

# The Economics of Choice

*Neoclassical Supply and Demand*

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## NEOCLASSICAL ECONOMICS IS THE STUDY OF CHOICE

A century ago the English economist Alfred Marshall began his exposition of what is now called neoclassical economics with a definition: economics, he said, is the study of humankind in the ordinary business of life. The definition covers the non-neoclassical approaches, too—Marxist, Austrian, Gandhian, institutionalist. All these are part of the conversation of economics since the seventeenth century about the business of humankind. Marx was a follower of David Ricardo, who was in turn a follower of Smith. Marshall himself and the neoclassicals are another branch of this tree, the dominant branch in modern economics.

The specifically neoclassical definition, which was made central in British economics in the 1920s and was committed to mathematics in the 1940s, is that economics is the study of *choice* in the ordinary business of life. To study choice is to fail to study other things (which is in fact a neoclassical way of putting the matter). Neoclassical economists are fond of preaching that to take one road in a yellow wood is to sacrifice the other. Intellectual choices are no exception. The Marxist study of Power, the institutionalist study of Habit, the Austrian study of Creativity are more or less subordinated in the neoclassical approach to what the neoclassicals are pleased to call “maximization under constraints.”

Neoclassicals are obsessed with Choice, and see choice where others see subordination or necessity. They would urge the historian not to jump hastily to a diagnosis that peasants follow their plows by custom alone or that traders trust each other on grounds of solidarity alone.

That is the main payoff to thinking neoclassically about history. The historian will be able to see choices where she did not before. The businessperson must choose between markets at home and abroad; the consumer must choose between buying in the village or in the town; the male laborer must choose between a factory or an apprenticeship; the female homemaker must choose between making homespun or entering the market.

Neoclassical economics, in other words, completes sociology and anthropology, because it studies a motivation unattractive to those fields: choice under constraint. Whether analysis of choice under constraint is more useful for writing history than the analysis of symbols in the late medieval French monarchy or the analysis of tension between the classes in late nineteenth-century Massachusetts towns remains to be seen. But it can be part of most histories.

The economists are not the only students of society to emphasize choice. Their parables were anticipated by writers of fiction in the age of the bourgeoisie. Charles Dickens peopled his novels with monsters of calculation among whom his prerational and Pickwickian heroes swim. Jane Austen was writing novels of domestic maximization—marriage-seeking mothers and status-seeking fathers—about the same time that Jeremy Bentham was holding forth on the maximizing model of man.

And Daniel Defoe, a pioneer of the genre, saw in *Robinson Crusoe* a Choosing Man: “having considered well what I most wanted, I first got three of the Seamen’s Chests” (41). Crusoe’s raft is not of infinite size; at any moment the weather can change, and sink the wreck; this may be the only trip. Crusoe cannot have everything, and so must make choices. He takes only the clothing “wanted for present use,” because there were “other things which my eye was more upon” (42). That is, he chose to have fewer clothes and more carpenter’s tools. He could not in the circumstances have both. He is a commercial man making choices under conditions of scarcity.

Details of the style reinforce scarcity in *Robinson Crusoe*—a contrast to the stories of shipwrecks in the *Odyssey* or the *Aeneid*, over which hover gods willing to perform miracles of abundance. The miracles in Crusoe’s world are naturalistic, reflecting always Adam’s Curse. The story is filled with realistic disappointment, signalled often by an omi-

nous “but.” “There had been some Barly and Wheat together” on the wreck, “but, to my great Disappointment, I found afterwards that the Rats had eaten or spoil’d it all” (41). The wreck had “a great Roll of Sheet Lead: But this last was so heavy, I could not hoise [*sic*] it up to get it over the Ship’s Side” (45). He takes a kid from a she-goat, and “hopes to have bred it up tame, but it would not eat, so I was forc’d to kill it and eat it myself” (50). The “but” is unsentimental, aware of life’s scarcity. It is the economist’s master conjunction.

To emphasize a *free* choice is of course to take seriously a certain political agenda. Neoclassical economics, like the novel, has never fully recovered from its origins in the bourgeois revolutions of the eighteenth and nineteenth centuries. The alternatives to mainstream, bourgeois economics—above all Marxist economics, but also institutionalist and other smaller schools—spend a good deal of their time attacking the reality of free choice. They argue that the free choice that matters is choosing the institution within which the so-called freedom is exercised, not choosing from inside a given institution. Freedom in such a view consists not in being free to sleep under the bridges but in being free to change the society that allows people to be homeless.

To this the bourgeois economist—who in truth is not overburdened by such worries—can reply as follows. Yes, the wider choices of reform and revolution are important. (Incidentally, the choices of reform and revolution are also subject to scarcity, and therefore to the economist’s calculus of choice. A version of the well-worn phrase “political economy” has recently brought politics itself under the economist’s way of reasoning, and is applicable to history—see Root 1994, Hoffman 1995.) But the Marxists and institutionalists, says the neoclassical, underestimate how powerful are the small choices. The individual choices by rice buyers and factory owners in the economy are like the movement of air molecules in a balloon. The economics of choice examines the single molecules, with an eye on their behavior in the mass. It is a Tolstoyan point, that even Napoleon’s history needs to be told from the point of view of the common soldier on the battlefield, who in a mass sets the conditions under which the Great Man maximizes or fails to maximize.

The purpose here is to indicate how choice can drive an economy. The wider, institutional choice is treated in some of the other chapters. Here I can do no more than sketch a few of the main themes in the neoclassical theory of choice under constraints—known to its friends as “price theory.” Price theory, most economists agree, is one of the characteristic gifts of economics to the study of society. No more than psychoana-

lytic technique or thick description, it cannot be learned in a day. Most economists themselves do not master it until they have been teaching it for some years.

#### CHOICES OFTEN TAKE PLACE IN A MARKET SOUP

Economic molecules in the modern world huddle, of course, in markets, which gives another sense in which economics is bourgeois, the townsman’s science. But the markets operate beyond the town walls. Markets in the economist’s way of looking at it are arrangements and attitudes, not necessarily single places. A market is merely the group of people who are willing to buy and sell things that they are willing to treat as reasonably close substitutes. Notice how much judgment and psychology goes into the definition. The market in wheat, for example, is located in a million places, wherever wheat might be bought and sold. It is contained in human minds wherever bread is grown and milled and eaten. Considering the narrow limits of transport cost nowadays, the world has essentially one price and one market for wheat. On the other hand the housing market of Manchester is confined to Manchester, because houses and especially locations cannot by their nature move, and few people in Los Angeles view a house in Manchester as much of a substitute for their shake-shingled paradise.

Historians have been accustomed by anti-neoclassical writers such as Karl Polanyi to think of the market as something new, born in 1795 or thereabouts, or at the earliest in the years a few centuries before of sheep-eating men. Polanyi’s work has not survived scrutiny in the many fields of economic history he touched. But even if Polanyi were correct the conclusion would not follow that modern, neoclassical economics applies *only* to market economies. Choice has nothing in particular to do with markets, perfect or otherwise. Many choices are made outside markets: in families most of all; in governments; and in other institutions. Even a business firm is dominated internally by the “visible hand” of conscious planning, rather than by anonymous instructions from a market. The business firm must in any case make choices. Robinson Crusoe made choices wholly outside the market, but his choices were no less economic on that account. Centrally planned economies make their choices Robinson-Crusoe style outside a market, too.

Yet many choices are made in markets. It is therefore impossible to talk long about choice without mentioning markets if lots of them are around. And in an economy with markets the values they generate will influence

many of the decisions made outside the market. To this extent Polanyi was surely right. Markets pervade when they exist. A wife may choose to work inside the home rather than to sell her labor in the market, but the size of her potential market wage will influence the choice. A king may choose in the royal bedchamber a strategy of conquest, but the market in ships and cannon will determine whether it succeeds or fails.

### ENTRY AND EXIT TELL THE ECONOMIC STORY

The simplest way to extend the notion is to say that the molecules in the economy make their choices with profit in mind. The profit, however, is not some vulgar cash balance. Somewhat surprisingly, economics is not primarily about money. The profit can be inward and spiritual as well as outward and corporeal, as wide as utility or as narrow as what the stockholders want. The notion of the pursuit of profit is therefore reasonably innocent. It commits the historian who adopts it to offering reasons why his subjects behave as they do, but not much more. The reasons can always be translated into a sort of profit.

Broad or narrow, the idea of profit has been a device for telling stories that would otherwise not get told. Economists since Adam Smith have emphasized the obvious point that unprofitable businesses fail, called in the modern jargon "exit." The observation is of course not surprising to historians. The wheat growers of Europe faced low prices in the 1870s, pushed down by competition from Russia and America. When their governments did not protect them, as they did not in Denmark and Britain, the wheat growers shifted to milk and vegetables. In the early nineteenth century the weavers of cotton cloth in India had a profitable domestic industry. But in time the cheaper cloth from the factories of Lancashire drove them to failure. The north-south railroads came to Texas by way of Dennison in 1881, and soon the Long Drive to Kansas ended and mythmaking began.

One can see the uses of this notion of profit for historical narration. After all, unprofitability and exit figure in history as much as success and entry. When faced with a story of failure a noneconomist is likely to look for a cultural flaw. The overindulgence in social graces by English wheat farmers would be one, for example, or the traditional values of the Indian cotton weavers or the careless nobility of the Texan cowboys, all pursuing something other than profit. Victorian businessmen in England are sometimes said to have "failed" because they are claimed to have been the grandsons of successful men or because they are supposed to have

been addicted to Greek verse. As David Landes put it long ago, "Thus the Britain of the late nineteenth century basked complacently in the sunset of economic hegemony. . . . Now it was the turn of the third generation, the children of affluence, tired of the tedium and trade and flushed with the bucolic aspirations of the country gentleman. . . . They worked at play and played at work" (1965, 563).

Neoclassical economics wants to tell the story another way, emphasizing circumstances of profit rather than features of culture. It is again a complement to what is missing from an anthropological approach.

A business in trouble will not remain in business long—there's a simple plot line. Ecologists and evolutionists have been using it since Darwin, noting that a white pigeon sticking out in a Black Country of factory smoke is not long for this world. Economic history uses it, too. As a Dickens character famously put it: Annual income twenty pounds, annual expenditure twenty pounds ought and six: result misery. And exit.

The other side of the story of exit is the story of entry. Profitable businesses do well, and may often do good. Andrew Carnegie was profitable at making steel and John D. Rockefeller was profitable at marketing oil. Their businesses grew. What is more, their profitability attracted imitators. Their whole industries grew. To state the obvious, industries that are profitable will expand, attracting entry. An ecological niche profitable for black pigeons will become thronged with them. Similarly, regions that are profitable will expand, attracting entry, as did the American Midwest in the second half of the nineteenth century. Nations that are profitable will expand, attracting entry, as did China from Chou to T'ang to Ming. Profit is nectar to the bees of industry.

Profitability is a way of replacing the overused metaphor of growth, a handy metaphor to start with, but not rich in the questions it suggests. It suggests the historian ask whether the field for growth was fertile, say; but it does not show how to answer it. The profit metaphor, by contrast, no less a metaphor, guides the historian to calculations of profit or loss, suggesting an account of action. Early in its trading history, Athens and its countryside exited from producing wheat, expanding olive oil and the manufacture of urns to carry it to Egypt (Lévy 1967, 24). The olive-oil industry did not merely grow like a plant. People supplied more oil because it was profitable to do so. They entered.

The economic story of entry and exit is told in two acts, a short run and a long. The sensitivity to time should be attractive to historians. Profitability or unprofitability is not forever, because entry spoils what causes it. The bees use up the nectar. Carnegie and Rockefeller made their

killings in a few years before wide entry, but they lived to see steel and petroleum selling cheap. Likewise, as Egyptians and Italians and others entered the olive-oil trade in the ancient world the temporary advantage of Attica faded. The price of olive oil fell, reducing profits to normally low levels. The Roman Cato the Elder earned merely 6 percent per year on his olive trees. The price of Rockefeller's oil or Cato's could not have stayed abnormally low or abnormally high for long. Entry spoils profitability, exit cures unprofitability.

The story of profit, with the corresponding entry and exit, is a self-regulating one, a historical thermostat. Earnings in the end are kept not too high and not too low because the one attracts entry and the other causes exit. As in scholarship, unusually high returns attract entry to the fashionable specialties, which in the end become routine.

A characteristic bit of economic reasoning, then, as characteristic of Marxist as of neoclassical economics, is to conclude that entry and exit force profits to hover around "normal" in "the long run," by the end of the second act of the two-act play. "Normal" is what one can earn in the alternative occupations one might choose (note the role for choice again). The "long run" lasts as long as it takes the activity to get back to normal profit.<sup>1</sup>

#### AN EXAMPLE: TAXATION

A pension scheme is proposed for the nation, in which "the employer will pay half." It will say in the law and on the worker's salary check that the worker contributes 5 percent of his wages to the pension fund but that the employer contributes the other 5 percent. A law is passed "designed" (as it is put) to have such and such an effect. The lawyerly mind goes this far, urging us therefore to limit the hours of women workers or to subsidize American flag shipping. The women, the lawyer thinks, will be made better off—as will the American ships. Under the pension scheme the workers will be 5 percent better off, getting half of their pension free.

1. Note that the reasoning is circular. The long run is as long as the long run takes. The circularity closes off a hemorrhage in the analysis. The tourniquet is necessary because economics cannot say much about the traverse to the long run. A sensitivity to how long the long run should be in any particular case is the main skill of applying economics, but unhappily there is no general rule. The long run today in the market for foreign exchange among major financial centers may be milliseconds; the long run yesterday in the market for women's labor may have been decades.

No neoclassical economist, however, will want to leave the story of the pension plan in the first act, the lawyer's and legislator's act of laws "designed" to split the costs. She will want to go further in the drama. She will say: At the higher cost of labor the employers will hire fewer workers. In the second act the situation created by the law will begin to dissolve. At the old terms more workers will want to work than the employers wish to hire. Jostling queues will form outside the factory gates. The competition of the workers will drive down wages. By the end of the play a part of the "employer's" share—maybe even all of it—will sit on the workers themselves, in the form of lower wages. The intent of the law is frustrated, because what matters in neoclassical economics is actual incidence, not the legislative intent.

Thus in Chicago under Mayor Daley the elder when a tax on employment was proposed the reporters asked who would pay the tax. Alderman Thomas Keane (who later went to jail, though not for misappropriation of economics) declared that the City had been careful to draft the law so that only the employers paid it. "The City of Chicago," said Keane, "will never tax the working man." Thus too in 1987, when Senator Kennedy proposed a plan for workers and employers to share the cost of health insurance, the newspapers reported Kennedy as estimating "the overall cost at \$25 billion—\$20 billion paid by employers and \$5 billion by workers." Senator Kennedy will never tax the working man. The manager of employee relations at the U.S. Chamber of Commerce (who apparently agreed with Senator Kennedy's lawyerly analysis of where the tax would fall) said, "It is ridiculous to believe that every company . . . can afford to provide such a generous array of health care benefits." The U.S. Chamber of Commerce will never tax the company.

The ironies of the case illustrates the delight economists take in unforeseen consequences, a delight shared by other social scientists. It illustrates, too, the picking of a few consequences for special attention. An accountant or political scientist or institutionalist economist would want to hear how the 5 percent pension was funded, because the manner of funding could affect the behavior of politicians and businesspeople in the future. Neoclassical economists usually set such institutional consequences to the side. It illustrates also the way economists draw on typical scenes—the queues in front of the factory—and typical metaphors—workers as commodities to be bought and sold. Especially it illustrates the way stories support economic argument. Since Adam Smith and David Ricardo economists have been addicted to little analytic stories, called by Joseph Schumpeter "the Ricardian vice." The

economist muses, Yes, I see how the story starts; but I see dramatic possibilities here; I see how events will develop away from the situation given in the first act.

The rule of art is to push the analysis to the later acts of the play. For instance, a calculation by Peter Mathias and Patrick O'Brien (1976) of the tax burden in eighteenth-century Britain stopped in the first act. It reckoned ingeniously the *legal* incidence of the taxes, finding that the British government relied more than did the French on taxes imposed on things purchased by the poor—beer, for example. But in the next act a tax on beer could move away from where it was placed. True, a tax on beer in the first instance increases the price of beer to drinkers, many of whom are poor, unless the poor brew their own or drink untaxed beer purchased behind the shed. But it also *decreases* the price to brewers. (Economists speak expressively of taxes on goods inserting a “wedge” between what the makers get and what the buyers pay, the width of the wedge going to the government.) The lower price would cause a little exit from brewing, which would in turn—we are into the third or fourth act by now—somewhat reduce the rewards to land used for hops and buildings used for malting. The owners of land and buildings are rich, not poor, yet they are paying some of the tax nominally imposed on the poor man's drink.

The correct calculation of tax incidence may or may not reverse the merely legal incidence. It will reverse it if the legal bearer of the tax can easily exit from under it. Thus an Iowa corporation can easily exit from under an Iowan tax on corporate profits, and so Iowa cannot count on the tax falling on the owners of the corporation.

In general the ultimate, long-run incidence need have nothing to do with the legal, short-run incidence. That's a finding of neoclassical economics that can be applied immediately to historical taxes and subsidies. But this result goes deeper, since it is applicable to any local cost or benefit. The argument is for example the equitable basis for the property tax as the way of supporting local government expenditure. The net beneficiary of public expenditure on roads and schools is not the tenant. The tenant is willing to pay in higher rents exactly as much as the better schools or roads are worth to him. Competition assures that he will pay it over to the landlord in rent. The neoclassical economist suggests that in general the immobile input cannot escape taxes. But the immobile input also extracts all the benefits. The owners of land, therefore, collect the benefits from city expenditure and therefore should pay the taxes.

## ENTRY AND EXIT TO MISERY

Entry and exit drive all manner of historical argument. For instance, a serf who can run away is not much of a serf. In frontier areas, such as southern Russia in the eighteenth century, serfdom did not work well, because a serf could escape from Voronezh to Rostov and to the wild Cossack life. The internal frontiers of settled societies have a similar effect: town air makes one free. A serf who could exit, therefore, could not be exploited. Even if the place to which he exited was merely another manor, as was common in the European middle ages (Raftis 1964), the competition among manors helped. The exploitation from *de jure* serfdom—or *de jure* debt peonage or *de jure* slavery or *de jure* subordination to the great power of a capitalist mill owner—depends on the *de facto* immobility of the victim. A society able to impose internal passports, as in Russia until recently, in Japan until the Meiji Restoration, and in the United States, effectively, around the time of the Dred Scott decision—can pin people down and suppress competition for their services. Stories of exploitation depend on a lack of exit.

A story of exploitation, the neoclassical economist avers, should tell why exit did not work. Roger Ransom and Richard Sutch (1977) tell a story of the reenslavement of American freedmen after the Civil War by elites in charge of country stores. They argue that during the 1870s and 1880s the sharecroppers became peons in a system of rolling indebtedness. But the question is why the freedmen did not merely walk away. The answer is that sometimes they did, not to the Northern industrial cities, a later development, but to other counties beyond the reach of the sheriff, in the style of serfs disappearing from the rent rolls of one English manor to reappear on the rolls of another.

Of course the freedmen who fled from Washington to Jefferson County had not escaped to heaven. Conditions were bad in Jefferson County, too. Nothing in the argument says that American blacks were not damaged by their experience after the Civil War. It suggests merely that the powerful mechanism of oppression was not debt peonage. The powerful mechanism was directly political, it would seem: the hooded bands, and then the gradual reassertion of white political control in the South, the strange career of Jim Crow. The ability to walk put the freedman in a quite different position from a slave (as those so positioned said). A slave was subject to the oppression of his individual master. A freedman had to be oppressed by the entire community acting in con-

cert, a more difficult trick, though in fact accomplished. The story is radically different. It is not more optimistic, merely different.

A similar question can be asked about speedups in nineteenth-century factories (Lazonick and Brush 1985) or about owing one's soul to the company store in mining towns (Fishback 1992): where is the obstacle to exit? The economist will argue that the market pushes businesspeople back to normal behavior while it pushes them back to normal profits. As much as the wicked capitalist would like to exploit workers and earn more than normal profits, the market will tend to force him to conform to the average degree of nastiness. In the market the nice guys, to be sure, finish last. But so do unusually nasty guys, who find it hard to get employees and business partners.

It is for this reason that economists do not moralize about the behavior of people in markets. The journalistic way of telling a story about a successful business is to ask whether the success was achieved morally or not. The economic way, by contrast, asks about the conditions of entry and exit. The argument is that the conditions determine the results and have little to do with the character or culture of the people involved. Good or bad, the competition of other businesses is what matters to what happens.

The Ransom and Sutch argument about the freedman illustrates the entry side, too. They calculate that the owners of country stores earned high interest rates. This would suggest that the stores were profitable undertakings—profitable, that is, unless the high interest rates were merely offsets for the sharecroppers who did not pay back their loans at all, walking away to borrow in the next county next year. Other evidence suggests that country stores were in fact not especially profitable enterprises. They went out of business from time to time in the usual way and they did not increase in number. If the flowers were so rich and the nectar so ready for the taking it is odd that the bees did not prosper. In telling a story of high profitability sustained over a long time—the story of pawn shops in rural China or of Dutch conquests in the Spice Islands or of Venice serving as the hinge of Europe—the historian faces the question: why was there not competing entry? It is often an important question.

To ask why competitors did not enter, say, pawnbroking if the business was so exploitatively profitable is not to suppose that the entry will always work wonderfully well. Entry can after all be prevented, by governmental or private violence, or by private barriers to entry, such as secret knowledge of industrial technique. Abraham Darby, the inventor of coke smelting of iron, was able for decades to keep the secret that made

coke smelting profitable, the technique for casting the iron into thin-walled pots (Hyde 1977, 40–41). A company town in Maine around 1930 with its single wool mill may in fact have been a miserable place, because the company may in fact have been able to prevent people from exiting its grip. It is for a good reason that dictatorial governments turn the guns inward. The neoclassical logic of entry and exit merely directs attention to the facts of how such situations came to pass.

A fixation on entry and exit typifies neoclassical (and “Austrian”) economic narrative, and is not foreign to Marxists, either. Economic science was named “dismal” not because the scientists were dreary or the subject boring but because its earliest conclusions, based on consideration of entry, were dismally Malthusian. If the society permits free entry to the laboring classes by excessive births, then the laboring classes will never rise for long above subsistence, said the classical economists. The modern neoclassical economists are not so confident that the laws of motion of a capitalist society are this simple. But they agree with Malthus and Marx that entry and exit matter.

Entry and exit underlie most important arguments in neoclassical economics. The economist's belief in competition, for example, comes from a lively appreciation of entry and exit. A Chinese historian explains why in the modern Chinese textile industry no one could establish monopolies or, for that matter, suffer long from unprofitability:

Most cloth merchants were also money-changers or grain dealers, or both; they were thus in a position to close up shop without much hardship anytime they felt the profits were too low or the risks too high in the textile market. Furthermore, their high mobility permitted them to shift operations from one site to another with comparative ease. (Kang Chao quoted in Rawski 1989, 54)

Entry and exit is a way of telling a story, a drama with the classical unities. The hero can be the manufacturing of pots, the growing of rice, the teaching of children, the giving of protection. When the curtain comes down the rate of profit in all these activities has been driven back to normal.

#### AN EXAMPLE: ECONOMIC RENT AS A FAILURE OF ENTRY

Free entry and exit does not mean that profits need be identical and routinely normal everywhere in an industry. The olive grove next door to Cato's might have earned 10 percent rather than only 6 percent because

its land was better. Some farmers have better land than others, some have better technique, some are just smarter or harder working. Only routine land and routine technique earn the routine reward. As long as there is no way that the poor land can be made fertile and the poor technique made intelligent the lucky few will go on making high profits. The lucky few are protected from entry by their special fertility and intelligence.

The argument explains the wide variation in rents of land, which are in the economist's way of thinking pure profits. Land close to London or Peking earns high rents for its location. A good location, close to the consuming masses of the metropolis, is just a form of fertility. The rent falls as the land becomes less extraordinary in location. Finally, out in nineteenth-century Montana or Tsinghai at "the margin of cultivation" (beyond which the land is not worth cultivating at all, because it earns no profit), the rent is zero and the land is free for the taking. The gradient from Peking to wildest Tsinghai illustrates the economist's "theory of rent," a theory of permanently abnormal profit.

The theory of rent applies to more than land. It applies to slavery and serfdom, for example. When labor is scarce relative to land, the labor will earn "profits" above subsistence—in the way that bottom land earns profits above the cost of cultivation compared with the poorer and more remote land in the hills. If new labor cannot enter by birth or migration—which would drive down the "profit" to zero—then a man with a sword will form the idea of taking the labor. Abundant labor is not worth taking, which suggests why successful slavery is associated with labor scarcity, on the frontiers. The high wages of the white-settler colonies in America put the notion into the head of merchants and plantation owners to import white indentured servants and later, when these proved able to exit, African slaves (Galenson 1981, 1986). Only profits above normal attract the bees.

Neoclassical economics says in other words that people seek rents, which is more of their talk of "maximization." "Rents" mean to an economist "rewards to someone above what he could earn elsewhere." A nobleman earns rents by acquiring the favor of the king, getting a monopoly of playing cards or the County of Leicester. His pursuit of place may be taken as a typical example of "rent seeking." All manner of striving may be called "rent seeking." The ward heeler looking for a sinecure or the inventor looking for a cheaper way to make iron are both seeking rents, which is to say, seeking profits above normal. In the neoclassical fiction it is profit not love that makes the world go round.

The point of talking this way is to draw attention to the competition

for rents. A royal court is populated by rent seekers, each of whom cancels out the efforts of the others. If fresh rents are available from drilling into an underground lake of oil, many will do so. The many bees, as the neoclassical jargon has it, will "dissipate the rents." That is, so many people will be drilling into the oil that no one will make much money out of it.

The result has been called "the tragedy of the commons." Overfishing or overgrazing by people facing a common pool or a common field will ruin the catch and incidentally drive returns back to normal. The neoclassical economist points out that the play only reaches its last, tragic act if the resource cannot be owned. Ownership is justified, the economists note, by the evils of its absence. As William Bradford remarked in his *History of the Plymouth Plantation*, common ownership of land "was found to breed much confusion & discontent, and retard much employment that would have been to their benefite and conforte" (Bogart and Thompson 1929, 5). And so the Pilgrim fathers abandoned common ownership in favor of private property. Buffalo were exterminated, to be replaced on the Great Plains by European cattle ill adapted to the environment, because no one owned them.

Beyond ownership there is the common sense of a small group. If the group is too large, as Mancur Olson points out in one of the founding volumes of the new political economy (Olson 1965), collective action to prevent the tragedy of overuse may be impossible. But if it is small then various punishments can easily be arranged for those who defect from the social good—or social bad, for as Olson also points out the same logic of collective action applies to forming monopolies against the public interest. In actual fact the tragedy of the commons is averted by collective action as much as by private property (Feeny et al. 1990).

Rent seeking is the life of capitalism—and when you come to think of it, of aristocracy, too. It is the reason for striving for gains, and the reason for the good that comes of it:

By directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, and in many other cases, led by an invisible hand to promote an end which was no part of his intention. . . . By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. (Smith 1937 [1776], 423)

Marx believed that rent seeking would end in the death of capitalism. The neoclassicals agree, if the rents attract the bees in the wrong direc-

tion. If institutions are such that people are attracted into *useless* rent seeking (the court of the French kings from Louis XIV being the classic case, designed for just this purpose), seeking monopolies and other obstructions to trade, the energies of society can be dissipated along with the rents. The modern case in point is the American federal income tax, which economists know as the Tax Accountant's and Lawyer's Welfare Act.

The theory of rent, in short, is a powerful tool, derived from the neo-classical economist's notion that people choose what is best for them. It explains differential rents and the consequences of pursuing them. And it goes further. Consider that renters of something to be used commercially, such as agricultural land, will pay what they can earn from it. Why? Because if they do not other people will spring forward gladly to pay a trifle less. Competition assures it. (The competition does not have to be some fantastic ruck of millions in order to work; two buyers of land are enough, if they can't find a way of conspiring together.) The thing to be rented can be a slave or a patent or an acre of land. A farmer renting land will be willing to pay more rent to the landlord if the land improves in profitability. The result is that the owners of the land, not the farmers renting from landowners, get the benefit from an improvement.

Some historical insight follows at once. If leases of land are short, improvement needs to come from the landlord, as in England in the nineteenth century on rack-rented land. A similar issue arose in Ireland at the time, the issue being whether tenants should be compensated for improvements to the land, such as ditching and fencing. If they were not compensated (and in fact they were not), the landlord theoretically could evict them and get a higher rent from a new tenant for the land improved by the late tenants' money and sweat. Realizing this the tenants would be reluctant to invest in improvements. Without long leases and fixed rents, it is said, improvements were ignored and Irish agriculture in the late nineteenth century decayed. Barbara Solow, however, argues that the tenants had virtual security of tenure. Though leases were officially annual, they were routinely renewed, providing the same incentives as owner-occupation to improve the land (Solow 1971).

The benefit from canals built in Ohio in the early nineteenth century looks at first impossible to measure. The benefit to the canal companies themselves may be known, because the accounts have survived. But the accounting is incomplete (an economic analysis starts and often finishes with accounting). What of the benefits to the people of Ohio, from lower costs of transport? It appears that one would need to know how much

the costs fell and how much was transported. That is, one would need detailed statistics, which do not exist, on how much was carried on the canals. But in "Social Returns from Public Transport Investment: A Case Study of the Ohio Canal" (1970) Roger Ransom uses the theory of rent to measure the benefit indirectly. He reasons that lower costs of transport would have raised the rent that farmers were willing to pay for land close to a new canal. The price of land would therefore have risen. By examining the prices of a sample of land before and after the canals Ransom is able to estimate the elusive social returns.

The theory of rent allows the measurement of the apparently unmeasurable, providing the historian with a sensitive index of local improvements in law enforcement, transportation, crop varieties, irrigation, or whatever. The index that measures all these things is the rise in the rewards to immobile inputs, especially rents on land. The landlord in the first instance gets it all, and so land rents are a good, and neglected, historical source on improvements.

Similar notions have been applied to the benefit from English enclosures in the eighteenth century (McCloskey 1972), to American slavery (Yasuba 1961), to African slavery (Thomas and Bean 1974; Gemery and Hogendorn 1974), and to many other matters. The owners of immobile resources such as land or slaves or urban building sites are the sole beneficiaries of improvements that increase their desirability. The desirability can be measured from their benefit.

The economist's favorite argument, then, is Darwinian. Entry and exit to a market play the role of natural selection. The horse is the best horse he can be, because if he was not his ancestors would have changed by natural selection until he was. The hippologist can then "explain" the modern horse, which is to say, give a story satisfying to us about how horses came to walk on their toenails. The reasoning is backward looking, showing how what actually happened is natural. It is the commonest device of historical writing, to show how the events leading up to World War I or to the partition of India were natural (after all, they happened). Likewise one can base an economic story on a premise that American oil regulation (Libecap 1984) or the choice of tenure in the South (Reid 1973) was natural.

There is little harm in this so long as it is recognized as a convention of storytelling. The talk of "preconditions" for economic growth or "continuity" in history generally (on these see Gerschenkron 1962, 1968; McCloskey 1987a) or "modeling" economic behavior is harmless so long as it is understood to suggest merely that we should hunt for the con-



nections among things, especially among earlier and later things. True, such talk flirts with vacuity, a hazard of determinism. Tellers of stories about economic development will offer "models" that abstract a particular piece of history. The phrase "Urbanization leads to industrialization," for instance (marked by the gnomish present) has a scientific air. But it is false, as the cases of Lancashire and the Netherlands suggest, or vacuous, if a mill site is always reckoned "urban."

Historians sometimes imagine that economics can provide "models" in the sense of typical patterns that apply to all history. But a chronological pattern that Karl Marx or Ester Boserup or Walt Rostow believed they discerned in the past, useful though it may be, is not the most useful economics for historical scholars. The most useful will change the metaphors and other conventions with which historians tell stories. Neoclassical economics can provide, in a word, another and more self-conscious rhetoric for history (Megill and McCloskey 1987).

#### AN APPLICATION OF ENTRY AND EXIT TO PRICE STATISTICS

A historian imbued with economic rhetoric, then, would tell stories of failure by recourse to unprofitability more than to cultural flaws; she would replace metaphors of "growth" with metaphors of "profitability" and "entry"; she would portray unusually bad or good conditions as being on their way to normality; she would discipline her judgments about exploitation by considerations of entry and exit; and she would make use of the fruitful if deterministic myth of efficiency to explain how institutions arose.

Here is a more elaborate example, a showing of how the economist's rhetoric of entry and exit can tell a better story. It is not chosen as transcendently important, but merely as an example in detail of why thinking neoclassically is worth the historian's time.

The raw economic fact we know in greatest bulk about any economy is price. Though not collected and indexed (in either the mathematical or the bibliographical sense of the word), prices in ancient Mesopotamia can be collected from tablets in unlimited quantities, given peace in Iraq and a large enough budget for excavation. Medieval Europe (that non-market economy) has prices of grain, labor, grazing rights, bail bonds, beer, oxen, land, wives, husbands, manors, ecclesiastical benefices, kingdoms, and eternal salvation from the tenth century in rising volume, to be retrieved from manorial accounts, cathedral records, and the letters

of Italian merchants. China is particularly well endowed with such records. From times of famine there survive market quotations even for human flesh.

Prices are fundamental to market economies, and telling. The difference between the price of wheat in exporting Poland and importing Venice from the fifteenth to the eighteenth century tells of falling transport costs (Braudel and Spooner 1967). The real wage in England from the thirteenth to the twentieth century, a ratio of two prices (Phelps-Brown and Hopkins 1956), tells of rising human rewards.

The noneconomic way of using these riches is typified in the *Annales* school, which treats price as the pulse of the economy. A pulse rate seems a natural metaphor to a noneconomist.

A neoclassical economist sees different ways to use the prices. The primary sources for prices are commonly quotations as specific as a particular day—for instance, a sale of six quarters of barley from the manorial grange of Great Durnford, Wiltshire on Ladyday 1334—but most historians will present them as part of a yearly average. The rise and fall of grain prices *from month to month*, for example, is not of much interest to an *annaliste* in pursuit of *la longue durée*. The yearly average is the right treatment if daily or monthly figures have no use. But they do, as follows.

One may ask what the pattern of grain prices during the year was and what explains it. (The Baconian way of putting it is misleading because, as is common in scholarship, scanning of the data was *not* how the argument was discovered.) Consider for example James Lee's work on eighteenth-century prices of rice in his (1993) study of Southwest China. He kept the monthly detail because the official statistics from which he works were in lunar months. In Lijiang prefecture in Yunnan province average monthly prices (in taels of silver per shi of white rice) moved like this over the twelve months:

Month	1	2	3	4	5	6
Price	1.97	1.95	2.01	2.09	2.10	1.99
Month	7	8	9	10	11	12
Price	2.24	2.21	2.06	2.08	2.12	1.91

The price is lowest in month 12, rising more or less steadily to a peak in month 7. The nineteen other prefectures recorded in Lee's study show the same pattern. The twelfth month always has the lowest price, sub-

stantially lower than the months before or after. The seventh month or sometimes the eighth has the highest price.

What is happening? Plainly, rice is being harvested in month 12 (a late variety, it seems), making rice on average abundant and driving down its price. Probably an earlier-ripening variety is being harvested in month 9, breaking the peak. (This is deduced entirely from the price statistics, without knowledge of Chinese agriculture; the pattern in neighboring Kweichow province is the same but unfolded a month or so earlier: was Kweichow differently favored by climate?)

So far we have learned what we already might have known from non-quantitative sources about the agricultural year in Southwest China. Month 12 was the harvest. If neoclassical economics could offer no more than routine confirmations of what we already knew then the historian could safely ignore it.

But watch the entry and exit, and the tale it tells. Rice could be stored, which is to say that it could be "transported" from month 6, say, to month 7. That is, an owner of rice in month 6 could *enter* the market in month 7 (by storing rice bought in month 6 and then waiting a month) and would do so if he believed the price in 7 was going to be far above that in 6. Consequently, if storage were costless (contrary to fact) there could be no persistent and predictable difference between prices in month 6 and month 7. A flat price from month to month is a neoclassical implication of costless entry.

Yet there was in fact a persistent difference. The price was not flat. Apparently therefore entry was *not* costless. To put it the other way, apparently storage *was* costly. No wonder. There would be the cost of the jars and buildings to hold it, the guards to keep it safe, depreciation of its quality during storage. Call these  $d$  per month, still unknown. Additionally, to store a quantity of rice for a month required the tying up of funds. The funds could have been invested at some interest rate in projects of money lending or paddy making, at say  $i$  per month. The economy does not need to be thoroughly capitalistic for alternative investments to be possible and to yield a return. Crusoe could build pens for goats or build a canoe to escape, and each had its "internal rate of return" to be compared with each other in a world of scarce effort. So the economist's accounting says this: the monthly cost of doing the storage instead of some other moneymaking project is both the ordinary storage age cost and the cost of interest forgone. It is  $d+i$ .

Now use the logic of entry and exit. If the actual growth of price per month had exceeded this  $d+i$  then new storers of rice would have entered

the business. Focus for example on month 12 (the big harvest and the low point) and month 7 of the next calendar year (the month just before the first harvest, the high point). Suppose that in a particular month 12 the grain dealers expect the month 7 will have an unusually high price. The weather is expected to be poor or the politics disrupted. If the dealers try to get more rice in month 12, taking advantage of what they believe will be an opportunity for profit from resale when month 7 arrives, the price will in fact rise immediately in month 12. Later, in month 7, when the dealers sell the twelfth-month rice the price will fall, since more will be supplied. In other words, entry to the profitable business of storing grain will cause the price to rise in month 12 and fall in month 7. The growth in price from 12 to 7 will be lower than it was before entry. That is, it will be forced down toward the normal differential, the normal cost of "transporting" rice across months,  $d+i$  per month.

Entry therefore governs the growth of prices, ensuring that on average (and only on average) no abnormal profits above costs can be earned by storing rice. The effect of exit is symmetrical. If the actual growth in prices is not expected to compensate people for holding rice at a monthly cost of  $d+i$ , then people will exit from the storage business, twisting the prices the other way. The equilibrium, or normal, price differential just pays for the normally expected costs. At such rewards no one exits or enters. The nectar is exhausted.

In other words, the actual rise in price (averaged over a series of years to eliminate extraneous disturbances) measures  $d+i$ . That is, the whole cost of storage can be measured from the price statistics. This is the payoff. An economic metaphor extracts meaning from an unused source.

The calculations are simple. In the case of Lijiang prefecture the cost is  $2.24 - 1.91 = 0.33$  taels per shi over seven months, or a rise of  $.33/7 = 0.047$  taels per shi over a single month. Taking the midpoint  $([2.24 + 1.91]/2 = 2.075)$  as the typical price per shi, the monthly increase is typically  $0.047/2.075 = 2.27$  percent per month. The price of rice goes up at about 2.25 percent per month between harvests on account of the full costliness of storage.

In southern England during the thirteenth and fourteenth centuries the rate of rise for wheat was similar, and for inferior grains it was higher (McCloskey and Nash 1984). The wheat estimate, based on 1,075 pairs of dated prices, is about 2.5 percent per month. A sum growing at 2.5 percent per month will grow by 34 percent a year (the figure for Lijiang implies 31 percent per year).

All this is to say that the cost of storage for a year in medieval England

and eighteenth-century China was about a third of the crop. It is therefore unsurprising that storage was inadequate to prevent famine in England until the seventeenth century, and that in China only extraordinary governmental intervention and great stores of grain could prevent it.

The technique can be used, further, to tell of storage costs over time. In England they fell sharply in the sixteenth century. Since barns did not improve much (and the cost of keeping grain, *d*, therefore did not change) the fall must have come from the other component, the interest rate. The interest rate fell by the sixteenth century to a half of its medieval level.

Noneconomists think of interest as one tiny item in their bank account. Economists think of it as permeating the economy. Interest is the price at which present resources are exchanged for future resources. You lend \$100 this year and get \$110 back next year. A dollar's worth of resources this year is worth \$1.10 next year, expressing both the impatience for seizing the fruit now and the productivity of waiting until it ripens. Every decision that involves the future will involve the rate of interest. (This is true whether or not the economy is capitalistic, or even monetary. Impatience and the productivity of waiting, as in Crusoe's case, are not uniquely capitalistic or monetary.) Because the interest rate in America was higher, the American railways were built more flimsily than British railways. In countries with a history of higher interest rates, veal is more common than beef. Tying up one's money in a growing steer is a poor project if other projects yield especially high returns.

Falling interest rates from medieval to early modern times, detected in the neglected statistics of monthly movements of grain prices, can account for all manner of changes, from greater investment in agriculture to a longer perspective on the future. The fall can be confirmed in other prices that reflect interest rates, such as the relationship between the prices of wool and mutton and the prices of hay, shepherds, and land; or in the relationship between animal products and the prices of the animals (see again McCloskey and Nash 1984; Clark 1988, 1992). The logic of entry and exit applied to otherwise useless statistics on prices can give a technique for measuring interest rates, watching them fall on the eve of modern economic growth. It is a way of telling a new story.

#### TESTING RATIONALITY, SECOND-GUESSING THE FARMERS

Someone not socialized within economics will worry that such a technique (and all neoclassical economic techniques run this way) "assumes

rationality" in choice. He is accustomed to dealing with complicated and confusing choices. To reduce the humans in the rice market to single-minded seekers after profit does not seem to accord with common sense.

It does not. We see ourselves failing every day to make the best decision about which food to buy or whether to change jobs. Considering that most of us wander in a fog of indecision and emotion the bright sunlight in which the rational man strides toward his goal is difficult to credit.

Various replies are possible. The "rationality" in question means the "sensible apportioning of means to ends." It is another word for the pursuit of profit, defined broadly. The economist does not mean anything very deep by asserting that people behave rationally. He means something like "approximately calculating." Rationality depends on circumstances. Someone who rushed out into the street in Iowa City in a non-revolutionary year, such as the present, waving his hands and shouting "Overthrow the government!" would rightly be considered irrational, a bad calculator. His means would be poorly adjusted to his announced ends. On the other hand, different circumstances might make the identical action thoroughly rational: Petrograd in late October 1917, for instance.

The amount of light needed for rationality is easy to exaggerate. An English farmer choosing a reaping machine (David 1971) did not need detailed engineering specifications for each of the dozens of machines available in order to make up his mind to buy. Nor did he need perfect foresight about the future price of harvest labor. A crude decision is rational if information to make a more subtle one is expensive. If it were profitable to do so the market itself would make available some of the information, with catalogues and commercial travelers. The decision-maker here was not a consumer making many little decisions about toothpaste and tea; he was a producer making a few decisions about what big machine to buy, decisions on which his livelihood depended. Such a man would have every incentive to think clearly.

The clarity, furthermore, need characterize only some of the decisionmakers. Most could have been lumpish and driven by habit, letting their livelier cousins show the way. The point is not wholly one of imitation. The great entrepreneur, of course, can influence thousands to emulate his trick. He can also persuade them to absurdities, such as gold mines in Louisiana or machines for perpetual motion. But the sober, firm pressure of the invisible hand is at work, too. The price of bread is determined by the cheapest source that can make enough money to stay in

business, not by the average. This is what economists mean when they talk about the importance of "the margin." It is the tiny, cutting edge of profitable participation, not the sluggish majority, that sets the price. The majority has to be there, in the background. But the last player calls the tune.

Now of course many decisions are wholly private, shielded from the scorn or competition of the neighborhood. These can persist as irrational. It may be irrational to put one's trousers on both feet at once, but some people do it. When Ouija boards or tarot cards are used to make important economic decisions, however, they will do badly against more rational methods. Rational methods have survival value, even for the least prosperous. A peasant near starvation will seek any comfort he can get, through a diverse crop or through the village wizard. But if he makes a mistake, by trusting the wizard (or the local econometrician, for that matter) beyond reason, he will die. In the backwaters of an economy and in good weather life can go on without troubling overmuch about its rationality; in the main channel at tempest's height the currents of rationality run strong. (And yet it is reported that 10 percent of French companies make some use of astrologers.)

Above all the assumption of rationality can be tested. It is not an assumption removed from scrutiny. Indeed, if the leading question in historical economics to date had to be put in one sentence it would be, how well does the assumption of close calculation fit the economic past? The answer has been, pretty well; at any rate better than earlier students of the matter have believed.

In other words, the assumption of rationality in economics is not an axiom in the Euclidean sense, an indubitable premise from which irrefutable conclusions can be drawn. It serves merely as a working proposition, subject to testing and revision to suit the case at hand.

It is, to say it again, a way of telling a story. Economics looks from the outside a deductive field, filled with words like "therefore" and "suppose," an instance of the deductive certitude that Western intellectuals have pursued since Plato. But for practical purposes the deductive chains of reasoning in economics are short, beginning and ending with links of fact. Think of grain storage. An economic argument is mistaken or irrelevant most usually because it got the facts wrong. The objection that economics "assumes" or "postulates" rationality is naive. The facts can speak to the assumption.

For example, one can test the rationality of British businessmen in the late nineteenth century (Sandberg and McCloskey 1971) or of Chinese

peasants on the lower Yangtze in the early twentieth century (Bell 1992), by second-guessing. Putting oneself in the position of the businessman or peasant, one can ask whether the decision made to spurn ring spinning or to adopt sericulture was sound. In the British and Chinese cases the rationality itself is of historical interest: once rationality has been established all manner of storytelling follows.

One must, however, second-guess intelligently. The economist like the historian needs some of the knack of the novelist in getting inside other people's decisions. The retrospective accounting again is crucial. It will not help in understanding the situation of British business in 1910 to imagine what the decisions would have been with perfect foresight. A businessman in 1910 who could anticipate the decline in demand for British cotton textiles that would occur by 1925 would not have invested in any spinning machinery at all, whether modern ring spinning or old-fashioned mule. But no one in 1910 could reasonably have anticipated the catastrophes of 1925 (after all, many wise politicians and princes did not). To be useful for understanding business decisions the accounting must look forward from the perspective of 1910.

The "irony of history" is of course a legitimate theme, and economics can help make the joke stick. It was surely an irony of history that building new British blast furnaces or cotton mills in 1910, whatever the technology, turned out to be a terrible idea, considering the business slump lasting in those industries from 1920 virtually down to the Second World War. Economic accounting of profit and loss can measure how terrible. That history has many cunning passages and contrived corridors, however, does not justify scorning its victims. That economic actors make mistakes does not mean necessarily that they were irrational to make them.

Second-guessing children and fools is easier than second-guessing adults with an incentive to decide intelligently and with the mental equipment to do so. We do not expect Iowa farmers with advanced degrees in agronomy to make decisions about soil conservation that the average newspaper columnist could profitably second-guess. The American Question is relevant here as elsewhere in historiography: If you're so smart why aren't you rich? The historian who spends his time refighting Grant's battles better than Grant himself is not telling us much about Grant or about battles, a point made about battle history by Keegan (1977, 75).

Chinese farmers, to take an economic case, were not wholly uneducated (30 percent of males were literate around 1930 [Buck 1930]) and gave other signs of being able to respond quickly to incentives. One therefore doubts Han-seng Chen's argument that in North China the peas-

ants did not choose rationally to cultivate tobacco, which, according to Chen, "certainly reduced the standard of living among the peasantry of the tobacco regions" (1939, 85). What is at stake here is the sensible disposition of family labor, "penny capitalism" (as the anthropologist Sol Tax once put it). Perhaps the better word is "prudence." There is no reason to suppose that farmers would not have done it right. One doubts the result because so many others have found farmers of all types, "peasant" or not, to be rational (Helleiner 1975; Popkin 1979). The peasant who indulges a taste for bad old ways or for meritless novelties pays at harvest time.

Explaining modernity in the economy depends on what came before. If human character changed in the sixteenth century, if the Protestant ethic was important to the spirit of capitalism, or if

[it was a] utopian endeavor of economic liberalism to set up a self-regulating market system (29) . . . market economy is an institutional structure which, as we all too easily forget, has been present at no time except our own (37). . . . In no case can we assume the functioning of market laws unless a self-regulating market is shown to exist (38). . . . The alleged propensity of man to truck, barter, and exchange is almost entirely apocryphal (44). . . . Local markets proper are of little consequence (58). . . . Individual acts of "truck, barter, and exchange" are only exceptionally practiced in primitive society (274). . . . The countryside was cut out of trade in the Middle Ages (277), (Polanyi 1944)

it would be easy to believe in irrationality.

But a world in which neoclassical economics is supposed *not* to work at all would be a paradise for the stray wise man. In such a world there would be unclaimed profits everywhere, as for example from making land private (a good example of this sort of reasoning is Cohen and Weitzman 1975). An economy filled with people as irrational as some historians have believed, under the baleful influence of Karl Polanyi and A. V. Chayanov and James C. Scott, would be filled with opportunities to buy low from one set of fools in order to sell high to another.

Such a view, I would say, does not treat the dead with due respect. It entails assuming that our ancestors were heedless and, if asked, would not prefer a little more bread to a little less. If true it provides a program for research in history. The second-guessing ought to be easy in such an economy, because the mistakes would be so egregious. They would compound one another, the foolishness of peasants allowing the lords to engage in still greater foolishness. The world imagined by one strand of historical opinion—against that of medievalists such as David Herlihy or

Ambrose Raftis, for example—would be a paradise for professors of history, who would be able to spot opportunities better than the people at the time. They would be in the position of Addison: "Thus I live in the world rather as a SPECTATOR of mankind than as one of the species. . . . I am very well versed in the theory of a husband or a father, and can discern the errors in the economy, business, and diversion of others better than those engaged in them."

## SUBSTITUTING THE FACTORS OF PRODUCTION

The respectful second-guessing of economic actors often involves the notion of "factor substitution." "Factor" is the economic jargon for inputs—the land, labor, machines, and materials used up to satisfy human demands. The ultimate factors of production are land, labor, and capital, from which everything else is made. But in dealing with something less than the ultimate it is reasonable to speak of materials, fertilizer, lumber, and coal as factors, too. One factor can substitute for another. America in the nineteenth century, for example, substituted abundant land for men and machines. Americans making guns used machines that made gun stocks quickly, saving labor, but were notably wasteful of wood. Americans had wood to burn from their lands in forest, but no labor to waste. British gun makers carved the stocks by hand, since wood was expensive in Europe relative to skilled labor. Again the economics comes down to a choice under constraints.

The crucial deduction is that nations or regions can have different ways of doing something without either being worse. The constraints differ. It is no evidence of American vigor to mention the gun stocks and to talk of Yankee ingenuity in "saving labor." The Americans were merely trading off cheap wood for expensive labor, as any profit-making business would do, in South Asia or south Connecticut. The British making gun stocks by their own, labor-intensive methods were being no less businesslike. They were as vigorous in saving wood as the Americans were in saving labor. One region can of course be uniformly more vigorous or intelligent or educated or capitalistic or up-to-date than another. The big differences in productivity between countries and historically is testimony to "higher production functions," as the economists say. But commonly the evidence for vigor will be mixed with evidence for merely rational substitutions, doing what one can do best. In the jargon, two regions can have "the same production function," or book of recipes, yet choose differing "factor proportions."

It is sometimes argued, for example, that low wages imply a low incentive to adopt labor-saving innovations. Strictly this is true: if labor is relatively the abundant factor, it would be irrational to substitute away from it. But what is often meant is that low wages reduce the incentive to do better *on balance, overall*. In the neoclassical way of thinking, and historically, it is false. Someone who thinks otherwise has to explain why people would not act rationally, or why China was the world leader in technology around the year 1000. A dollar saved is a dollar earned, regardless of whether the saving comes from a factor in large or small supply. That labor was cheap in eleventh-century Yorkshire was no disincentive to adopt the windmill, which saved labor and oxen, too. What cheap labor does discourage is the substitution of an expensive piece of capital equipment for a cheap gang of laborers—but that is good, not bad, if labor is so very cheap. One does not want a nation investing in modern steel mills when backyard furnaces, under the constraints that the nation faces, are a better choice.

Historically speaking the notion that low wages lead to low innovation is doubtful. For all its energetic pursuit of novelty the United States had fewer innovations to its credit than low-wage Europe in the nineteenth century. Japan developed through low wages, as did Belgium and the Netherlands.

### THE DISTASTE FOR RISK

In its very simplest form the “assumption” of rationality amounts to saying that people pursue average profit alone. To put it in the quaint jargon of economics, the “utility” of people is supposed to be a function of dollars alone. If mere dollars account for investment in slaves in the American South (note the image of “accounting” here again), without adding in the alleged benefits from a feudal social position as a slave owner or from the sexual exploitation of the slaves, then the historian is justified in drawing the inference that slave owners were businesslike (Conrad and Meyer 1958).

This simplest of “utility functions” will often fail. Yet often the failure itself speaks. An example is the return from landed estates in England during the eighteenth century. If land were merely another asset, with no social and political consequences to its ownership, then entry and exit would force its return into equality with government bonds, which earned 5 percent. But land in large estates in fact earned only 3 percent

per year, because with large estates came social status and political power. The businesslike accounting reveals the 2 percent per year that the landed class was prepared to pay to maintain its privilege. “Irrationality” by a strict business definition leaves measurable footprints in the snow of rationality.

One important item that would make average income a poor description of why people did things is risk. Peasants in North Africa have proven suspicious of new high-yield wheats; but their suspicion has turned out to be justified by the greater *variability* of yields from the new seeds. In a world of less than perfect insurance it is not irrational to seek a safe income as well as a high average income. Philip Huang (1990) argues persuasively that cotton was a risky crop in northern China, and *therefore* earned high average returns.

The logic of entry and exit is at work again. If cotton was risky without a compensating benefit from a higher average return, no one would grow it. Since it was in fact grown, the growers must have had a two-item utility function, getting pleasure from a lower variability of return around the average as well as from the average itself.

An example of using the two-item utility function historically is the explanation of scattered farms. In Europe, India, Latin America, China, and in most farming communities long ago few farms were perfectly consolidated. They were inconveniently scattered in little plots, which is to say that some output on average was lost. The neoclassical economist looking at such a system instantly thinks of “portfolio balance” (and in different language anthropologists have thought similar thoughts, trained as they are to see rationality in apparently outlandish behavior). They turn over in their minds an image of medieval peasants as mutual funds, holding dry land and wet as the Dreyfus Fund holds General Motors and Raytheon. In the medieval English case it can be shown in fact that the number of plots was about right to achieve safety first, which starving peasants might well think a good thing (McCloskey 1989).

### THE TASTES OF HOUSEHOLDERS

The complicating of the utility function leads finally to one containing average income, variance of income, *and tastes*. Thus an “irrationally” conservative peasant, whose degree of scattering could not even be explained by the insuring effect, would have to be portrayed as having a “taste” for holding onto ancestral land, perhaps, or indulging in equi-

table inheritance practices. At this point the idea of a utility function stops being refutable. That is no shame. It can still be a persuasive way to tell a story, a device of orderly accounting.

Economists use a governing metaphor of the household as a little business. As the economist George Stigler remarked ironically, "It would of course be bizarre to look upon the typical family—that complex mixture of love, convenience, and frustration—as a business enterprise. Therefore economists have devoted much skill and ingenuity to elaborating this approach" (1966, 21). Thus do economists enrich their stories of one market by comparing it with another: the household as an "enterprise"; the "market" for "human capital"; the "industry" of crime.

To have one utility function, though, does force an assumption about household governance. The most routine kind of neoclassical economics, to be sure, holds that The Household is one unified decisionmaker. Inside the household, in other words, someone is king (more rarely queen), or else all parties in the household miraculously agree on every choice. A historian who wants to get inside the household will often find she has to go further, allowing for non-agreement. But there is nothing to prevent an analysis of conflict inside the household, and in fact neoclassical game theory permits something like this (McElroy and Horney 1981).

The neoclassical economist sees the historical shift out of home production as a matter of choice in the presence of markets, that is, a matter of profitability. The spinning and weaving and sewing that occupied such blocks of female time in the eighteenth century moved into the market by stages in the nineteenth century in Europe and its offshoots, just as food preparation moved into the market in the middle of the twentieth century, and child care late in the century. Readymade clothes and processed food radically altered the little factory of the home, altering the status of women for better and for worse inside marriage and outside.

The economist's idea of the consumer suggests that the word "need" is not needed. One means by "need" that which is insensitive to price. At any price, one needs oxygen. But most choices are not matters of need. The peasant "needs" food but does not need the particular bundle of food he acquires. The needfulness explains why he tramps to the field each morning but does not explain the fine detail of his behavior. It is the latter that is in need of illumination. Economics claims that most things *are* sensitive to the price charged for them, that if white bread is more expensive to make than black, black bread will be the peasant's fare.

Certain associated ideas fall when need does. For example, "surplus" does not make sense without a need. To say that the Greeks exported olive oil because it was "surplus" in Greece is a non-neoclassical way of speaking. In the opinion of neoclassicals it does not lead to interesting questions. The economist would say that the Greeks exported olive oil because Greece was an inexpensive source of it relative to its competitors; and that the price of olive oil (relative to wheat) that faced Greek merchants was high enough to entice the Greeks into the sale. The inquiry proceeds along these lines. The neoclassical talk leads to more history, not less.

## SUPPLY AND DEMAND

The consumer is the ultimate demander. So on one side stand the suppliers (ultimately the factors of production), and on the other side the demanders. The exemplar of economic analysis is of course this very situation, supply and demand. An economist, it is said, is a parrot taught to answer any question with "Supply and demand! Supply and demand!" The mere phrase in truth does a lot of work of an accounting sort.

For instance, it affirms that the quantity sold and the price of, say, cotton textiles in New England from 1815 to 1860 were determined not by bargaining or conspiracy or class power but by competition in an anonymous market, that is, by supply and demand (what follows is a summary of Zevin 1971). For better or worse, no one intended the price; no one was to blame. So the theory says. According to the neoclassical economist's way of talking it was no central plan that caused the quantity of American cotton textiles to rise by a factor of 363 and the price to fall by 75 percent between 1815 and 1860. The outcome was the sum of individual predictions, ambitions, and failures; in a word, choice under market constraints.

A more definite version of the theory will talk of supply-and-demand curves moving out and in. The geometry is attractive to economists, and its beauties explain much of their enthusiasm for the argument. Since the price of cotton textiles from 1815 to 1860 fell relative to other goods, and the demand for cotton textiles certainly moved out, the supply curve must have moved out even faster. An outward-moving supply curve means simply that a given quantity of cotton textiles could be offered at a lower price, the sort of lower price that comes from better ways of making the textiles. The theory draws attention to the possible reasons that a supply curve can move out, such as the cheapening of raw cotton and

the mechanization of weaving. The theory draws attention to possible reasons, such as rises in the incomes of Americans, the cheapening of transport costs (by those same Ohio canals, for instance), and the substitution of American for British cloth. The commonest use of supply and demand is this: to give the historian an orderly list of factors fixing quantities and prices. The list will vary with the product and the date, but again the mere idea of the list will discipline the history.

A still more definite and complex version of the theory will give quantitative weights to the supply-and-demand curves, as did Robert Brooke Zevin in his essay on the production of cotton textiles after 1815 (1971). The theory needs first to be put in algebraic form, in order to accept numbers from the historical record that express how much the rise of income affected demand or how much the fall in raw cotton prices affected supply. Zevin did this, concluding from the calculations that expansions of demand more than supply caused output to grow, especially in the first decade; that four-fifths of the fall in price was caused by technological progress (the outward movement of the supply curve), especially again in the early years; and that the initial disturbances to the industry smoothed out by the 1830s. Supply and demand at its most concrete provides a narrative framework for the history of an industry.

### THE GENERAL EQUILIBRIUM OF ALL MARKETS

The final neoclassical idea I want to mention here is that the markets reflecting and altering individual choices are all *connected*. The thought is a commonplace: No man is an island, entire of itself. The men and women are one economy, one general equilibrium of markets. If you think of the history of a single industry as the outcome of competition in an anonymous market it is natural to think of an entire economy as a collection of such industries. Says the neoclassical economist, and for that matter every other kind of economist, this point being almost a defining doctrine of the economic conversation, everything depends on everything else. Such a point does not make the *partial* equilibrium analysis of single markets or single decisions wrong. Sometimes it is not worthwhile including all the indirect effects through markets remote from the one in question. But sometimes it is.

Looked at from a great height the participants in an economy are all households, all families from emperor to coolie. From a nineteenth-century liberal point of view the utility of households is the *raison d'être*

for the economy—this in contrast to a corporatist view, medieval or modern, which elevates the company, the group, the nation, or the race to the position of honor.

An economist (and again most schools of economics would agree) holds the Wheel of Wealth, shown in Figure 11, constantly before his mind:

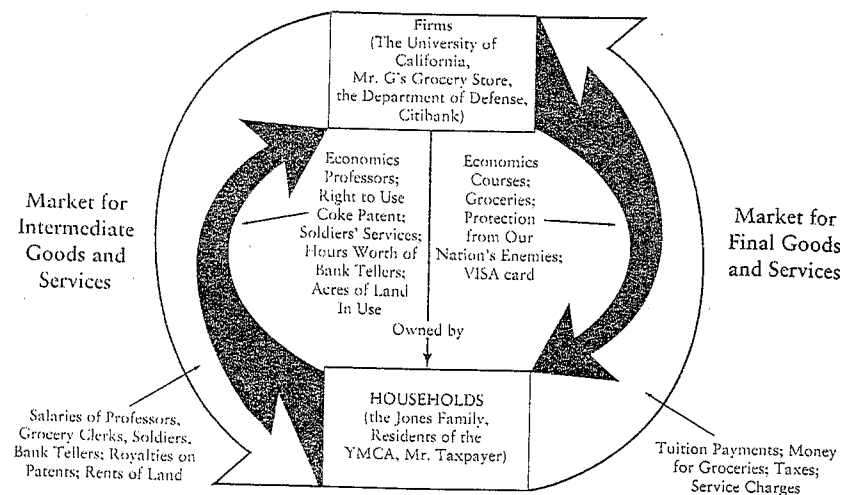
Consumers buy goods (and, always, services too: the notion that services are not real products is from the neoclassical point of view bad accounting, present to this day in left-wing thought). They buy them from firms in the “goods market,” which might be a literal place, like the *mercato centrale* in an Italian town, but as was noted earlier is not necessarily so. Households purchase rice in the market even when the sellers are as varied as official market stalls and one’s country uncle down the Delhi Road. Competition and substitutability make it one market. If a sufficient number of consumers can move from one outlet to another they will keep the price more or less unified within the market. Entry and exit will work again. In the unusually densely settled parts of northwestern Europe or lowland China or North India during recent centuries the variety of sellers available to most customers made for competition—never literally perfect but always present. The density of competition kept prices close to each other, at any rate by international standards.

On the other side of the wheel of wealth is the “factor market,” which is to say the market in which households sell their labor and land and capital to the firms. A factor of production, I have noted, is something used to make something else. Economists take the view that some factors are more basic than others, that ultimately a lump of coal or a piece of financial advice is produced with labor or land or capital. Such a distinction is not written in the stars. Even labor itself is produced ultimately, one might say, by rice for food and by roofing tiles for shelter. One could cut into the wheel of wealth at some other point, perhaps by choosing the market for raw materials as the basic market (this is the way oil has been treated in most policy discussions by noneconomists since 1973; and institutional economists tend to think this way). But it does no harm to go along with the neoclassical economist’s choice for the nonce, and for the story.

The main point is that money spins around the wheel one way and goods and services (for instance, the services of the basic factors of production) spin around the other. Furthermore, the households “own” the firms. A corporation is literally owned by its stockholders, partnerships



Households earn income by supplying services to firms, which demand the services of households to produce goods that households demand.



One must follow around the wheel the consequences of a shock. For example, a rise in meat prices that is a *demand pull* (consumers demand more) may look like a *cost push* if the rise is not traced to its source. Suppose that meat consumers demand more, perhaps because they have become richer. The grocer does not at first raise prices to match. Meat supplies on the grocer's shelves run out unusually fast; the butcher will order unusually large amounts from the supplier, who will order in turn unusually large amounts from the packer and, finally, from the farmer. The farmer will only supply more meat at a higher price. He charges it. The higher price will now be passed back around the wheel of wealth through packer, wholesaler, and grocer. Each will believe, quite reasonably, that the rise in price came from "costs." No one, least of all the consumers and their outraged representatives, will realize that the rise came from the demands of the consumers themselves. Firms hide the underlying transactions. The economist must look around the wheel of wealth to the households of farmers and meat consumers transacting with each other.

FIGURE 11. The wheel of wealth. (McCloskey 1985a, 286; reprinted by permission of Simon and Schuster, © Macmillan.)

by their partners. But governments, too, are "owned" by households, which is to say that certain households have rights to streams of income generated by the government (during the Napoleonic Wars William Cobbett called them "tax eaters") and the government is run by people who retire at night to households. Firms are not outside entities that can be

taxed, for example, without affecting humans. The bumper sticker Tax Profits, Not People is mistaken. In the words of Pogo the Possum, "We have met the enemy and he is us."

The wheel shows, for example, that the income of the nation or any part of the nation can be measured in at least two ways, by the goods and services purchased or by the factors paid, since the wheel is in balance, by accounting convention. The double-entry character of national income gives the historian two shots at the same figure. In national accounts for developed countries the two figures differ as little as 1 percent. In Charles Feinstein's careful reconstruction of the British national accounts the discrepancy is 6 percent in 1920-26 and 14 percent in 1870-1887 (Feinstein 1972, 13). That the two measures move in parallel over time, however, makes one confident about the true trend.

It is significant that all payments are ultimately payments to some person, not to institutions. The tax of inflation will help someone who earns the higher price at the same time that it hurts someone else who pays it. Inflation does not reduce income as a whole (though it does of course change who gets the income). The lag of wages behind prices can be a cause of rising profits for a little while (though in actual cases wages have proven quick to catch up [Mokyr and Savin 1976]), but it does not change income as a whole.

An example in detail of the advantages of thinking in terms of the wheel of wealth and general equilibrium concerns the early years of the British industrial revolution. In the 1960s two groups of economic historians fell to quarreling about the effects of a series of good harvests in Britain from 1730 to 1750. They quarreled over how the good harvests would affect the demand for industrial products like cloth and iron. One group pointed out that the good harvests drove down the price of grain, reducing on balance the income of the farming community. Since the demand for industrial goods on that account would be lower. According to one partial equilibrium argument, then, the years of good harvests were a drag on the industrial revolution.

The other group, however, pointed out that on the contrary the fall in price would increase the real income of the *non-farming* community. Their higher income would result in *more* purchases of industrial goods, not less. According to this other partial equilibrium argument, then, the good harvests were on the contrary an impetus to the industrial revolution.

In 1975 Richard Ippolito noted that the two groups of historians

were pulling at opposite ends of the same bone. Raised to contemplate whole economies at once, and to recognize that the income of one part is the expenditure of another, an economist can see that the farmers' loss was precisely the non-farmers' gain. It is no great mental trick. The fall in the farmers' revenue was what non-farmers therefore did not need to pay to acquire grain. The lower income of farmers *was* the higher income of non-farmers. The nation as a whole did not lose or gain income. Therefore industrial goods did not lose or gain. What the demand for industry gained on the swings it lost on the roundabouts. As a first approximation the argument of the first group of historians plus the argument of the second equaled zero.

As a second approximation, to which Ippolito then turned, good harvests increased a little the income of the nation. The nation as a whole, speaking of the general equilibrium, is plainly better off when the weather is better. Ippolito concluded that the small increase worked to increase demand for industry, but not by much.

The pioneer in using the idea of general equilibrium to write history has been Jeffrey Williamson, an expert in the study of present-day poor countries and of the economic history of the nineteenth century. In 1974 Williamson published *Late Nineteenth Century American Development: A General Equilibrium History*, which displayed the economy of the United States in seventy-two equations (he has subsequently applied similar methods to British and Japanese history). Seventy-two equations sounds like a lot, but in fact, as Williamson himself noted, they do not capture much detail. Since Williamson's main interest was in the contrasts between eastern and western regions he distinguished only East and West for most variables, requiring him to leave out the American South. And to keep the argument calculable and lucid he had to confine attention to the markets in labor, capital, part of land, all manufactured goods taken together, and all agricultural goods taken together (leaving out services). Two goods and three factors of production are made to stand for all the riches of America in cowboys, coal mines, cotton mills, slum housing, iron deposits, ocean fisheries, books, beer, wheat, cheese, office space, primary education, train journeys, and the means to wage war.

But one cannot think about an economy without simplifying. One cannot deal with everything at once. Even a study of the "partial" equilibrium of supply and demand in an isolated market throws the rest of the economy into a single category of "all other goods." The question is not whether to simplify. One must. The question is whether the particular

simplification is useful, that is, whether it illuminates or obscures important historical questions.

### IS IT GOOD?

The analysis here has moved from the mundanities of individual choice to the grandeur of general equilibrium. I said earlier that neoclassical economics is at heart bourgeois. I might add "liberal," for one of the reasons that the analysis of choice and markets holds such fascination is that it is claimed to model a liberal society.

Whether or not the vision of liberal capitalism is attractive to everyone, everyone should recognize its charm, if only to question the charm intelligently. Suppose that you are reasonably well satisfied with the present distribution of income and rights. That is a conservative supposition, but widely held after all. And suppose now you look on the choices made in the market. They are by their nature mutually advantageous. No one enters a deal if he expects to lose from it. If both sides are moderately well informed, then the deals in the market will make both sides better off. They will not be made better off every single time they go to market, of course, but most of the time. Being made better off does not mean being made perfectly well off, as in the best conceivable society. If someone is poor when she goes to the market she is probably going to be poor, if a little better off, when she comes home. But from a satisfactory situation all have been made somewhat better off (all at least who participate). What could be more pleasant to behold? An economy moves from strength to strength by way of mutual satisfaction.

No adult needs to be told that there are flaws in this vision, though neoclassical and Austrian economists can show that some of the putative flaws are less serious than the average left-liberal academic might assume. Economics reached its peak of intellectual influence in the early nineteenth century. Since then most intellectuals have resisted reading any of it and are therefore filled with mainly idiotic complaints about what they suppose, without reading, to be its content and arguments. But anyway, that economics fits an early-nineteenth century view of the free society is not irrelevant to its attractions, nor to some of the illiberal hostility toward it.

The issue is not wholly philosophical. The liberal philosophy supports for example cost/benefit analysis—which is just what it sounds like, a careful accounting of the costs and benefits of a project, viewed from the whole society's point of view. Such calculations have stood near the heart

of economics since the political arithmeticians and improving pamphleteers of the late seventeenth century (among them Daniel Defoe). The balance sheet is sometimes an interesting historical question.

Imperialism, for example, was long viewed through a checklist of costs and benefits, to colony and to metropolis. Such history has fallen out of favor, but it would seem unwise to simply discard all its findings. Recently Lance Davis and Robert Huttenback (1989), for example, have confirmed what many economic historians long suspected: that from the British point of view British imperialism was a bust; that Britain extracted practically nothing by way of booty from its nineteenth-century colonies; that half of British defense expenditures, supported mainly on the backs of home not colonial taxpayers (remember the Boston Tea Party) protected the routes to India to no *economic* purpose; and that only particular individuals in Britain benefited from the Empire, again at the expense of other British citizens. Such calculations are similar to second-guessing farmers or businesspeople, and again can be made more complex by adding other items to the utility function. If the British people in 1900 got enough pleasure from seeing the world map splotted with red, then their lower income may have been justified. Income is not necessarily all there is to happiness. But the neoclassical economist, in his liberal and literal way, would want to know whether the people would have voluntarily paid for the empire, with open eyes. He doubts it.

. . . . .

It goes without saying that political issues are raised when the historian reaches for the choice-as-economics tool. The tool is of course shaped by ideology. But then it would be naive to claim that some other tool is not. Carefully handled the tool can inscribe good history, without injuring the writer or the reader. The neoclassical theory of choice is a sweet little saw and hammer set, just the one to take for many historical uses, like the tools that rational Crusoe chose to take in his few, scarce hours on the wreck.