

ECONOMICS EXPLAINED

EVERYTHING YOU NEED TO KNOW ABOUT
HOW THE ECONOMY WORKS AND WHERE IT'S
GOING

*Robert Heilbroner
and Lester Thurow*

NEWLY REVISED AND UPDATED

A TOUCHSTONE BOOK
Published by Simon & Schuster

ONE

Capitalism: Where Do We Come From?

We live in a capitalist economic system. Politicians constantly talk about capitalism, or if they don't like the word, about the free-enterprise system. We are constantly being told that capitalism is the wave of the future, or would be the wave of the future if only it were left alone, or sometimes that capitalism is in decline and will fall on its own weight, like the Roman Empire.

Perhaps there is no more important economic question than the future of capitalism, none that affects more deeply our private destinies and those of our children. As we will see in our next chapter, the great economists of the past were vitally concerned with this issue. Modern economists are wiser or blinder, depending on how you look at it, and say relatively little about our long-term prospects. Nonetheless, we feel that it is impossible to understand capitalism without at least some understanding of its roots. So we are going to begin the study of our economic system rather the way a doctor begins to become acquainted with a patient—by taking its history.

Many people speak about capitalism as if it were as old as the hills, as ancient as the Bible, implying that there is something about the system that accords with human nature. Yet, on reflection, this is clearly not the case. Nobody ever called the Egyptian pharaohs capitalists. The Greeks about whom Homer wrote did not comprise a business society, even though there were merchants and traders in Greece.

Medieval Europe was certainly not capitalist. Nor would anyone have used the word to describe the brilliant civilizations of India and China about which Marco Polo wrote, or the great empires of ancient Africa, or the Islamic societies of which we catch glimpses in *The Arabian Nights*.

What made these societies noncapitalist was not anything they possessed in common, for they were as different as civilizations could be, but rather, some things they *lacked* in common. To become aware of these lacks will give us a sharp sense of the uniqueness and special characteristics of capitalism itself.

To begin with, all these noncapitalist societies lacked the institution of private property. Of course, all of them recognized the right of some individuals to own wealth, often vast wealth. But none of them legally accorded the right of ownership to all persons. Land, for instance, was rarely owned by the peasants who worked it. Slaves, who were a common feature of most precapitalist systems, were only rarely permitted to own property—indeed, they *were* property. The idea that a person's property was inviolate was as unacknowledged as that his person was inviolate. The Tudor monarchs, for example, relatively enlightened as sixteenth-century monarchies went, could and did strip many a person or religious order of their possessions.

Second, none of these variegated societies possessed a central attribute of capitalism—a market system. To be sure, all of them had markets where spices, gold, slaves, cloth, pottery, and foodstuffs were offered for sale. But when we look over the expanses of ancient Asia, Africa, or the Egyptian and Roman empires, we can see nothing like the great web of transactions that binds our own economy together. Most production and most distribution took place by following the dictates of tradition or the orders of a lord. In general, only the small leftovers found their way to the market stalls. Even more important, there was no organized market at all to buy and sell land, or to hire labor, or to lend money. Markets were the ornaments of society, tradition and command its iron structure.

Under such conditions, the idea of economic freedom was held in little regard. When peasants were not free to move as they wished, when artisans were bound to their trades for life, when the relations of fieldworkers to their masters were that of serf to lord, who could worry about the right of contract or the right to withhold one's labor? The dis-

inction is crucial in separating capitalism from what came before: A capitalist employee has the legal right to work or not work as he or she chooses, and whereas this right may seem to count for little under conditions of Dickensian poverty, it must be compared with the near-slavery of the serf legally bound to his lord's land and to the work his lord assigned him.

In such a setting, moneymaking itself was not much esteemed. Ambitious persons from the better walks of life sought fame and fortune in military exploits, in the service of the court, or in the hierarchies of religion. In this regard, it is interesting to reflect how twisted and grasping are the faces of merchants depicted by medieval artists, in contrast to the noble mien of soldiers and courtiers. Moneymaking was generally considered to be beneath a person of noble blood; indeed, in Christendom it was a pursuit uncomfortably close to sin. Usury—lending at interest—*was* a sin—in fact, a mortal sin.

As a consequence of all this, society's wealth was not owned by "the rich"—that is, by those whose main efforts were aimed directly at moneymaking—but rather by the powerful, who seized it in the struggle for lands and privileges. Of course, the winners in this struggle became rich, sometimes unimaginably rich, but their riches flowed from their power, not the other way around. Julius Caesar, for example, became rich only because he was appointed governor of Spain, from which he profited fabulously, as all provincial governors were supposed to do and did.

Last, and in some ways most significant, economic life was stable. It may not have seemed so to the peasants and merchants whose lives were constantly disrupted by war, famine, merciless taxation, and brigandage. But it was very stable compared to the tenor of economic life in our own time. The basic rhythms and techniques of economic existence were steady and repetitive. Men and women sowed and reaped, potters and metalworkers turned and hammered, weavers spun and wove—all using much the same kinds of equipment for decades, generations, sometimes centuries. How similar are the clothes and utensils, the materials of buildings, the means of conveyance that we see in the background of a Renaissance picture to those that we can make out on a Greek vase! How little material progress took place over a thousand years! That gives us a sense of how vast a change capitalism would bring when it finally burst upon the historic scene.

MARKET SOCIETY EMERGES

Thus we see that far from representing an eternal "human nature," capitalism comes as a volcanic disruption to time-honored routines of life. We begin to understand the immense inertia that prevented capitalism from developing in most earlier societies. From one of these societies to another, of course, different obstacles and barriers stood in the way of creating an economic way of life built on principles utterly alien to those that existed. But in all these societies, perhaps no barrier was more difficult to breach than the hold of tradition and command as the means of organizing economic life, and the need to substitute a market system in their place.

What is a market system? Essentially, it is one in which economic activities are left to men and women freely responding to the opportunities and discouragements of the marketplace, not to the established routines of tradition or the dictates of someone's command. Thus, in a market system most individuals are not only free to seek work where they wish, but must shop around for a job; by way of contrast, serfs or tradition-bound artisans were born to their employ and could only with great difficulty quit it for another. In a market system anyone is free to buy up land or to sell it: a farm can become a shopping center. By way of contrast again, land in most precapitalist societies was no more for sale than are the counties of our states.

Finally, a market in capital means that there is a regular flow of wealth into production—a flow of savings and investment—organized through banks and other financial companies, where borrowers pay interest as the reward for having the use of the wealth of the lenders. There was nothing like this before capitalism, except in the very small and disreputable capital markets personified in the despised moneylender.

The services of labor, land, and capital that are hired or fired in a market society are called the *factors of production*, and a great deal of economics is about how the market combines their essential contributions to production. Because they *are* essential, a question must be answered: How were the factors of production put to use prior to the market system? The answer comes as something of a shock, but it tells us a great deal.

There were no factors of production before capitalism. Of course, human labor, nature's gift of land and natural resources, and the artifacts of society have always existed. But labor, land, and capital were

not commodities for sale. Labor was performed as part of the social duties of serfs or slaves, who were not paid for doing their work. Indeed, the serf paid fees to his lord for the use of the lord's equipment, and never expected to be remunerated when he turned over a portion of his crop as the lord's due. So, too, land was regarded as the basis for military power or civil administration, just as a county or state is regarded today—not as real estate to be bought and sold. And capital was thought of as treasure or as the necessary equipment of an artisan, not as an abstract sum of wealth with a market value. The idea of liquid, fluid capital would have been as strange in medieval life as would be the thought today of stocks and bonds as heirlooms never to be sold.

How did wageless labor, unrentable land, and private treasures become factors of production; that is, commodities to be bought and sold like so many yards of cloth or bushels of wheat? The answer is that a vast revolution undermined the world of tradition and command and brought into being the market relationships of the modern world. Beginning roughly in the sixteenth century—although with roots that can be traced much further back—a process of change, sometimes gradual, sometimes violent, broke the bonds and customs of the medieval world of Europe and ushered in the market society we know.

We can only touch on that long, tortuous, and sometimes bloody process here. In England the process bore with particular severity on the peasants who were expelled from their lands through the enclosure of common grazing lands. This enclosure took place to make private pasturage for the lord's sheep, whose wool had become a profitable commodity. As late as 1820 the Duchess of Sutherland evicted 15,000 tenants from 794,000 acres, replacing them with 131,000 sheep. The tenants, deprived of their traditional access to the fields, drifted into the towns, where they were forced to sell their services as a factor of production: labor.

In France the creation of factors of production bore painfully on landed property. When gold flowed into sixteenth-century Europe from the New World, prices began to rise and feudal lords found themselves in a vise. Like everything in medieval life, the rents and dues they received from the serfs were fixed and unchangeable. But the prices of merchandise were not fixed. Although more and more of the serfs' obligations were changed from kind (that is, so many dozen eggs or ells of cloth or days of labor) to cash, prices kept rising so fast that the feudal lords found it impossible to meet their bills.

Hence we begin to find a new economic individual, the *impoverished* aristocrat. In the year 1530, in the Gévaudan region of France, the richest manorial lord had an income of five thousand livres; but in towns, some merchants had incomes of sixty-five thousand livres. Thus the balance of power turned against the landed aristocracy, reducing many to shabby gentility. Meanwhile, the upstart merchants lost no time in acquiring lands that they soon came to regard not as ancestral estates but as potential capital.

This brief glance at economic history brings home an important point. The factors of production, without which a market society could not exist, are not eternal attributes of a natural order. They are the creations of a process of historic change, a change that divorced labor from social life, that created real estate out of ancestral land, and that made treasure into capital. Capitalism is the outcome of a revolutionary change—a change in laws, attitudes, and social relationships as deep and far-reaching as any in history.*

The revolutionary aspect of capitalism lies in the fact that an older, feudal way of life had to be dismantled before the market system could come into being. This brings us to think again about the element of economic freedom that plays such an important role in our definition of capitalism. For we can see that economic freedom did not arise just because men and women directly sought to shake off the bonds of custom and command. It was also thrust upon them, often as a very painful and unwelcome change.

For European feudalism, with all its cruelties and injustices, did provide a modicum of economic security. However mean a serf's life, at least he knew that in bad times he was guaranteed a small dole from his lord's granary. However exploited a journeyman, he knew that he could not be summarily thrown out of work under the rules of his master's guild. However squeezed a lord, he too knew that his rents and dues

*One of the many fascinating questions that surround the origins of capitalism is why it arose only in Europe and never in any other part of the world. One part of the reason is that the collapse of the Roman Empire left many towns without an allegiance to anyone. In time these towns, which were naturally centers of trading and artisan work, grew powerful and managed to bargain for privileges with kings and lords. Capitalism thus grew up in the interstices of the medieval system. A similar opportunity and stimulus did not present itself elsewhere. A controversial but important work on the rise of capitalism is Immanuel Wallerstein's *The Modern World System*, Academic Press, three vols., 1974, 1980, 1989. See also Fernand Braudel, *Capitalism and Civilization*, Harper and Row, three vols., 1981, 1982, 1984.

were secured by law and custom and would be coming in, weather permitting. Elsewhere, in China, India, and Japan, variants of this combination of tradition and command also provided an underpinning of security for economic life.

The eruption of the market system—better, the centuries-long earthquake that broke the hold of tradition and command in England and France and the Lowlands—destroyed that social underpinning. Thus the economic freedom of capitalism came as a two-edged sword. On the one hand, its new freedoms were precious achievements for those individuals who formerly had been deprived of the right to enter into legal contracts. For the up-and-coming bourgeois merchants, it was the passport to a new status in life. Even for some of the poorest classes, the freedom of economic contract was a chance to rise from a station in life from which, in earlier times, there had been almost no exit. But economic freedom also had a harsher side. This was the necessity to stay afloat by one's own efforts in rough waters where all were struggling to survive. Many a merchant and many, many a jobless worker simply disappeared from view.

The market system was thus the cause of unrest, insecurity, and individual suffering, just as it was also the cause of progress, opportunity, and fulfillment. In this contest between the costs and benefits of economic freedom lies a theme that is still a crucial issue for capitalism.

THE UNLEASHING OF TECHNOLOGY

The creation of a market society also paved the way for a change of profound significance in bringing about modern economic life. This was the incorporation of science and technology into the very midst of daily existence.

Technology is not, of course, a modern phenomenon. The gigantic stones that form prehistoric Stonehenge; the precision and delicacy of the monumental Egyptian pyramids; the Incan stone walls, fitted so exactly that a knife blade cannot be put between adjoining blocks; the Chinese Great Wall; and the Mayan observatories—all attest to mankind's long possession of the ability to transport and hoist staggering weights, to cut and shape hard surfaces, and to calculate complex problems. Indeed, many of these works would challenge our present-day engineering capabilities.

Nonetheless, although precapitalist technology reached great heights,

it had a very restricted base. We have noted already that the basic tools of agriculture and artisan crafts remained little changed over millennia. Improvements came very slowly. So simple an invention as a horse collar shaped to prevent a straining animal from pressing against its windpipe did not appear during all the glories of Greece and triumphs of Rome. Not until the Middle Ages was there a switch from the ox to the draft horse as a plowing animal (a change that improved efficiency by an estimated 30 percent), or was the traditional two-field system of crop rotation improved by adopting a three-field system. (See box on page 19.) Thus was precapitalist technology lavished on the needs of rulers, priests, warriors. Its application to common, everyday work was virtually ignored.

There were, of course, good reasons why the technology of daily life was ignored. The primary effect of technological change in daily activity is to increase output, to enhance the productivity of the working person. But in a society still regulated by tradition and command, where production was carried on mainly by serfs and slaves and custom-bound artisans, there was little incentive to look for increases in output. The bulk of any increase in agricultural yields would only go to the lord in higher rents, not to the serf or the slave who produced them. Although a lord would benefit greatly from increases in agricultural output, how could a great noble be expected to know about, or to concern himself with, the dirty business of sowing and reaping? So, too, any artisan who altered the techniques of his trade would be expected, as a matter of course, to share these advances with his brethren. And how could his brethren, accustomed over the years to disposing of a certain quantity of pots or pans or cloth in the village market, expect to find buyers for more output? Would not the extra production simply go begging?

Thus productive technology in precapitalist societies slumbered because there was little incentive to search for change. Indeed, powerful social forces were ranged against technological change, which could only introduce an unsettling element into the world. A society whose whole way of life rested on the reproduction of established patterns of life could not imagine a world where the technology of production was constantly in flux, and where limits were no longer recognized in any endeavor.

These inhibiting forces were ruthlessly swept away by the currents of the emerging markets for labor, land, and capital. Serfs were up-

THE DIFFERENCE TECHNOLOGY MAKES: THREE FIELDS VERSUS TWO

Until the Middle Ages, the prevailing system of cultivation was to plant half a lord's arable land in a winter crop, leaving the other half fallow. The second year, the two fields simply changed functions.

Under the three-field plan, the arable land was divided into thirds. One section was planted with a winter crop, one section with a summer crop, and one was left fallow. The second year, the first section was put into summer crops, the second section left fallow, and the third put into winter grains. In the third year, the first field was left fallow, the second used for winter crops, the third for spring planting.

Therefore, under the three-field system, only one third—not one half—of the arable land was fallow in any year. Suppose that the field as a whole yielded six hundred bushels of output. Under the two-field system, it would give an annual crop of three hundred bushels. Under the three-field system the annual crop would be two thirds of the area, or four hundred bushels—an increase of one third. Further, in those days it was customary to plow fallow land twice, and cultivated land only once. By cutting down the ratio of fallow to cultivated land, plowing time was reduced, and peasant productivity even more significantly improved. For more on this and other fascinating advances in precapitalist technology, see Lynn White, *Medieval Technology and Social Change* (Oxford: Clarendon Press, 1962); and Joel Mokyr, *The Lever of Riches* (New York: Oxford University Press, 1990).

rooted to become workers forced to sell their labor power; aristocratic landlords were rudely shouldered aside by money-minded parvenus; guild masters and artisans watched commercial enterprises take away their accustomed livelihood. A new sense of necessity, of urgency, infused economic life. What had been a more or less dependable round of life became increasingly a scramble for existence. The feeling that one's economic interests were best served by following in the footsteps of one's forebears gave way to the knowledge that economic life was

shot through with insecurity, and was at worst a race for survival in which each had to fend for himself or herself.

The growing importance of the market, with its impersonal pressures, radically altered the place of technology, especially in the small workshops and minuscule factories that were the staging areas of the capitalist revolution. Here the free-for-all brought a need to find footholds in the struggle for a livelihood. And one foothold available to any aspiring capitalist with an inquiring mind and a knowledge of the actual processes of production was technology itself—some invention or improvement that would lower costs or change a product to give it an edge on its competitors.

Thus in the late eighteenth and early nineteenth centuries capitalism raised a crop of technology-minded entrepreneurs, a wholly new social group in economic history. For example, there was John Wilkinson, son of an iron producer, who became a driving force for technical change in his trade. Wilkinson insisted that everything be built of iron—pipes and bridges, bellows and cylinders (one of which powered the newfangled steam engine of John Watt). He even constructed a much-derided iron ship—later much admired! There was Richard Arkwright, barber by trade, who made his fortune by inventing (or perhaps by stealing) the first effective spinning machine, becoming in time a great mill owner. There were Peter Onions, an obscure foreman who originated the puddling process for making wrought iron; Benjamin Huntsman, a clock-maker who improved the method of making steel; and a score more. A few, like Sir Jethro Tull, a pioneer in the technology of agriculture, were great gentlemen, but on the whole the technological leaders in industry were men of humble origin.

THE INDUSTRIAL REVOLUTION

The new dynamism gave rise to the Industrial Revolution, the first chapter of a still unfinished period of history in which startling and continuous changes revolutionized both the techniques of production and the texture of daily life.

A few figures tell the story. Between 1701 and 1802, as the technology of spinning and weaving gradually was perfected, the use of cotton in England expanded by 6,000 percent. Between 1788 and 1839, when the process of iron manufacture passed through its first technological

upheaval, the output of pig iron jumped from 68,000 to 1,347,000 tons. In France, in the thirty years after 1815, iron output quintupled, coal output grew sevenfold, and transportation tonnage mounted ten times. As for coal, England, the economic historian David Landes has written: “[I]n 1870 the capacity of Great Britain’s steam engines was about 4 million horsepower, equivalent to the power that could be generated by 6 million horses or 40 million men. . . . [T]his many men would have eaten some 320 million bushels of wheat a year—more than three times the output of the entire United Kingdom.”* It is no exaggeration to say that the Industrial Revolution rested on Watt’s marvel of simple ingenuity, the steam engine.

But even these figures do not convey a full sense of the effect of technology on daily life. *Things* became more common—and more commonplace. As late as the seventeenth century, what we would consider the most ordinary possessions were scarce. A peasant counted his worldly wealth in terms of a few utensils, a table, perhaps one complete change of clothes. In his will, Shakespeare left Anne Hathaway his “second-best bed.” Iron nails were so scarce that pioneers in America burned down their cottages to retrieve them. In the wilder parts of Scotland in Adam Smith’s time, nails even served as money.

Technology brought a widening, deepening, ever-faster-flowing river of things. Shoes, coats, paper, window glass, chairs, buckles—objects of solicitous respect in precapitalist times for all but the privileged few—became everyday articles. Gradually capitalism gave rise to what we call a rising standard of living—a steady, regular, systematic increase in the number, variety, and quality of material goods enjoyed by the great bulk of society. No such process had ever occurred before.

A second change wrought by technology was a striking increase in the sheer size of society’s industrial apparatus. The increase began with the enlargement of the equipment used in production—an enlargement that stemmed mostly from advances in the technology of iron and, later, steel. The typical furnace used in extracting iron ore increased from ten feet in height in the 1770s to over one hundred feet a century later; during the same period the crucibles in which steel was made grew from cauldrons hardly larger than an oversized jug to converters

*David Landes, *The Unbound Prometheus* (England: Cambridge University Press, 1969), p. 98.

literally as big as a house. The looms used by weavers expanded from small machines that fitted into the cottages of artisan-weavers to monstrous mechanisms housed in mills that still impress us by their size.

Equally remarkable was the expansion in the social scale of production. The new technology almost immediately outstripped the administrative capability of the small-sized business establishment. As the apparatus of production increased in size, it also increased in speed. As outputs grew from rivulets to rivers, a much larger organization was needed to manage production—to arrange for the steady arrival of raw materials, to supervise the work process, and not least, to find a market for its end product.

Thus, we find the size of the typical business enterprise steadily increasing as its technological basis became more complex. In the last quarter of the eighteenth century a factory of ten persons was worthy of note by Adam Smith, as we shall see in our next chapter. By the first quarter of the nineteenth century an ordinary textile mill employed several hundred men and women. Fifty years later many railways employed as many individuals as constituted the armies of respectable monarchs in Adam Smith's time. And in still another fifty years, by the 1920s, large manufacturing companies had almost as many employees as the populations of eighteenth-century cities.

Technology also played a decisive role in changing the nature of that most basic of all human activities, work. It did so by breaking down the complicated tasks of productive activity into much smaller subtasks, many of which could then be duplicated, or at least greatly assisted, by mechanical contrivances. This process was called the division of labor. Adam Smith was soon to explain, as we shall see, that the division of labor was mainly responsible for the increase in productivity of the average worker.

The division of labor altered social life in other ways as well. Work became more fragmented, monotonous, tedious, alienated. And the self-sufficiency of individuals was curtailed greatly. In precapitalist days most people either directly produced their own subsistence or made some article that could be exchanged for subsistence: peasants grew crops; artisans produced cloth, shoes, implements. But as work became more and more finely divided, the products of work became ever smaller pieces of the total jigsaw puzzle. Individuals did not spin thread or weave cloth, but manipulated levers and fed the machinery that did the actual spinning or weaving. A worker in a shoe plant made

uppers or lowers or heels, but not shoes. No one of these jobs, performed by itself, would have sustained its performer for a single day; and no one of these products could have been exchanged for another product except through the complicated market network. Technology freed men and women from much material want, but it bound them to the workings of the market mechanism.

Not least of the mighty impacts of technology was its exposure of men and women to an unprecedented degree of change. Some of this was welcome, for change literally opened new horizons of material life: travel, for instance, once the prerogative of the wealthy, became a possibility for the masses, as the flood of nineteenth-century immigration to the United States revealed.

However, the changes introduced by technology had their negative side as well. Already buffeted by market forces that could mysteriously dry up the need for work or just as mysteriously create it, society now discovered that entire occupations, skills acquired over a lifetime, companies laboriously built up over generations, age-old industries could be threatened by the appearance of technological change. Increasingly, productive machinery appeared as the enemy, rather than the ally, of humankind. By the early nineteenth century the textile weavers, whose cottage industry was destroyed gradually by competition from the mills, were banding together to burn down the hated buildings.

These aspects of change do not begin to exhaust the ways in which technology, coupled with the market system, altered the very meaning of existence. But in considering them, we see how profound and how wrenching was the revolution that capitalism introduced. Technology was a genie that capitalism let out of the bottle; it has ever since refused to go back in.

THE POLITICAL DIMENSION

The disturbing, upsetting, revolutionary nature of the market and technology sets the stage for one last aspect of capitalism that we want to note: the political currents of change that capitalism brought, as much a part of the history of capitalism as the emergence of the market or the dismantling of the barriers against technical change.

One of these political currents was the rise of democratic, or parliamentary, institutions. Democratic political institutions far predate capitalism, as the history of ancient Athens or the Icelandic medieval

FIVE

The GDP

One of the reasons for the mystification that obscures economics is the vocabulary it employs. Not only does it use common, ordinary words, such as *saving* or *investing*, in ways that are not exactly the way we use them in everyday talk, but it leans on barbarous and intimidating terms like *macroeconomics* or *gross domestic product*.

It would be nice if we could purge economics of its jargon, but that would be like asking doctors to tell us about our troubles in plain English. Instead, we must learn to speak a certain amount of economics—that is, to become familiar with, and easy about, some of the basic terms in which economists tell about our economic condition.

One of these is that odd word “macroeconomics.” It comes from the Greek *macro*, meaning big, and the implication is that macroeconomics therefore grapples with very big problems. It does, including such problems as inflation and recession and unemployment and economic growth. But that is not what distinguishes macro from its brother, “microeconomics,” whom we will meet later. Rather, macroeconomics refers to a perspective, a vantage point, that throws into high relief certain aspects of the economic system.

What does the economy look like from the macro perspective? The view is not unlike that which we have gained in the chapters just past. We look down on the economy, as from a plane, to see it as a vast landscape populated by business firms, households, government agencies. Later, when we take up the micro perspective, we will examine the selfsame

parliamentary system shows. Nonetheless, the rise of the mercantile classes was closely tied to the struggle against the privileges and legal institutions of European feudalism. The historic movement that eventually swept aside the precapitalist economic order also swept aside its political order. Along with the emergence of the market system we find a parallel and supporting emergence of more open political ways of life.

We must resist the temptation of claiming that capitalism either guarantees, or is necessary for, political freedom. We have seen some capitalist nations, such as pre-Hitler Germany, descend into totalitarian dictatorship. We have seen other nations, such as Sweden, move toward a kind of social-minded capitalism without impairing democratic liberties. Moreover, the exercise of political democracy was very limited in early capitalism: Adam Smith, for example, although comfortably off, did not possess enough property to allow him to vote.

It is true, to be sure, that political liberties did not exist or scarcely existed in communist nations that have deliberately sought to remove the market system. This suggests, although it does not prove, that some vital connection exists between democratic privileges as we know them and an open society of economic contract, whether it be formally capitalist or not.

Because of the economic freedom on which the market system has always rested, the basic philosophy of capitalism from Adam Smith's day forward has been *laissez-faire*—leaving things alone.* As we study economics further, we will be tracing the evolution of that idea—the idea of leaving the market alone—as well as investigating what has happened to the system, both when it was left alone and when it wasn't.

It is much too early to take up that controversy here. Suffice it to say that if capitalism brought a strong impetus for *laissez-faire*, it also brought a strong impetus for economic intervention. The very democratic liberties and political equalities that were encouraged by the rise of capitalism became powerful forces that sought to curb or change the manner in which the economic system worked. Indeed, within a few years of Adam Smith's time, the idea of leaving things alone was al-

*It is said that a group of merchants called on the great Colbert, French finance minister from 1661 to 1683, who congratulated them on their contribution to the French economy and asked what he could do for them. The answer was "*Laissez-nous faire*"—leave us alone. Since Colbert was a strong proponent of the complex regulations and red tape that tied up industry in France at this time, we can imagine how gladly he received this advice.

ready breached by the English Factory Act of 1833, establishing a system of inspectors to prevent child and female labor from being abused. In our own day that same political desire to correct the unhampered workings of *laissez-faire* capitalism has given rise to the Social Security system, which provides a social floor beneath the market, and to the environmental legislation that limits the market's operation in certain areas.

Thus, from the beginning, capitalism has been characterized by a tension between *laissez-faire* and intervention—*laissez-faire* representing the expression of its economic drive, intervention its democratic political orientation. That tension continues today, a deeply imbedded part of the historic character of the capitalist system.

landscape from a worm's-eye rather than a bird's-eye view, with surprising consequences as to the features of the landscape that spring into sharp focus.

The purpose of looking down on the economy from the macro vantage point is that it allows us to see, more clearly than from ground level, a process of crucial and central importance. This is the ceaseless activity of production on a national scale, the never-ending creation and re-creation of the wealth by which the country replenishes and renews and expands its material life. This great central flow, on which we all depend, is called the *gross domestic product*, often abbreviated as GDP. When TV newscasters say that GDP has gone up or down, what they mean is that the river of output has gotten larger or smaller, that we are producing more or less. Learning about why production varies is the first task of macroeconomics.

WHAT GDP IS MADE OF

We start to unravel the question by looking more closely at the river itself. One thing is immediately clear. The flow of output arises from the cooperation of the factors of production—from the efforts of the labor force mustered from the nation's households, working with capital and land mainly owned by the nation's businesses, under the rules and laws established by the government. We can literally see the flow of production originating in the 10 million farms and factories, offices and agencies, over which we fly. It is from these wellsprings that the river of national output is formed.

As we look down on it, the river seems at first to be made up of an unclassifiable collection of outputs. There are hundreds of thousands, perhaps millions, of kinds of goods and services in the stream of production—foods of every conceivable kind, spectrums of clothing, catalogs of machinery, jumbles of junk. But at second look, we can see that this vast and variegated output can be divided into two basic sorts of production. One of them consists of goods and services that will usually be bought by private households, though also by government employees for individual use: cars, haircuts, jewelry, meat, health care, weather forecasts. We call this branch of the river of production *consumption*, and the various goods and services in it *consumers' goods*. The consumption branch of our production process is familiar to us. But looking again from our macro vantage point, we can see that there

are also goods and services that *never end up in any consumer's possession*. Here is a stream of outputs such as some machines, roads, office buildings, bridges, airports, not to mention smaller objects such as office furniture and office typewriters. These goods are obviously also part of our gross domestic product, but they are not consumers' goods. We give them a special name—*investment goods* or *capital goods*—and we will soon see that they play a vital role in determining our economic well-being. To physical investment goods also should be added outputs of educational skills in schools and the knowledge produced by research and development, together often called *human capital*.

The macro view also enables us to see a rather surprising thing about the two branches of output. It is that each stream supports a different part of the economy. The flow of consumers' goods obviously goes to restore the working strength and well-being of the nation's households. Without it, we would perish in a few weeks. But the investment flow of output also plays a restorative function. Investment output replenishes and renews the capital wealth of the nation. The flow of investment output terminates in repairs to and extensions of our system of dams and roads, assembly lines and warehouses, lathes and drill presses, farm equipment, apartment houses, skills and knowledge. If that stream of output dried up, we would not perish as quickly as if consumer output disappeared, but our productive strength would soon wither, and by degrees we would be forced back to the level of an underdeveloped, then of a primitive, society. GDP, then, consists of two main kinds of output—consumption goods and investment goods. The roughly \$8 trillion that gross domestic product amounted to in 1997, for instance, is nothing but the total sales value of these two basic kinds of output. It may help to think of the river of production as passing through the checkout counters of an immense supermarket. The sales ticket on each item is rung up on a cash register. After a year of ringing up the checkouts, a total is taken of the tapes. That's GDP for the year.*

*We add a footnote you may never use—but that one day you might want badly. Until quite recently, the name we gave our total production was *gross national product*, or GNP, not *gross domestic product*, or GDP. The difference is minor: GDP measures the value of all goods and services produced within the United States, regardless of whether the producer is a U.S. firm or a foreign one located here, or whether it is an American worker or a national residing here. In contrast, *gross national product*—GNP—measures the value of the output of all U.S. citizens, regardless of whether they are working in the United States or abroad. Almost all countries use GDP these days, but we only switched

* * *

A few things ought to be noticed about this GDP. One of them is that the flow of output through the checkout counter is comprised of both public and private goods and services. Take the flow of consumption, for example. Consumption goods or services, as the words indicate, are goods that we consume or use up, usually in a fairly short period. Most consumption goods are bought by private households for their personal use—food or clothing, for instance, or services such as movie admissions or legal advice. But some consumption outputs are bought by local or state or federal governments. Firefighters' services, for example, resemble the professional services of lawyers or oil-well firefighters, but they are part of public consumption, not private. This is true even though households in the end get the benefit of the firefighters' performances: The "person" who pays the bill for their services is the state.

The same division into private and public can be observed if we look at investment. Investment goods typically last a long time and are replaced when they wear out, as is the case with a factory. But this is also true of a road or a dam or a city-owned incinerator plant. These are investment goods too, but they are public, not private. Some investment goods, such as skills and knowledge, are bought by both the public and private sectors.

While we are concerning ourselves about public expenditure, one additional thing should be noted. It is that very large and important flow of government spending, mainly federal, called transfer payments. This is the stream of payments mentioned in Chapter Four mainly for "safety net" purposes: Social Security payments, health care, unemployment compensation, help for the disabled or disadvantaged, plus subsidies of various kinds. Government transfers came to more than \$1.1 trillion in 1997, equal to about 14 percent of GDP.

Yet when we add up GDP we do not include transfer payments in it! This is because transfers, as the name indicates, are payments made for social purposes, not because the recipients perform a useful service. Here is the difference: when we pay our cleaning bill, we transfer

from GNP to GDP a few years ago. Thus, if you are looking up statistics of total output of a few years back, you are likely to find them identified as GNP. Fortunately, for most purposes the difference in dollar sums between GDP and GNP is very small. Anyway, now you know.

money to someone who has done work for us. So too, when we pay taxes to help finance schools or fire departments or even armies, we also pay individuals who perform services on our behalf. But the portion of the taxes we pay that is used to provide income to individuals who cannot find work, or are too infirm to support themselves, or who have reached retirement, is not a reward for effort. It is a form of institutionalized social responsibility that has become part of every advanced nation. It is, in fact, the public equivalent of private charity. *But because no direct production takes place in exchange for a transfer payment, such as a Social Security check, they are simply left out when we calculate GDP.** The same is true for gambling outlays, or the buying of stocks and bonds, or disaster relief. These are all large and important flows of spending, but they do not reflect the activity of production that GDP sets out to measure. Consumption is being transferred from one person to another but additional output is not being produced.

When GDP is actually calculated by Commerce Department statisticians, the river of output is imagined to pass through not one, but four checkout lines. One of them rings up the total of personal consumption expenditures, all of them made by private households. A second register totals up all the private domestic investment output of the country, mainly business plant and equipment and new homes for families. A third checkout line keeps track of all government output—federal, state, and local—whether for consumption or investment purposes. There is really no reason why we do not separate the stream of public output into a consumption and an investment branch, as we do with private output, and it might help us better understand the government's place in the economy if we did. But we don't, so school lunch programs and new subway trackage are put together in one government output figure.

Along the same lines, educational spending is classified as consumption in all official statistics, although it is really a mixture of consumption and investment. In the same way, the hardware part of research and

* Another way of looking at it is that a transfer payment takes money from some Americans and transfers it to others—for example, from taxpayers to the unemployed. But government itself does not "spend" the money, unlike the case with government spending that enters GDP, such as road-building or military expenditures.

development spending gets classified as investment, but the people costs of R&D do not. This occurs because when investment was first defined in the GDP statistics it had a bricks-and-mortar connotation that is no longer true but is still embedded in much of our official statistics.*

Finally, there is a fourth counter, where we ring up all the U.S. production that is sold abroad and where we subtract all the foreign production that is bought here. If we sell more than we buy, there is a positive "export balance" as part of GDP. If, as in recent years, we buy more abroad than we sell there, there is a negative export balance—a net stream of purchasing power that wends its way abroad.

Thus the GDP figure we read about is the sum of four separate tallies (involving hundreds and hundreds of detailed reports and estimates) of our national output. In 1996, for example, the four tallies were:

	\$ billion
GDP: 1996	5,151
Personal consumption expenditure	1,117
Private domestic investment outlays	1,406
Government purchases	-99
Export balance	7,576
<i>Total Gross Domestic Product</i>	

There is one last matter. In adding up our GDP, government statisticians do not record the value of every good that is produced each time it is sold. If they did, they would have to add up the value of a bushel of wheat to a grain elevator, the grain sold to a miller, the flour sold to a baker, the bread sold to a supermarket, and, finally, the loaf sold to a consumer. This would be a much bigger figure than the value of the final loaf—and yet the value of the loaf clearly contains the payments that have been previously made to the baker, the miller, the grain elevator, and the farmer!

Following along this line, statisticians only keep track of final goods, not of intermediate ones. As we would imagine, each of the checkout

*Recently, a start has been made in separating U.S. statistics into government investment and government consumption, as most European nations do. As we shall see later on, such a separation is essential if we are to formulate an intelligent plan for government spending.

counters tot up one category of these final goods: consumers' goods, investment goods, government output, and net exports.

WHAT DOES GDP TELL US?

It should be pretty clear by now what GDP consists of. What is not yet so clear is how important it is. Does the size of GDP tell us accurately how well off we are? Is it good if GDP goes up, and bad if it goes down?

The answer is yes and no. The yes part is easy to understand. When the value of production rises, more people are likely to be employed. When the value of total output increases, more incomes are sure to be received. So there is an evident connection between the size of GDP and the level of employment and of national incomes. The size of GDP also serves as a general measure of the amount of goods and services that we can buy, individually and collectively. That is why, all things considered, a rising GDP is always welcome, and a falling one unwelcome.

Yet GDP is also a flawed and deceiving measure of our well-being, and we should understand the weaknesses as well as the strengths of this most important single economic indicator.

To begin with, GDP deals in dollar values, not in physical units. Therefore, we have to correct it for inflation. As we know from the last chapter, trouble arises when we compare the GDP of one year with that of another to determine whether or not the nation is better off. If prices in the second year are higher, GDP will appear larger even though the actual volume of output is unchanged or even lower. Thus, GDP is an accurate indicator of well-being only if we can accurately take out the inflation factor in comparing one year with another. Can we? Well, partly, but not perfectly. There is always a margin of uncertainty in comparing the "real" GDP of today with that of yesterday.

A second weakness of GDP also involves its inaccuracy as an indicator of "real" trends over time. The difficulty revolves around changes in the quality of goods and services. In a technologically advanced society, goods usually are improved over time, and new goods are being introduced constantly. At the same time, in an increasingly high-density society, the quality of other services may be lessened: an airplane trip today is certainly preferable to one of thirty years ago, but a subway ride is not.

Historically, government statisticians have tried to adjust GDP statistics for quality improvement in the manufacturing sector, but have completely ignored quality improvements in the service sector. That practice did not generate significant measurement errors when goods dominated the GDP and were the driver of economic growth. But it has become a greater and greater source of error now that services are 70 percent of the GDP and increasingly the generator of economic growth.

Consider the ability to withdraw money from your bank account in the middle of the night from an ATM machine. That ability is an improvement in the quality of banking services; but it has never been recorded as such in our GDP statistics. By not measuring improvements in the quality of services we underestimate the real growth of the economy and overestimate the rate of inflation. What we measure as price increases in the service sector are often the costs of providing higher quality services.

Traditionally the GDP is divided into agricultural, mining, construction, manufacturing, and service sectors. It is important to understand that the service sector is not a homogeneous sector in the way that these other sectors are. Historically the service sector was simply what was left over after these other sectors had been defined. It includes high-tech, capital-intensive activities that make products such as nuclear power along with low-tech, labor-intensive activities such as dog walkers. Airlines and the local barber are lumped together. The service sector pays some of the highest wages in the nation to medical doctors and investment bankers, yet on average is a low-wage sector. Statistically it is just too heterogeneous to be interesting. In the not too distant future our GDP accounts undoubtedly will undergo a major revision as services are brought into our statistics of output in a more sophisticated way.

A third difficulty with GDP lies in its blindness to the ultimate use of production. If in one year GDP rises by a billion dollars, owing to an increase in expenditure on education, and in another year it rises by the same amount because of a rise in cigarette production, the figures in each case show the same amount of growth. Even output that turns out to be wide of the mark or totally wasteful—such as the famous Edsel car that no one wanted, or military weapons that are obsolete from the moment they appear—all count as GDP.

The problems of environmental or social deterioration add still another difficulty. Some types of GDP growth directly contribute to pol-

lution—cars, paper, or steel production—cars, paper, or steel production are necessary to stimulate the production of clean interior alarms are measured as production for them points to a reduction in GDP, prisons and hotels are equivalent.

Thus our conventional measure of GDP, such outputs. For instance, the cleaning bill caused by smoke from the neighborhood factory, although cleaning our clothes does not increase our GDP also does not count unpaid work effort within the family, such as when a mother enters the paid labor force, the measured GDP is bigger than the real increase in output since no subtraction has been made for the output that is no longer produced at home!

Finally, GDP does not indicate anything about the distribution of goods and services among the population. Societies differ widely in how they allocate goods and services among their populations: compare highly egalitarian Sweden and highly inequalitarian Mexico, whose total GDPs are roughly the same. Thus, to know the size of GDP or the level of GDP per capita is to know nothing about the social consequences of that GDP. A rich country may have lots of poverty that it is indifferent to, or perhaps impotent to correct. A poor country can produce a few millionaire families: some Indian princes used to receive their weight in gold from their peoples each year.

All these doubts and reservations (and some others we've left unmentioned) should instill in us a caution against using GDP as if it were a clear-cut measure of social contentment or happiness. Economist Edward Demison once remarked that perhaps nothing affects national economic welfare so much as the weather, which certainly does not get into the GDP accounts! Hence, although one country may have a GDP per capita higher than another, it does not mean that life is better there. It may be worse.

Yet, with all its shortcomings, GDP is still the simplest way we possess of summarizing the overall level of activity of the economy. If we want to examine a country's welfare, we had better turn to specific social indicators of how long its people live, how healthy they are, how cheaply they can obtain good medical care, how varied and abundant is their diet, and so forth—none of which we can tell from GDP figures

80
Macroer
alone. But y
too compl
dices of
States, r
other d
Ye
talk
e wf

alone. But we are not always interested in welfare, partly because it is too complex to be summed up in a single measure. For instance, the indices of health care or crime are better in Japan than in the United States, but not the index of living space per person. There are lots of other data that could be consulted.

Yet when we reach that famous bottom line that economists like to talk about, the changes in GDP are still the best measure we have of what is happening to the level of economic activity, and the GDP has the great value of being at everyone's fingertips. Thus it has become, for better or worse, the world's economic yardstick. Fortunately, GDP is also not a static concept. The precise measurement techniques used to construct it have evolved slowly over time, and it will remain a central theme in the economic lexicon for a long time to come.

SIX

Saving and Investing

Why does GDP fluctuate? Accidents of weather or natural disasters aside, why does the river of production run fast one year and slow the next? The question begins to take us into the real purpose of macroeconomic inquiry. Now that we know what GDP is, we want to know why it behaves the way it does, cycling up and down.

A good way to begin is to look once again at the flow of output, this time paying heed not to the actual production of goods and services that get tallied by the Commerce Department statisticians, but at the buyers standing at those checkout counters ready to take delivery of the nation's production. As we would expect, the nation's households are gathered at the consumption counter, its business firms cluster around the investment counter, government agencies make up the buyers at the government counter, and foreign firms and individuals and governments wait at the last counter.

Looking at GDP from this perspective, we see it not so much as a stream of goods, but as a flow of buying power, of expenditure, of demand. Each and every good that moves along the river of output is drawn by someone's willingness to spend money for it. Money makes goods move. As Adam Smith said, "Money is the great wheel of circulation."

Switching our attention from production to buying brings us much closer to an answer as to why the level of GDP fluctuates. Output fluctuates because the demand for it rises and falls. This is not the *only* rea-

TWELVE

How Markets Work

It seems crazy that economics should come in two “parts”—microeconomics and macroeconomics. And it is a little crazy, for there is only one economy. Yet it is a fact that certain kinds of problems, such as those we have been looking into, reveal themselves most clearly from a macro perspective that stresses the large flows of total saving and investment and government spending, but that the same macro perspective sheds very little light on other types of economic activity, especially those having to do with the kinds of output we produce. These questions about the choices we make as producers or consumers—questions that have immense consequences for our economic life—require a different vantage point, one that highlights the activities of buyers and sellers, of consumers and businessmen. This is the vantage point of the marketplace—the grocery store, the wheat pit, the buying office—where the interaction of buyers and sellers provides the flesh-and-blood encounters we lose sight of in studying GDP.

THE PRICE SYSTEM

The micro point of view brings us immediately to look into the question of prices, a question we have ignored entirely except insofar as we talked about the level of prices when we looked into inflation. But microeconomics wants to explain how particular individual prices are determined in the arena called the marketplace. Hence, microeconomics

begins with a study of supply and demand, the words we hear and use all the time, without a very clear idea of what they mean.

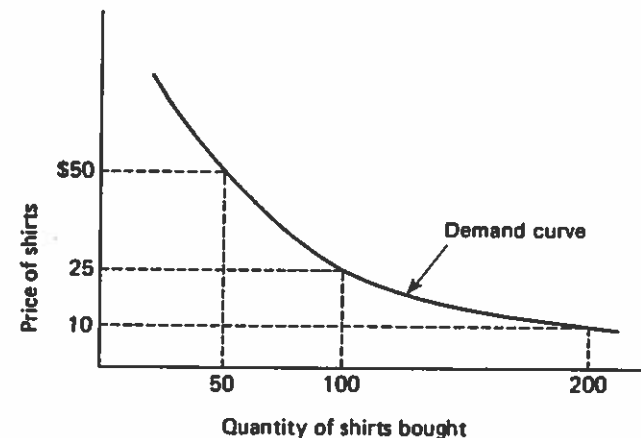
Often we speak of supply and demand as if the phrase meant some general law of economic life such as the “law” that “what goes up must come down.” But there is no such law, and if there were, it would not be the law of supply and demand. Instead, supply and demand is a way of understanding how the clash (competition) of buyers and sellers in the marketplace brings about prices that “clear” the market—a word we will immediately investigate—or why the clash sometimes fails to bring about such prices. *Supply and demand, in other words, inform us about how markets generate a kind of order in the system, keeping the different actors in the economy together in ways we caught a glimpse of in Chapter Two when we looked at Adam Smith’s conception of the economic world.*

So we shall begin by clarifying what we mean when we speak about demand. Most people think the word just means a certain volume of spending, as when we say that the demand for automobiles has fallen off or the demand for gold is high. But that is not what the economist has in mind when he defines demand as part of his explanation of markets. Demand means not just how much we are spending for a given item, but how much we are spending for that item *at its price*, and how much we would spend *if its price changed*.

Furthermore, economists make an important generalization about the behavior of our buying in the face of changing prices. It is that we tend to buy less when prices rise and more when they fall. This sounds like an awfully simple generalization, but as we shall see, a great deal can be built on it. There are two reasons why economists believe it to be true. First, as prices fall we are *able* to buy more, because our incomes stretch further. Second, as prices fall we are *willing* to buy more because at its cheaper price the commodity looks more attractive compared with other commodities.*

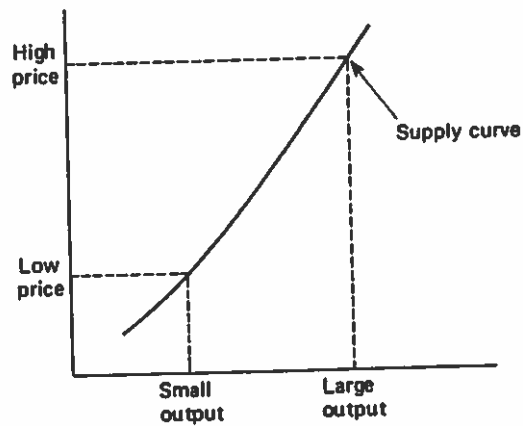
*We can easily understand why our ability to buy will increase as prices fall, but why our willingness? The answer lies in what economists call the “utility,” or pleasure, we get from most goods. Generally, as we add more and more units of one good during a given period, the addition of our pleasure diminishes. One steak dinner in the week is wonderful; two are fine; three okay; seven a bore. These diminishing increments of pleasure are called diminishing marginal utility. Because each successive steak dinner brings less pleasure, we are willing to buy more of them only if their price falls. We may be willing to pay a lot for the first (and only) steak dinner of the week, but we will certainly not pay much for the seventh one.

From this plausible reasoning, economists construct a widely used and very helpful representation of our market behavior, called a *demand curve*. The diagram following shows such a curve. Let’s suppose it is designed to show how many shirts will be bought in a department store over a period of a week at different prices. If we look at the dotted lines on the graph, we can see that this (imaginary) example shows that if shirts are priced at fifty dollars, only fifty will be bought. If they are priced at twenty-five dollars, one hundred will be bought. If they are reduced to ten dollars, two hundred will be bought.



Now what about supply? As we would expect, sellers also react to price changes, but in exactly the opposite direction from buyers. The higher the price, the more sellers are able and willing to put on the market; the lower the price, the less. Sellers are after all presumed to be profit maximizers and there are larger profits to be earned when prices are high. We’re not talking about whether a manufacturer might not be able to produce more cheaply at high volumes. The question, rather, is whether General Motors or the local farmer will be willing and able to offer more output to buyers *right now*, with their existing land and equipment, if the price is high rather than low. The answer is obviously yes.

Therefore we can depict a normal supply curve as rising, instead of falling the way a demand curve does. How steeply it rises depends on how much a supplier can bring to market quickly if the price goes up. A farmer may be stuck with a given crop. General Motors may be able to jam a lot of cars through by running three shifts. Here is what a typical short-run supply curve might look like:



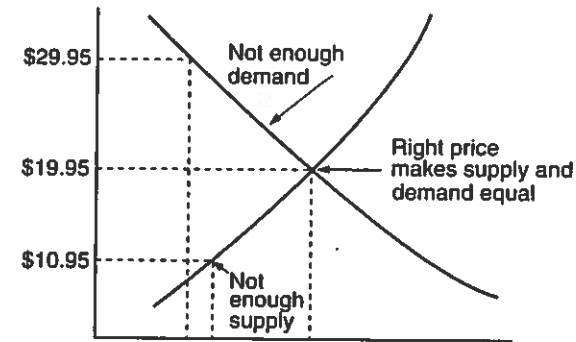
BALANCING SUPPLY AND DEMAND

We are now ready to understand how the market mechanism works. Undoubtedly you've seen the point. The fact that supply and demand behaviors are different and opposite for buyers and sellers allows the system to find a price that will "clear" the market—that is, a price at which buyers will want to purchase exactly the amount that sellers want to sell.

The best way to grasp the supply-and-demand mechanism is to run an imaginary example in our heads. Suppose that a store is selling blouses at \$29.95. It has an inventory of a hundred dozen blouses, and it expects to sell its stock out in a month. The buyer reports that the blouses "won't move." What she means is that the demand for blouses at \$29.95 isn't enough to get the merchandise into customers' hands. Since the store cuts its losses by getting rid of the blouses it has bought already, the buyer cuts the price of blouses to \$10.95 to reduce inventories and possible losses. Now the blouses start to sell. In fact, they go so fast that the buyer tries to reorder, but at much lower prices than before, so that she can continue to price them at \$10.95 and still make a profit. What she finds, however, is that the manufacturer can't fill her orders at the lower price she wants. There is a lot of demand for cheap blouses, but no supply.

The question is: Is there a price that will make both the supplier and the customer happy? The answer is yes—the price that will equate the

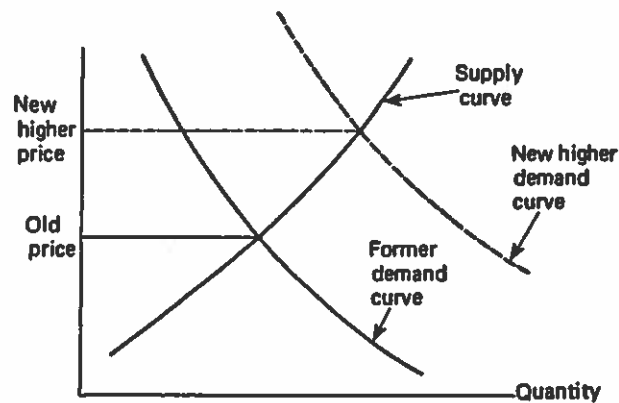
quantity of blouses demanded to the quantity supplied. We can see that in the next graph, below, where the "equilibrium" price is \$19.95.



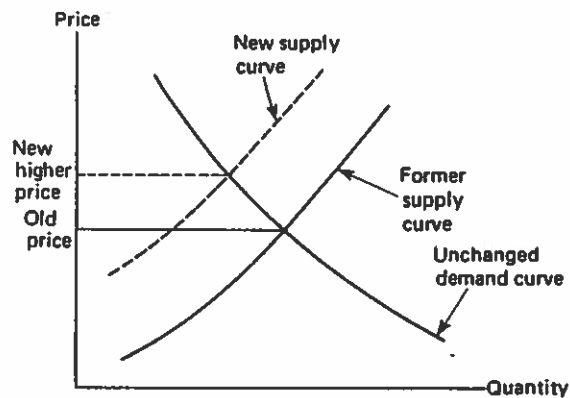
The point is not to get too hung up on the curves, which can be drawn in all sorts of shapes. It is to remember that the curves represent the differing ways we behave as buyers and sellers; and the point of the diagrams, with their crossing curves, is to make clear that as prices change, these differing behaviors can be made mutually compatible, a remarkable fact, when you think about it.

What we have learned so far is that markets, left to themselves, will arrive at an equilibrium price at which they will clear. But markets are rarely, if ever, left to themselves. Buyers and sellers are constantly changing their tastes or experiencing changes in their incomes and costs. As a result, they will bid for more goods at the old price, or will not be willing to buy as much as before. Sellers, too, find themselves willing and able to supply larger or smaller quantities to the market at each price. No supplier or demander actually knows the shapes of the neat supply and demand curves that we so easily draw. What then?

The answer, of course, is that prices change. When we are willing and able to buy more, we say that demand rises, and everyone knows that the effect of rising demand is to lift prices. We can see this in the first simple graph following. The solid lines show supply and demand and equilibrium price *before* some change—say, higher incomes—has boosted demand. The dashed line shows what happens to demand when incomes rise, and what happens to price as a result. It goes up. Of course the mechanism also works in reverse. If incomes fall, so does demand—and so does price.



Just to round the thing out, we can also show in a graph what happens when sellers are less willing to supply goods at the same quantities, perhaps due to a rise in costs. When supply decreases, prices rise, as the second figure following makes plain. If supply increases, prices fall, as we can also see.



THE MARKET AS A RATIONING SYSTEM

Now look at what this shows us. All the buyers and sellers who can afford and are willing to pay the equilibrium price (or more) will get the goods they want. All those who cannot, will not. So, too, all the sellers

who are willing and able to supply the commodity at its equilibrium price or less will be able to consummate sales. All those who cannot will not.

Thus the market, in establishing an equilibrium price, has in effect allocated the goods to some buyers and withheld it from others. It has permitted some sellers to do business and denied that privilege to others. Note that the market is, in this way, a means of excluding certain people from economic activity, namely customers with too little money or with too weak desires, or suppliers unwilling or unable to operate at a certain price. It is, in fact, a rationing mechanism!

Our view of the price system as a rationing mechanism helps to clarify the meaning of two words we often hear as a result of intervention into the market-rationing process: shortage and surplus.

In everyday language we often say that there is a shortage of housing for low-income groups—meaning that poor people cannot find housing that they can afford. Yet as we have seen in every market there are always some buyers who are unsatisfied. We have previously noted, for instance, that in our market for blouses, all buyers who could not or would not pay \$19.95 had to go without. Does this mean there was a shortage? In economic terminology, no. A shortage in economic terminology does not mean there are no unsatisfied people in a market. It means only that no one who is willing and able to meet the going price is unable to get the goods he or she wants.

In a market that “clears,” no such buyers exist. To be sure, there may be many would-be buyers happy to buy blouses at, say, \$16.95, but there are none for sale at that price. Thus “shortage” only refers to buyers who are willing and able to pay the going price but who cannot get their demands filled at that price.

Why not? The answer must be that some nonmarket agency—in medieval times, perhaps the Church; in our day, more likely some government agency—has set the price below the equilibrium level. Now buyers who could not get blouses at \$16.95 come crowding into the store—only to find that there are not enough blouses to meet the swollen demand. Who will go without—the buyers who were willing and able to pay the higher price, or the new “lucky” buyers who are now able to pay the lower price? The answer is queues in stores to buy things before they are gone, under-the-counter deals to get on a preferred list, or black or gray markets selling goods illegally at higher prices than are officially sanctioned.

The opposite takes place with a surplus. Suppose the government sets a price floor above the equilibrium price, for instance, when it supports the price of corn above its free-market price. In this situation, the quantity supplied is greater than that demanded. In a free market, the price would fall until the two quantities were equal. But if the government continues to support the commodity, then the quantity bought by private industries does not have to be as large as the quantity offered by farmers. Unsold amounts—the surplus—will be bought by government.

Thus the words “shortage” and “surplus” mean situations in which sellers and buyers remain active and unsatisfied *because the price mechanism has not eliminated them from the marketplace*. This is very different from a free market where buyers and sellers who cannot meet the going price are not taken into account. Most people, who have no demand for fresh caviar at eighty dollars per tin, do not complain of a caviar shortage. If the price of fresh caviar were set by government decree at one dollar a pound, there would soon be a colossal shortage.

What about the situation with low-cost housing? Essentially what we mean when we talk of a shortage of inexpensive housing is that we view the outcome of this particular market situation with noneconomic eyes and pronounce the result distasteful. By the standards of the market, the poor who cannot afford to buy housing are only one more example of the rationing process that takes place in every market. When we single out certain goods or services (such as a doctor’s care) as being in “short supply,” we imply that we do not approve of the price mechanism as the appropriate means of allocating scarce resources in these particular instances. Our disapproval does not imply that the market is not as efficient a distributor as ever. What we do not like is the outcome of the market-rationing process. In other words, for all its worth, efficiency is not the only criterion by which we judge the market system.

That word efficiency brings us to the last and perhaps most important aspect of how markets work. This is the ability of markets to allocate goods and services more effectively than other systems of rationing, particularly planning in one form or another.

There is no question that the market is one of the most extraordinary social inventions in human history. If we recall the attributes of the pre-market societies of antiquity we may remember that they typically suffered from two difficulties. If they were run mainly by tradition, they tended to be inert, passive, changeless. It’s very hard to get things done

in a traditional economy if anything has to be done in a new way. For instance, a change in climate forces a search for new ways of growing food or catching game.

A command system, ancient or modern, has a different inherent problem. It is good in undertaking big projects but not in running a complex system. In addition, the presence of political power in the economic mechanism, either as a large bureaucracy or as an authority capable of sticking its nose into daily life, becomes an endless source of inefficiency and irritation.

Against these two difficulties, the price system has two great advantages: it is highly dynamic, and it is self-enforcing. That is, on the one hand it provides an easy avenue for change to enter the system, as imaginative or ambitious individuals try new approaches or invent new goods. In addition, it allows these individuals to get a fair trial without first getting anyone’s official permission: all you have to do is to sell your product!

The second (self-enforcing) attribute of the market is especially useful with regard to the rationing function. In place of ration tickets, with their almost inevitable black markets or cumbersome inspectorates or queues of customers trying to be first in line, the price system operates without any kind of visible administrative apparatus or side effects. The energies that must go into planning, or the frictions that come out of it, are alike rendered unnecessary by this remarkable self-policing mechanism. With all its difficulties, which we have by no means fully enumerated or examined, it is this capacity for self-adjustment and self-correction that sets economics apart from—although by no means above—its sister social disciplines.

That always comes as a surprise. We think of rationing as a formal, inflexible way of sharing goods—one ticket, one loaf of bread. This seems just the opposite of the free, unimpeded flux of marketplace. And in some ways it is indeed as different as can be. Just the same, the price mechanism performs a rationing function, exactly as do ration tickets. Money can be thought of as a system of flexible ration coupons. Indeed, there is nothing more important to grasp than this central purpose that markets serve. They are simply sophisticated rationing mechanisms.

On the other hand, the system has the defects of its virtues. If it is efficient and dynamic, it is also devoid of values. It recognizes no valid claim to the goods and services of society except those of wealth and

income. Those with incomes and wealth are entitled to the goods and services that the economy produces; those without income and wealth receive nothing.

This blindness of the market to any claim on society's output except wealth or income creates very serious problems. It means that those who inherit large incomes are entitled to large shares of output, even though they may have produced nothing themselves. It means that individuals who have no wealth and who cannot produce—perhaps simply because they cannot find work—have no way of gaining an income through the economic mechanism. To abide just by the market system of distribution, we would have to be willing to tolerate individuals starving on the street.

Therefore, every market society interferes to some extent with the outcome of the price-rationing system. It does so when an "economic problem" crosses the line to become a "social problem." In times of military emergency the nation issues special permits that take precedence over money and thereby prevents the richer members of society from buying up all the supplies of scarce and costly items. In depressed areas, it may distribute basic food or clothing to those who have no money to buy them. Historically speaking, it has used taxes and transfers to an ever-increasing extent to replace the ration tickets of money in accordance with the prevailing sense of justice, rather than by the standards of efficiency. It is, in fact, in the tension between the claims of efficiency and those of justice that much of the division between conservative and liberal points of view is to be found.

THIRTEEN

Where Markets Fail

Up to this point we have been concerned with how markets work. Now we must look into some situations where they don't. One of these has to do with instances where marketers lack information and have no way of making intelligent decisions and where, therefore, the results of the market will reflect ignorance, luck, or accident rather than informed behavior. A second case involves what are known as "pure public goods"—goods whose intrinsic characteristics mean that they cannot be allocated efficiently by private markets. Closely related in a third category of goods whose purchase, or failure to purchase, affects third parties' welfares and not just those of buyers or sellers. Market economies also need some social investments with longer payback periods than private markets are prepared to endure. Finally, there are some goods, health care being an example, which the public simply wants to see more equally distributed than goods and services in general. We'll take these up, one at a time.

THE PREVALENCE OF IGNORANCE

The whole market system is built on the assumption that individuals are *rational* as well as acquisitive—that marketers will have at least roughly accurate information about the market. A good example of the importance of information is the situation faced by the tourist in a bazaar of a country where he or she doesn't know a word of the lan-

guage. Such a buyer has no way of knowing what the price of an article ought to be. That's why tourists so often return triumphantly with their hazaar trophies—only to discover that the same items were for sale in their hotel at half the price.

Without correct or adequate information marketers obviously cannot make correct decisions. But typically many marketers do *not* have adequate information. Consumers guide themselves by hearsay, by casual information picked up by random sampling, or by their susceptibility to advertising. Who has time to investigate which brand of toothpaste is really best or even tastes best? Even professional buyers, such as industrial purchasing agents, cannot know every price of every product, including all substitutes.

The lack of information can be remedied, at least up to a point, but the remedy costs money or its equivalent—time. Few of us have the resources or patience to do a complete research job on every item we buy, nor would it even be necessarily rational to do so. Thus a certain amount of ignorance always remains in all markets, causing prices and quantities to differ from what they would be if we had complete information. These differences can be very great, as anyone knows who has ever discovered, with sinking heart, that he or she paid "much too much" for a given article or sold it for "much too little."

Another important cause of market failure lies in the destabilizing effect of "perverse" expectations. Suppose that a rise in prices sets off rumors that prices will rise still more. This is common experience in inflationary times, when the mounting prices of goods leads us to expect that prices will be still higher tomorrow. In this case, we do not act as ordinary demanders, curtailing our purchases as prices go up. Instead, we all rush in, with the result that prices go higher still. Meanwhile, sellers, seeing prices go up, may decide not to take advantage of good times by increasing their offerings, but to hold back, waiting for tomorrow's even higher prices. Thus demand goes up and supply goes down—a recipe for skyrocketing market prices.

Such perverse price movements can lead to very dangerous consequences. They play a major role in the cumulative, self-sustaining processes of inflation or collapse. They can cause commodity prices to shoot to dizzying heights or plummet to the depths. At its worst, perverse behavior threatens to make an entire economy go out of control, as in the case of hyperinflations or panics. At best, it disrupts smoothly orderly markets and brings shocks and dislocations to the economy.

Can these market failures be remedied? Some can; some cannot. Ignorance can certainly be reduced by better economic reporting or by truth-in-advertising laws. Perverse behavior can be lessened by persuasive pronouncements from important public figures.

But we must recognize that there is a residue of arbitrariness even in the best-intentioned remedies. Take the matter of consumer information. We "inform" the consumer, through labels on cigarette packages, that smoking is dangerous, but we do not prohibit the advertising of cigarettes. We spread market information by having the incomprehensible contents of medications printed on their containers, but we allow the consumer to be misinformed through advertising that claims superiority of one kind of aspirin over another.

Why? There is no clear rationale in these cases. Essentially we are trying to repair omissions in the market system—injecting information so that consumers can make better choices—without becoming paternalistic. Perhaps we think more mistakes would be made by a government trying to prevent individuals from making mistakes than individuals would themselves make. Or perhaps we just don't want the large governments that would be necessary to prevent individual mistakes.

That is perhaps as it should be. But the consequence is that the market will continue to produce less than wholly satisfactory or efficient results because a residue of ignorance or misinformation is allowed to remain—or remains despite our best efforts.

PURE PUBLIC GOODS

Now we must turn to the range of problems that derive from the fact that certain kinds of output in our system do not have the characteristics of the ordinary goods or services that allow them to be sold in private markets. We call such outputs *pure public goods*. Since pure public goods are not easy to define, let us start by illustrating the properties of goods such as defense, the national weather service, or lighthouses. Such goods have three peculiar characteristics:

First, the consumption of a public good by any one individual does not interfere with its consumption by another. A lighthouse is as effective for ten boats as for one. A weather service is as useful for one hundred million TV viewers as for one hundred. By way of contrast, private goods—the food, clothing, or doctors' services that we use—cannot also be consumed by you.

Second, no one can be excluded from the use of a public good. We can deny you the use of your cars. But there is no way of denying you the use of our national defense system.

Last, with normal goods our private consumption depends on our individual decisions to spend or not spend our incomes. But there is no way that we can, by ourselves, buy defense, weather services, or a light-house service. * We must agree how much to buy!

As a result of these three characteristics there is no way to set up a market where citizens will be willing to pay voluntarily for national defense even though everyone values it.

ANOTHER REASON WHY ECONOMISTS DISAGREE

Markets “clear,” equating supply and demand, without the bureaucratic problems of nonmarket allocations. No one disagrees with that. *But how long will they take to clear? How much political and social disarray will they create in the process of clearing?* There is lots of room to disagree about that. It is in fact another of the reasons that economists often fail to see eye-to-eye about things.

By and large, conservative economists stress the speed of market clearing and minimize the negative side effects that a market’s dynamism creates. Liberals often look at the other side of the same coin. They see markets that adjust slowly with a lot of adverse income effects during the adjustment process. For example, think of U.S. government agricultural price supports for commodities such as corn. If subsidies were to be eliminated quickly, per bushel prices would plunge, driving a lot of inefficient farmers out of business. In the end farming would become more efficient, but during the transition a lot of farm families would be thrown off their farms and be forced to find alternative sources of employment at lower wages than what they had been earning in farming. Many rural communities would disappear and others would become much smaller.

In this case the divisions in opinion tend not to be those between liberal and conservative economists but between economists who live in farm states and those who don’t. Which side is right? The answer is not

*Not even if we were immensely rich or absolute monarchs? In that case we would not have a market system, but a command economy catering to one person. Then indeed there would be no distinction between public and private goods.

merely one of establishing (if we could) a timetable for market movements or a count of the persons affected by its movement. It is also a matter of the importance we attach to the benefits of those whom a free market assists, versus the costs to those who are shouldered aside. What value does one place on the family farm? There is no “right” answer to these questions, and that is why economists will continue to disagree about such things as agricultural subsidies.

EXTERNALITIES

Our third source of market failure is closely connected with the attributes of public goods. It is the problem of allowing for what economists call the *externalities* of production; that is, for the effects of the output of private goods and services on persons other than those who are directly buying or selling or using the goods in question.

The standard example of an externality is the smoke from the local factory. The smoke imposes medical bills and cleaning bills on households that may not use any of the factory’s output. Or take the noise near a jetport. That damages the eardrums—and lowers the real estate values—of individuals who may never benefit from the propinquity of the airport, indeed who may never fly.

Externalities bring us to one of the most vexing and sometimes dangerous problems in our economic system—controlling pollution.

What is pollution, from an economic point of view? It is the production of wastes, dirt, noise, congestion, and other things we do not want. Although we don’t think of smoke, smog, traffic din, and traffic jams as part of society’s production, these facts of economic life are certainly the consequences of producing things we do want. Smoke is a part of the output process that also gives us steel or cement. Smog arises from the production of industrial energy and heat, among other things. Traffic is a by-product of transportation. In current jargon, economists call these unwanted by-products “bads,” to stress their relation to things we call “goods.”

The basic reason that externalities exist is technological: we do not know how to produce many goods cleanly, i.e., without wastes and noxious by-products. But there is also an economic aspect to the problem. Even when we do know how to produce cleanly, externalities can exist because it is cheaper to pour wastes into a river than to alter the manufacturing process to eliminate waste. That is, it is cheaper for the

individual or the firm, but it may not be cheaper for the community. A firm may dump its wastes in a river “for free,” but people living downstream will suffer the costs of having to cope with polluted water. Yet the people buying paper, not living in the communities affected by paper production, are only interested in buying cheap paper. They will not voluntarily buy clean (expensive) paper.

Finally, we should note that some externalities are not “bads,” but “goods.” A new office building may increase the property value of a neighborhood. Here is a *positive externality*. The benefit gained by others results from the new building but is not paid to the owners of that building. Such externalities give some private goods the partial attributes of public goods.

Faced with the ugly view of smoke belching from a factory chimney, or sludge pouring from a mill into a lake, automobiles choking a city, or persons being injured by contaminants, most ecologically concerned persons cry for regulation: “Pass a law to forbid smoky chimneys or sulfurous coal. Pass a law to make mills dispose of their wastes elsewhere or purify them. Pass a law against automobiles in the central city.”

What are the economic effects of regulation? Essentially, the idea behind passing laws is to internalize a previous externality. That is, a regulation seeks to impose a cost on an activity that was previously free for the individual or firm—although not free, as we have seen, for society. This means that individuals or firms must stop the polluting activity entirely or bear the cost of whatever penalty is imposed by law, or else find ways of carrying out their activities without giving rise to pollution.

Is regulation a good way to reduce pollution? Let us take the case of a firm that pollutes the environment in the course of producing goods or services. Suppose a regulation is passed, enjoining that firm to install antipollution devices—smoke scrubbers or waste treatment facilities. Who bears this cost?

The answer seems obvious at first look: The firm must bear it. But if the firm passes its higher costs along in higher selling prices, we arrive at a different answer. Now a little economic analysis will show us that the cost is in fact borne by three groups, not just the firm. First, the firm will bear some of the cost because at the higher price, it will sell less output. How much less depends on the price sensitivity of demand for its product. But unless demand is totally insensitive, its sales and income must contract.

Two other groups also bear part of the cost. One group is the factors of production—labor and the owners of physical resources. Fewer factors will be employed because output has fallen. Their loss of income is therefore also a part of the economic cost of antipollution regulation. Last, of course, is the consumer. Prices will rise so that the consumer must also bear some share of the cost of regulation.

Offsetting all these costs is the fact that each of these three groups and the general public now have a better environment. There is no reason, however, why each of these three groups, singly or collectively, should think that its benefit outweighs its cost. Most of the benefit is likely to go to the general public, rather than to the individuals actually involved in the production or consumption of the polluting good or service.

Thus a regulation forcing car manufacturers to make cleaner engines will cost the manufacturers some lost sales, will cost the consumer added expense for a car, and will reduce the income going to land, labor, and capital no longer employed making engines. As part of the public, all three groups will benefit from cleaner air, but each is likely to feel its specific loss more keenly than its general gain.

Is regulation useful? Case by case, it's often hard to say. That is why economists tend to apply a general rule: Regulations are good or bad, *mainly depending on their ease of enforcement*. Compare the effectiveness of speed limits, which attempt to lessen the externality of accidents, and of regulations against littering. It is difficult enough to enforce speed laws, but it is almost impossible to enforce antilittering laws. On the other hand, regulation of the disposal of radioactive wastes is simpler to enforce because the polluters are few and easily supervised.

This in turn is largely a matter of cost. If we were prepared to have traffic policemen posted on every mile of highway or every city block, regulation could be just as effective for speed violations or littering as for radioactive waste disposal. Obviously the cost would be horrendous, and so would most people's reactions to being overpoliced.

A second way to cope with pollution is to tax it. When a government decides to tax pollution (often called effluent charges), it is essentially creating a price system for disposal processes. If an individual company found that it could clean up its own pollutants more cheaply than paying the tax, it would do so, thereby avoiding the tax. If the company could not clean up its own pollutants more cheaply than the tax cost,

which is often the case, it would pay the necessary tax and look to the state to clean up the environment.

The effluent charge looks like, but is not, a license to pollute. It is a license that allows you to produce some pollutants for a price. Prices could be set to make all pollution prohibitively expensive but are usually set to allow some pollution since the environment has some "free" self-cleaning capacity.

As a result of effluent charges, an activity that was formerly costless is no longer so. Thus, in terms of their economic impacts, these charges are just like government regulations. In fact, they are a type of government regulation. The difference is that each producer can decide whether it pays to install clean-up equipment and not pay the tax, or to pollute and pay whatever tax costs are imposed.

Which is better, regulation or taxation? Practical considerations are likely to decide. For example, taxation on effluents discharged into streams is likely to be more practical than taxation on smoke coming from chimneys. The state can install a sewage treatment plant, but it cannot clean up air that is contaminated by producers who find it cheaper to pay a pollution tax than to install smoke-suppressing equipment. Moreover, to be effective, a pollution tax should vary with the amount of pollution; a paper mill or a utility plant would pay more taxes if it increased its output of waste or smoke. One of the problems with taxation is that of installing monitoring equipment. It is difficult to make accurate measurements of pollution or to allow for differences in environmental harm caused by the same amount of smoke or noxious gasses or just plain heat coming from two factories located in different areas.

The third way of dealing with pollution is to subsidize polluters to stop polluting. In this case the government actually pays the offending parties to clean up the damage they have caused or to stop causing it. For example, a township might lessen the taxes on a firm that agreed to install filters on its stacks. This is, of course, paying the firm to stop polluting.

There are cases when subsidies may be the easiest way to avoid pollution. For example, it might be more effective to pay homeowners to turn in old cans and bottles than to try to regulate their garbage-disposal habits or to tax them for each bottle or can thrown away. Subsidies may therefore sometimes be expedient means of achieving a desired end, even if they may not be the most desirable means from other points of view.

LENGTHENING TIME HORIZONS

Now consider another instance of market failure far removed from those we have mentioned. It has to do with the time horizon that can be rationally applied to market processes—if by "rational" we mean profitable. In a word, will markets provide a setting in which very long-term, very risky, but potentially invaluable research and development take place?

Consider what are probably the two hottest private industries in America today—biotechnology firms and the new telecommunications Internet firms. How did these two industries come into existence?

In the early 1960s the federal National Institutes of Health started spending several billion dollars per year on research and development in what was then called biophysics. Seminal breakthroughs followed—the double helix, DNA, recombinant DNA, etc. Twenty-five to thirty years later a big important profitable private industry with tens of billions of dollars in sales came into existence. But no private firm using normal private decision-making rules would ever have made these original investments. Risks were too high and the time lags until profits could be made were too long. Using discounted net present values (the normal market mechanism for evaluating the value of future returns) today's market value of a dollar that will not be received until ten years from now is approximately zero.

The Internet started twenty-five years ago as a nuclear-bomb-proof communications system; thereafter as a National Science Foundation project; and only recently as a field where firms can make a lot of money. That last would not have happened without social investments made with time horizons far beyond those of private firms.

Or consider education. No hard-nosed capitalistic mother or father would ever invest in sixteen years of education for their children. Sixteen years of money in with no money out—the payoffs are too uncertain and too far into the future. No society has ever become literate solely based upon private education. Yet nothing pays off economically for a society more than having an educated work force.

As a result, investments in education, infrastructure, and research and development have to be at least partly financed by governments. Markets underprovide them.

The trouble is that markets distribute goods and services in accordance with the distribution of income and wealth. Those with money

get; those without money do not get. For many products, distributions based upon market incomes yield acceptable social outcomes. But there are some products, such as health care, where we, as a society, have far more egalitarian preferences. We aren't willing to see ourselves, or others, go without health care simply because we do not have enough money to pay for health care—the market result. As a result governments interfere with the market, helping to pay for health care for the elderly (Medicare); and fully paying for it with the poor (Medicaid). Subsidized private health insurance helps those in-between with special tax breaks.

PUBLIC EXPENDITURES

When private markets don't work, the usual remedy is government. How do we then determine the level of provision of such publicly provided goods? We eschew the market mechanism and avail ourselves of another means of decisionmaking: voting. We vote for the amount of public expenditures we want; and because voting is a curious mechanism, sometimes we oversupply ourselves with these goods and sometimes we undersupply ourselves. One of the reasons that voting is a curious mechanism is that there is no way of doing it out in small pieces; the way we spend our income. Our vote is Yes or No. As a result, we may swim in health care and starve in education because health care has "friends in Congress" and education does not.

Is there a remedy for the problem? Some economists have suggested that we should try to bring as many public goods as possible into the market system by getting rid of their public characteristics. We could charge admission to the city's parks, so that we could produce only as much park service as people were willing to buy. We could charge tolls on all roads, even streets, and limit the building or repair of highways to the amount of private demand for road services. We might limit the use of law courts to those who would hire the judge and jury. Public policemen could be replaced with private policemen who would only protect those who wear a badge attesting to their contribution to the police fund.

Such a privatization of public goods might indeed bring the level of their production up, or down, to the amount that we would consume if they were strictly private goods, like cars or movie tickets. The problems are twofold. First, there are often technical difficulties in making

many public goods into private ones. A missile-defense system cannot be tailored to protect some people and not others.

Second, the idea offends our sense of justice. Suppose that we could convert defense into a private good. The defense system would then defend only those who bought its services. Presumably the more you bought, the better you would be defended. Few believers in democracy would like to see our national defense converted into a bastion for the rich. Nor would we remove from public use the law courts, the schools, the police, and so on. Unlike private goods, which we have the privilege of buying from our incomes, public goods are thought of as our rights. We are not willing to tell people that they must die on the streets since they cannot pay for health care.

There are valid arguments and clever techniques for returning some public goods into the market's fold. Historically it was difficult to imagine charging a toll for each city street, but with bar codes on cars and sensors spread around town, what was before too expensive and cumbersome to contemplate might now be feasible! The main point to keep in mind is that it is impossible to make all goods private, and for the ones that should remain public, the market cannot be used to establish a desirable level of output. Here the market mechanism must give way to a political method of making economic decisions.

THE MARKET IN REVIEW

We should keep in mind one theme of this chapter. It is that a market system has weak spots or ineffective areas peculiar to its institutional nature. The remedy requires political intervention of one kind or another—regulation, taxation, or subsidy—for there is no recourse other than political action when the self-regulating economic mechanism fails.

This is not a conclusion that should be interpreted as a kind of general plea for more government. Many economists who severely criticize the market want less government—certainly less bureaucratic, nonparticipatory, nondemocratic government. The point, however, is to recognize that the existence and causes of market malfunction make *some* government intervention inescapable. We can then seek to use government power to repair individual market failures in order to strengthen the operation of the system as a whole.

After so much criticism of the market system, perhaps it is well to