learning by doing), and health; and the quality of capital by technological change.

8. This includes increased specialization and division of labor on farms, in artisanal shops, and in factories; increasingly secure propertry rights; the improved articulation of markets; the proliferation of central places; improved transportation networks; and lowered transactions costs.

9. For example, the revolutionary war, the Embargo, the British industrial demand for cotton, West Indian plantation demand for foodstuffs, the Napoleonic Wars, Baltic grain harvests, American tariffs, and the decreased costs and increased productivity of ocean shipping.

10. "American growth before the nineteenth century flowed chiefly from an increase in the factors of production—land, labor, and capital." However, "almost half the gain in per capita product in the nineteenth century and roughly 80 percent in the twentieth century was due to the improvement in factor productivity" (Gallman, "The Pace and Pattern of American Economic Growth," 59).

hibit a pattern of cyclical fluctuations and sudden shocks synchronous with those observed in the Warren-Pearson index of New York City wholesale prices and the Bezanson index of Philadelphia wholesale prices.[11] Synchronicity *and* convergence in the behavior of prices is an acknowledged diagnostic of the role of market forces in their determination. In the light of the social historiography dominant in the last two decades, which would deny to market forces a hegemonic role in the preindustrial economy of New England,[12] I felt compelled to pursue a line of inquiry that, while closely related to productivity growth, is nonetheless different from it. When did the rural economy of Massachusetts become "market oriented"? How can we know? What role did market orientation play in the transformation of the rural economy; that is, what were its productivity consequences? In the end, the effort to document the emergence of a market economy would prove not to have been a digression at all but to have come around full circle not only to a measure of labor productivity growth but also to an explanation for it.

Thus, I attempt in this volume to address not one question but two. How does a market economy happen, and how does it provide the motive and the cue for transforming growth? Seventeen years ago, when this work was begun, it was an academic exercise, an antiquarian indulgence. Suddenly these have become among the most compelling questions of our time.

11. See my "A Price Index for Rural Massachusetts," esp. figs. 3 and 5, pp. 982 and 987.

12. For a full discussion of the role of the "moral economy" in what is now being called "the New England debate," see chap. 2.

Contents

1

From Market-Places to a Market Economy

I

No more compelling issue occupies economic historians of the modern world than understanding the process of modernization itself: the origins of that long and mysterious transformation in which the countryside[1] was propelled from a millennium of inertia to a violent and sudden clustering of technological changes;[2] from an economy of severely straitened possibilities and widespread poverty to one of "unheard-of material welfare";[3] from the perpetual specter of famine[4] to the expectation of a perpetual sufficiency; from zero or negative population growth to a "sudden" doubling of population;[5] from zero productivity growth to a doubling of labor productivity in agriculture;[6] from "the poor stockinger, the Luddite cropper, the 'obsolete' handloom weaver, the

1. "The decisive part in the transition from feudalism to capitalism is played out in the countryside. This is certainly one of the keys to the 'mystery' of the transition, though not readily perceived when one is obsessed by the commercial and industrial manifestations of nascent capitalism" (Bois, "Against the Neo-Malthusian Orthodoxy," 109, n. 7).

The eleventh century was also a transformational "moment" in which there was "a great moving of stagnant waters" (Ashley, *Introduction to English Economic History and Theory,* 1:130).

2. Mokyr, "Was There a British Industrial Evolution?" 4.

3. So acknowledged even by the transformation's severest critic, Karl Pôlanyi (*The Great Transformation,* 3).

4. According to Fernand Braudel, France suffered more than sixteen general famines as late as the eighteenth century and "hundreds and hundreds of local famines" (*The Structure of Everyday Life,* 74).

There seems to be a difference of opinion in the case of English famines. According to Andrew Appleby, England suffered its last famine in 1623 (see his "Grain Prices and Subsistence Crises in England and France," 867). But Robert Fogel, using Wrigley and Schofield's 1981 mortality data, finds a "lethal resurgence" of mortality crises during the late 1720s. In fact, argues Fogel, laissez-faire government policy repeatedly turned dearths into famines until the mid-nineteenth century (see his "The Conquest of High Mortality and Hunger in Europe and America" and "Second Thoughts on the European Escape from Hunger").

Markets play an ambiguous role in such crises, sometimes facilitating the flow of foodstuffs from regions of plenty to regions of dearth, sometimes depleting local grain supplies that might have buffered the effect of famine. Braudel reflects this ambiguity when he writes of the peasants of Tuscany that, on the one hand, they "could not have managed without" the merchants who supplied them with Sicilian grain, while, on the other hand, peasants elsewhere "in a state of dependency on merchants . . . had scarcely any reserves of their own" (Braudel, *The Structures of Everyday Life,* 74–75). In England, likewise, access to markets both encouraged diversification and periodically drained the countryside of food grains.

As the historiography of staple theory abundantly makes clear, access to markets, by itself, is a necessary but not sufficient condition for the welfare effects attributed to it.

5. The population of Europe was 84.5 million in 1340, 83.4 million in 1600, and 170 million in 1800 (Clark, *Population Growth and Land Use,* 64, table III.i).

6. English agricultural labor productivity, measured as the ratio of total population to agricultural population, was 1.32 in 1520, 1.43 in 1600,1.82 in 1700, 2.19 in 1750, and 2.48 in 1801 (Wrigley, "Urban Growth and Agricultural Change," 720, cited in Allen, "The Growth of Labor Productivity in Early Modern English Agriculture," 119).

'utopian' artisan,"[7] to an industrial proletariat; from markets embedded within and constrained by values antithetical to them within the culture to the "disembedded" market whose values penetrated and reinvented that culture.[8]

Of course I overstate. Swinging history between "from" and "to," a common rhetorical device, tells us only the direction of change, nothing about the cause or process or rate or timing of change. What caused the transformation we call "modernization"? Was it indeed part of an inexorably ongoing historical process? Or was it a fortuitous accident, a "random walk"?[9] That is, can the change be plotted without, as it were, "lifting pencil off paper"?[10] Or was it precipitated by some sudden shift of exogenous parameters (a war, a plague, a pivotal technological breakthrough)? In either case—whether the change is understood as a continuous evolutionary process or as a discontinuity—how do we account for the absence of change, for "the layer of stagnant history"[11] that remains obstinately present within even the most rapidly modernizing societies? "From/to" dichotomies trick the mind into seeing historical change as deceptively simple. "The Day the Universe Changed" took centuries, and even so, much of it didn't.

The immense transformation that ushered in the modern world appears to have been an omnivorous process, ultimately (although not simultaneously) reshaping all institutions in its path—the locus of sovereignty, the prerogatives of kingship, the distribution of power within the political process, property rights, legal institutions, forms of land tenure, the level of technology and the pace of technological change, age at marriage, family size, patterns of authority and deference within the family, gender roles, the intensity of work effort, the age, gender, and skill composition of the labor force, labor/leisure trade-offs, the quantity, forms, and functions of money, the allocative efficiency of prices, the tenets of religious belief, the boundaries between public and private, sacred and secular, urban and rural—all linked by feedback loops to one another and to the great demographic surges and scourges of early mod-

7. Thompson, *The Making of the English Working Class*, 13.

8. *Disembedded* is Karl Polanyi's term for the hegemonic market cut loose from its social context to become an autonomous set of relations with laws, institutions, and motivations of its own. See also Crowley, *This Sheba, Self*, 111.

9. See Rostow, "No Random Walk."

10. Alexander Gerschenkron's definition of continuity in history in *Continuity in History and Other Essays*.

11. Braudel, *The Structures of Everyday Life*, 28. Elsewhere, Braudel describes "the stagnant layer" as "the lowest stratum of the non-economy, the soil into which . . . capitalism can never really penetrate" (*The Wheels of Commerce*, 229).

ern Europe.[12] Not least, in the process the market was reshaped into the principal agency of economic transformation.

In order for the market to become an agent of change, it had to be transformed from something acted upon to something acting. Understanding this process—the emergence of a self-equilibrating, self-regulating, hegemonic market economy out from under the constraints of the larger society—requires us to consider a host of questions.

How do we define a market economy or recognize it when we see it? From what did it evolve?[13] What environmental factors forced that evolution?[14]

Was its emergence a once-and-for-all event in the linear unfolding of western European history? If so, when, why then, and why there? Or has the so-called rise of the market been a recurring phenomenon, advancing, retreating, and advancing again on the rising and ebbing tides of civilizations?

Does a market economy have a threshold size? What role do scale factors play in the distinction between market-places and a market economy? Were the exchanges between medieval walled towns and their hinterlands, and the exchanges in the medieval cloth trade between Genoa and Novgorod, equally (even if not equal) market transactions?

In attempting to explain the emergence (or recurring emergences) of the market economy, are we sure we understand the direction of causation? Can we be confident that the usual "causes"—population pressure, technological change, an alteration in the nature and security of property rights—are not, in fact, consequences?

What relation does a functioning market economy bear to its *conceptualization* in classical economic theory as a free-standing, homeostatic feedback mechanism?

What relation does a market economy bear to the process of economic growth and transformation?

12. A controversy surrounds the question of the exogeny or endogeny of demographic factors in the development of agrarian capitalism in England. That controversy is central to the whole so-called Brenner debate.

13. Joyce Appleby writes, "The development of the free market was one of the true social novelties in history" ("The Social Origins of American Revolutionary Ideology," 939). To speak of the free market as "developing" suggests a process evolving incrementally in historical time. But to speak of the free market as a "novelty" suggests its emergence out of a nonmarket process, discontinuously, even suddenly, as a fortuitous adaptation unlike anything that had gone before.

14. As formerly socialist economies attempt to legislate this transformation, the question is no longer a mere academic exercise but a matter of the utmost urgency. See, e.g., Feige, "Perestroika and Socialist Privatization," and "Socialist Privatization."

II

If in the hegemony of the market economy lies the genesis of the modern world, then we shall need first to distinguish it from its look-alike, market-place economies the existence of which can be traced back so far in human history that "the tendency to truck and barter" was long thought to be "innate."

There is a growing body of archaeological evidence that "English kings instituted a network of marketing centers during the 9th and 10th centuries,"[15] and studies in shire tax rolls suggest the existence of "a dense network" of local and regional peasant markets in the early medieval period.[16] One scholar discerns market forces at work in England as early as 1297 in the determination of debt, migration, rents, wages, and specialization in animal husbandry.[17] The Statute of Labourers (1349), which compelled employment at fixed wages under pain of imprisonment and mutilation, is usually portrayed as the very antithesis of a market process. But requiring unemployed farm workers to stand for hire in open markets "with the tools of their trade in hand" made human labor a commodity five centuries before the capitalist "commodification" of labor.[18] The monks of Battle Abbey were farming the manor lands at Marley entirely with wage workers (i.e., with a labor force alienated from its ascriptive rights to the land) by 1350, and in raising livestock for the beef and hide markets these monks anticipated by perhaps four hundred years the market-oriented husbandry we call the Agricultural Revolution.[19] At the same time, peasant lands were changing hands so rapidly that a "virtually free market in peasant holdings . . . had come into being" by the late fourteenth century.[20]

15. Biddick, "Medieval English Peasants and Market Involvement," 823.

16. Biddick, "Missing Links," 279.

17. Biddick, "Medieval English Peasants and Market Involvement," 824.

18. On the Statute of Labourers, see Clark, "Medieval Labor Law and English Local Courts," 333. For Polanyi, the repeal of the Speenhamland Plan (the Old Poor Law) in 1834 marked the creation of a capitalist labor market and hence of a market economy: "Not until 1834 was a competitive labor market established in England; hence industrial capitalism as a social system cannot be said to have existed before that date" (*The Great Transformation,* 83).

19. Searle, *Lordship and Community,* 304.

20. Faith, "Peasant Families and Inheritance Customs in Medieval England," 92. But was there a free market in peasant land? Were peasant lands privately owned and fully negotiable? To these questions Joel Mokyr has introduced a cautionary note. "Yes and no," he writes. "Ordinary peasant land was privately owned, but not by peasants. The Fee Simple that dominates American landowning today barely existed, and certainly not among the peasantry. Tenants holding land in

But the history of markets goes back much further, to the very earliest times when commercial caravans plied the major trade routes between Egypt and Mesopotamia. Ships of ancient Greece have been recovered from the bottom of the sea equipped with bins to carry grain and with amphorae to carry oil and wine in the Mediterranean trade, and in the surviving written record have been found contracts "between the merchant, the ship owner and, in some cases, the banker who put up the money for a trading voyage (and, through a clause cancelling the debt if the ships were lost at sea, provided the ancient equivalent of shipping insurance)."[21]

One could make the case that the wrath of the Biblical prophets against commercial values testifies a fortiori to the dominant role that commerce must have played in Israelite life in the eighth and seventh centuries B.C.E. Indeed, one would be hard pressed to find in any of today's decline-and-fall literature a depiction of the downfall of a great mercantile power as vivid as Ezekiel 27, written, in all likelihood, at the end of the sixth century B.C.E.

Documents of the fourteenth century B.C.E., found at Ugarit, mention a trade in cedars from Lebanon, textiles from Acco, Ashdod, and Ashkelon, iron, copper, and gold from the land of Punt, salt from the Dead Sea, perfumes, and the royal purple dye called "phoenix."[22] Further back still, there was in all likelihood a market within the walls of Jericho, the oldest city in the world, dating from the seventieth century B.C.E.: "Modern research has affirmed that ancient Western Asia knew money (in the generic sense of a medium of exchange), market places, wage labor, profit-oriented businessmen and firms, and supply-demand-determined market prices."[23]

There is even evidence that suggests to some paleoanthropologists that the transition from hunting-gathering to settled agriculture in the Neolithic may have had its origins in the specialized cultivation of

villain socage had certain 'rights' in land, the right to use arable land, that sometimes included and sometimes excluded the right to use the commons or stock-grazing. These rights, to be sure, were bought and sold but precisely because they were often vague and in dispute, based on custom and witnesses, this market in rights to land must have been fraught with transactions costs, disputes, fraud, and legal fees. Just imagine what a title search and a deed to home ownership would look like if owning your house included the right to use your neighbour's kitchen for Thanksgiving night while he could use your swimming pool every second Monday in August." Joel Mokyr, "Comments" [on Donald N. McCloskey, "New Findings on Open Fields"], p. 3.

21. Landels, *Engineering in the Ancient World,* 164.

22. Aharoni and Avi-Yonah, *The Macmillan Bible Atlas,* 16–20.

23. Silver, *Prophets and Markets,* 253.

crops—such as grains and sugarcane for fermented beverages; flax, wool, and cotton for textiles; and sisal, jute, and hemp for baskets, ropes, nets, and fish lines—the "industrial" uses of which gave them high value in trade.[24]

There is, then, abundant documentation of a long history of market-place economies. But market-place economies are not market economies. While undoubtedly contributing to the economic *growth* of Europe, market-place economies did not forge its transformation. As governor of the exchange relations in an economy, the market is something more than, and other than, the sum of market-places. Identifying the difference between a market-place economy and a market economy and locating the "moment" in time when a market economy can be said to have emerged will occupy us for much of the balance of this book.

III

I begin with four "revolutions" that have been credited with having had a major impact on the development of a market economy in early modern Europe: in the sixteenth century, the Protestant Reformation, the so-called Price Revolution, and the rise of mass demand for consumer goods; in the seventeenth, the securing of private property rights as a consequence of the century-long struggle between Parliament and the Stuart kings.

Merely to mention the Reformation in this context calls up Max Weber's magisterial thesis linking the spirit of capitalism to the Protestant ethic.[25] It is not my intention to walk that ground again. The point I raise here is limited to an area Weber underemphasized: the attack by

24. A conference of anthropologists, prehistorians, and skeletal biologists held in 1982 resulted in the publication of a conference volume entitled *Paleopathology at the Origins of Agriculture*, edited by Mark Nathan Cohen and George J. Armelagos. "Noted at the conference was the suggestion that the *industrial* value of the agricultural product may have been the primary stimulus for the development of agriculture," according to a private communication from Arthur C. Aufderheide of the Department of Pathology and Laboratory Medicine at the University of Minnesota–Duluth. This line of inquiry derives from the discovery in skeletal remains that the shift from hunting-gathering to a diet based on cultivated grains in Neolithic Mesopotamia—and whenever and wherever the shift to sedentary agriculture has taken place—had deleterious consequences for human health.

25. Despite the chain of causal links that Weber forged between the Protestant (in particular, Calvinist) Reformation and the spirit of capitalism, Benjamin Nelson charges that only "careless critics" could accuse Weber of ignoring the medieval (i.e., Catholic) origins of capitalism and of "imagining that the capitalist economy was an emanation of the capitalist spirit" (*The Idea of Usury*, 74, n. 3).