ONE

The Only Natural Economy

Flowers in all their colors covering an area the size of 125 soccer fields are what you see if you visit the world's largest flower market, in the Dutch village of Aalsmeer. The scale is astounding. Seven million roses, three million tulips, two million chrysanthemums, and eight million other flowers and potted plants pass through on a typical morning. Some two thousand buyers bid U.S.$5 million for them.[1]

The flowers are flown in from as far away as Colombia, Kenya, and Zimbabwe. While shipping flowers to the Netherlands might seem akin to taking coals to Newcastle, the Dutch today are in the business of running the global flower trade. The marketplace is organized so expeditiously that the flowers are still fresh when they reach their ultimate destinations all around the world.

A worldwide market in cut flowers, delicate and perishable as they are, could not exist without modern technology. It was not until the late 1980s that countries like Kenya became significant suppliers. Efficient air transportation and telecommunications are needed to move roses from a grower near Nairobi to Aalsmeer and then on to a buyer, say, in Seoul, all in less than a day. Electronic devices keep track of the flowers as they move through the auction house. The "Dutch clock" method of bidding allows the thousands of auctions to run in a few hours. A gigantic clock, to which every bidder is wired, dominates the front of each auction hall. As each lot of flowers is towed by, the clock's hand starts at a high price and rotates through lower prices until one of the bidders stops it with a push of a button. Computers then automatically organize the flowers' delivery to the buyer's address.

Sophisticated as its processes are, the core of the global flower market—competitive buying and selling—is as old as civilization. The Aalsmeer market marries high technology to the time-honored practices of the bazaar.

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On November 9, 1989, the people of Berlin joyously tore down the wall that for thirty years had divided their city. As the wall fell, so did communism and the planned economy. On April 30, 1995, the U.S. government ceased controlling the internet. As entrepreneurs devised procedures for online buying and selling, electronic commerce burgeoned. These two dates denote the beginnings of what has become, for good or for ill, the age of the market.

The reinvention of markets did not begin with the internet or the end of central planning. Markets have been around as long as history and have been incessantly reinvented. The first cities, in the Fertile Crescent (today's Iraq), built trading links. Donkeys and camels carried goods—precious stones, ivory, weapons, spices, frankincense, and myrrh—between cities such as Babylon and Ur. As a by-product of their trading activities, the merchants spread new ideas and inventions. Money, the hub of markets, appeared early. You can see the progress of civilization depicted in an archeological museum's collection of antique coins.

Culture developed alongside markets. Writing originated around five thousand years ago in the Fertile Crescent as a means of recording economic information. The earliest known written documents—marks baked in clay—are tallies of livestock, grain, and oil. These written records were used by tax collectors and merchants. Mathematics also was invented in the Fertile Crescent as an aid to buying and selling, arithmetic being needed to compute costs and set prices.

In the Agora, the central marketplace in ancient Athens, stallholders clustered together according to their wares. Sellers of fish were in one area, meat was sold in stalls grouped in another area, clothing in another. Sellers of more valuable items like perfumes and jewelry had a special building. Potters making the storage jars and tableware that we now see in museums had their own section, as did metalworkers crafting keys, bronze mirrors, tools, and bells. Beyond just a marketplace, the Agora was the heart of Athens, the site of athletic contests, political meetings, theatrical performances, and religious festivals.[3]

The colors, noises, and smells of the Agora were probably much as in any

bazaar of today, an extravagant example of which is the camel fair held once a year in the small town of Pushkar in India's desert state Rajasthan. The fair began centuries ago as an adjunct to a Hindu religious pilgrimage, Pushkar being where Lord Brahma, the creator, is believed to have dropped a lotus blossom petal and miraculously formed a lake. More camels are for sale than you thought you could ever see in one place: fifty thousand or so. It is a bustling, dusty, noisy scene. Snake charmers, musicians, gypsy dancers, jugglers, acrobats, and fire-eaters entertain the crowds. Women in vibrant saris sell food and handicrafts. There is camel racing and camel polo, with gamblers raucously urging on their favorites. All the while thousands of camels, meticulously groomed for the occasion, are being haggled over.

The bazaars of today's global village are on the internet. Quickly and cheaply connecting people anywhere in the world, the internet has transformed markets by allowing exchanges between buyers and sellers who might not otherwise find each other. By logging on to the global electronic shopping mall, you can purchase almost anything you might want.

Governments overruled markets for much of the twentieth century, most notably in communist countries like the Soviet Union and China, replacing them with their antithesis, central planning. Bitter letdown followed, as these economies stagnated. The failure of the centrally planned economies has made governments around the world more modest about what they can do, recognizing that an economy works well only when much of it is left to markets. In Russia, China, and elsewhere, the economy has been painfully rebuilt, sometimes in ways that prompt us to reexamine what we thought we knew about markets.

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What do we mean by "a market"? A market for something exists if there are people who want to buy it and people who want to sell it. The dictionary defines a market as "a meeting together of people for the purpose of trade by private purchase and sale," and "a public place where a market is held."[4] This does not go deep enough, though. What characterizes a market transaction?

Decision-making autonomy is key. Participation in the exchange is voluntary; both buyer and seller are able to veto any deal. They are separate entities. Controlling their own resources, the participants in a market, in deciding how those resources are to be used, are not obliged to follow others' orders. They are free to make decisions—to buy, to sell, to exert effort, to invest—that reflect their own preferences. Their choices are not completely free though: they are constrained by the extent of their resources and by the rules of the marketplace.

If people lack autonomy, then their dealings are not, by this definition, market dealings. Where an authority relationship exists—one party is in charge of the other, or a higher authority is in charge of them both—then any transactions are of some other category; they are not market transactions.

For those who are poor, the freedom that is the essence of markets may be very circumscribed. "Let them eat cake" is unhelpful advice for those who cannot afford bread. Bargaining power between buyer and seller is sometimes quite unequal. Being able to veto any deal does convey some bargaining power, but not necessarily much. Nevertheless, the opportunity to agree to an exchange or to decline it is a kind of freedom. Some choice, even if it is narrow, is usually better than none.

Competition, while not a defining feature of a market, is usually present and adds to the autonomy. Competition curbs any individual participant's power and, in most markets, prevents anyone from having a decisive effect on overall outcomes. A consumer can say, "No, I'll shop elsewhere." A competitive market means that alternatives exist.

A definition of a market transaction, then, is *an exchange that is voluntary: each party can veto it, and (subject to the rules of the marketplace) each freely agrees to the terms.* A market is a forum for carrying out such exchanges.

In addition to markets, there is also *the market*, an abstraction as in "the market economy" or "the free market" or "the market system." The abstract market arises from the interaction of many actual markets. By "a market" or "a marketplace," I mean a specific physical place or cyberspace where goods are bought and sold. By "the market" (the context will make it clear), I mean the abstraction.

A lot of transactions are excluded by this definition of a market. Markets are never ubiquitous. Even in the most market-oriented economy, a majority of transactions do not actually go through markets. The reach of markets is delimited. Three categories of nonmarket activity are prevalent.

One is unpaid work inside households, such as care-giving, housework, and preparing food for the family. The economic value of home labor is hard to assess, but the average full-time homemaker in the United States, by one estimate, produces outputs that if priced would be worth about $17,000 per year.[5]

Government activities such as building roads and supplying schools and the police force make up another nonmarket category. Government consumption (which means all government activities other than transferring money between people) amounts to a fifth or more of national income in modern economies.

The business taking place inside firms is yet another major nonmarket category. In the United States and similar economies, more transactions occur within firms than through markets. When General Motors procures an order of steering wheels, it makes a difference whether the steering wheel supplier is an independent firm or a GM division. Ownership does not change when goods move from one part of a firm to another, unlike when they move between firms or from firm to consumer. In market transactions, autonomous agents follow their own separate interests. Intrafirm deals, by contrast, are mediated not by the market but by the firm's rulebook, and are carried out—or at least are supposed to be carried out—in a manner that promotes not the individual goals of the decision-makers but the overall goals of the organization.

Why then is it called a "market economy," given that a majority of transactions, those inside households, firms, and government, are actually outside the market? It is a market economy because even these nonmarket transactions take place within the context of markets. The market transactions mold the economy overall.

No one is in charge of a market—or, rather, everyone is in charge. This decentralization brings dynamism. Markets empower people. The Czech playwright Vaclav Havel, a courageous dissident under communism and then president of his country as it dismantled its planned economy, has unique credentials to compare the market with its alternatives. "Though my heart may be left of center, I have always known that the only economic system that works is a market economy," he said. "This is the only natural economy, the only kind that makes sense, the only one that leads to prosperity, because it is the only one that reflects the nature of life itself. The essence of life is infinitely and mysteriously multiform, and therefore it cannot be contained or planned for, in its fullness and variability, by any central intelligence."[6]

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Some have invoked the supernatural to explain what they find extraordinary: that markets can work with no one in charge. The Reverend Richard Whately, a professor of political economy at Oxford University in the eighteenth century, believed the coherence of the market to be proof that God exists. If no human planner is guiding the market to the optimal outcome, God must be. The invisible hand is the hand of God.

A religious fervor characterizes some of today's fans of the free market. "The true spirit capital of the current capitalist economy is not material. It is moral, intellectual, and spiritual," declared George Gilder, an evangelist for libertarianism. He also said that entrepreneurship "most deeply springs from religious faith and culture" and that entrepreneurs "embody and fulfill the sweet and mysterious consolations of the Sermon on the Mount." Ronald Reagan liked to use the catchphrase "the magic of the market"—inadvertently bearing out the jibes about his "voodoo economics."

Carlos Fuentes, the novelist, derided what he calls economic fundamentalism, "with its religious conviction that the market, left to its own devices, is capable of resolving all our problems." Mocking market zealots, Harvey Cox, who happens to be a professor of divinity, said that for its true believers the market is like God in "the mystery that enshrouds it and the reverence it inspires." Like God, the market is avowed by its proselytizers to be "omnipotent (possessing all power), omniscient (having all knowledge), and omnipresent (existing everywhere)." These divine attributes, Cox continued, "are not always completely evident to mortals but must be trusted and affirmed by faith."[7]

Faith is not needed. The "hand" that guides the market may be invisible, but it is not actually supernatural. The market is not omnipotent, omnipresent, or omniscient. It is a human invention with human imperfections. It does not necessarily work well. It does not work by magic or, for that matter, by voodoo. It works through institutions, procedures, rules, and customs. One of my aims in this book is to demystify the market.

Textbook economic theory does not dispel the markets-are-magical notion, for it says little about how markets go about doing their job. Although economics is in large part the study of markets, the textbooks depict them abstractly. The supply-and-demand diagram, expounded in countless Economics 101 lectures, is a bloodless account of exchange. It leaves unexplained much of what needs to be explained. It tells us what prices can do, but is silent on how they are set. Supply and demand bypasses questions of how buyers and sellers get together, what other dealings they have, how buyers evaluate what they are buying, and how agreements are enforced. Three Nobel laureates noted this oddity. George Stigler found it "a source of embarrassment that so little attention has been paid to the theory of markets." Douglass North noted the "peculiar fact" that economics "contains so little discussion of the central institution that underlies neoclassical economics—the market." Ronald Coase complained that the market has a "shadowy role" in economic theory, and "discussion of the market itself has entirely disappeared."

The Nobel laureates' critique has now been addressed. Modern economics has a lot to say about the workings of markets. Theorists have opened up the black box of supply and demand and peered inside. Game theory has been brought to bear on the processes of exchange. Examining markets up close, the new economics emphasizes market frictions and how they are kept in check. In 2001, this work received recognition with the award of the Nobel Prize in economics to George Akerlof, Michael Spence, and Joseph Stiglitz for laying the foundation, as the Nobel citation said, "for a general theory of markets with asymmetric information." Expressed in mathematics and impenetrable jargon, these new ideas reside obscurely in the technical journals. They have, however, a deeply practical content.[8]

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Exchange is "one of the purest and most primitive forms of human socialization," the sociologist Georg Simmel wrote in 1900; it creates "a society, in place of a mere collection of individuals."[9] A market is a social construction. If it is to work smoothly, it must be well built. The term *market design* refers to the methods of transacting and the devices that serve to allow transacting to proceed smoothly.

Market design consists of the mechanisms that organize buying and selling; channels for the flow of information; state-set laws and regulations that define property rights and sustain contracting; and the market's culture, its self-regulating norms, codes, and conventions governing behavior. While the design does not control what happens in the market—as already noted, free decision-making is key—it shapes and supports the process of transacting.[10]

A workable market design keeps in check transaction costs—the various frictions in the process of making exchanges. These costs include the time, effort, and money spent in the process of doing business—both those incurred by the buyer in addition to the actual price paid, and those incurred by the seller in making the sale.[11] Transaction costs are many and varied.

Transaction costs can arise before any business is done. Locating potential trading partners may be costly and time-consuming. Comparing alternative sellers and choosing among them takes effort by the buyer. The quality of the goods for sale is often not immediately apparent, and the buyer may have to go to some trouble to evaluate it. If it cannot be reliably checked, the buyer might be reluctant to purchase.

In putting an agreement together, there are further transaction costs. Negotiations can be drawn out. Bargainers sometimes overreach in trying to squeeze out a good bargain, causing an impasse and spoiling what could have been a mutually beneficial deal.

After the fact, there are still other transaction costs. Monitoring work costs time and money. The enforcement of contracts and the prevention and settling of disputes do not come for free. If agreements are not watertight, productive opportunities may be forgone. A manufacturer making components like computer chips or car seats may make a uniform item and sell it to several firms rather than customizing to a single firm's specific needs, because customizing its production, though it would create more value, would leave it vulnerable to the sole customer's whims.

Transaction costs use up resources in ways that are unrelated to the actual value of the business to be done. In the extreme, transaction costs can cause markets to be dysfunctional. If market information is so inadequate that a buyer is unable to locate more than one seller, then that seller can exploit the fact that the buyer is locked in by charging an exorbitant price. A still more extreme market malfunction occurs if the costs of transacting are so high as to swamp any potential benefits from the deal. Transaction costs can thwart exchanges that would otherwise be worthwhile. Unemployment exists, for example, not simply because there are too few jobs, but also because transaction costs in the labor market prevent some employers and job seekers from connecting with each other. A new way of doing business that lowers transaction costs can benefit everyone.

Modern markets are sophisticated organizations. Markets for multifaceted products like automobiles and computers, and for labor and financial services, must solve a range of problems that might not arise with simpler items like clothing and food. One such issue is that a market works well only if information flows smoothly through it. An uneven distribution of information hinders negotiations and limits what can be contracted. Information transmission requires devices that ensure the communications are reliable. Another such issue is that a market works well only if people can trust each other. Trust requires mechanisms to bolster it since, regrettably, not everyone is inherently trustworthy. Many goods have hidden characteristics, so there must be some way of assuring buyers of the goods' quality. Trust is needed also in transactions that take time to complete. People are reluctant to invest in the absence of some assurance that the others' promises will be kept. For these and other reasons, a modern market economy needs a platform sturdy enough to support highly complex dealings.

When things work well, we take a market's design for granted. Where the costs of transacting are low, the devices that are serving to curb them are

almost invisible. By contrast, an inadequate design is easily observed, the symptom being a dysfunctional market. I will examine markets around the world. Looking at poor countries, where for one reason or another transaction costs are often high, we can see what is missing. Looking at affluent countries, we can watch new ways of doing business arising in response to new technologies.

Some of the pieces of a market's design are devised by the market participants themselves; other pieces are devised by the government. It is by spontaneous change, for the most part, that the rules of the market game develop, with the market participants designing better ways to transact. (I will refer to this aspect of market design as *informal* or *bottom-up*.) However, lowering transaction costs is a task not only for entrepreneurs, but also for public policy. The government has the responsibility to establish and maintain an environment within which markets can work efficiently. (I will refer to this aspect of market design as *formal* or *top-down*.)

A basic part of the government's role in market design is the defining of property rights. The surest way to destroy a market is to undermine people's belief in the security of their own property. But the government's role goes far beyond just assigning property rights.

Government actions to underpin markets began early. In the fifth century B.C., Croesus (the king of Lydia, in what is now Turkey, who gave us the expression "as rich as Croesus") issued gold and silver coins of guaranteed purity. Ensuring the fidelity of money aided the spreading of commerce through the ancient world. Today, speeding the economic growth of poor countries in Africa, Asia, and Latin America requires, among other things, revamping their market-supporting institutions, such as laws of contract, so as to lower transaction costs. Underdevelopment results, I will argue, from markets not doing their job properly. Even in affluent countries, the government must be ready to adapt the rules of the market game to accommodate new technologies. The new forms of communication over the internet, for example, have necessitated a reconsideration of the laws of copyright: should the law allow people to use the internet to send each other recorded music for free, or does unrestricted copying impair the market for recordings? In well-functioning economies such as those of North America and Western Europe, the state actively supplies laws and regulatory overview.

Biological evolution works, in Richard Dawkins's phrase, like a blind watchmaker.[12] Organisms like the human eye, being so wondrously complex, might appear to have been designed by a master watchmaker, but in fact were "designed" by goalless, gradual, unplanned natural selection.

Economic systems evolve in a similar way. A market develops via trial and error, through the market participants' everyday actions. There are two differences, though. The components of the evolving economic system are intelligent actors, not dumb molecules. The direction of change is consciously affected by forward-looking market participants, who help design the system. In addition, parts of any economic system, such as the laws, are imposed by the state or some other organization—in effect, by a sighted watchmaker, though not always a skilled one. Even the most decentralized economy has some central management: from the legislature, the courts, and regulatory agencies. No one is in overall charge, but some are guiding it.

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The history of football is a model for the development of a market. Football in its variants—soccer, rugby, American football—traces its lineage to games of folk football played in England since medieval days. Folk football had few rules. What rules there were had emerged spontaneously: they rested on custom and varied from village to village. Any number of people could play. Spectators could join the fray if they felt inclined. There was no referee, just a kind of social control by the players themselves.

Little skill was on display, just muscle. The aim was to get the ball, a stuffed pig's bladder, to the opponent's end of the field, using any means. At the start of play, the ball would be seized by some of the strongest players. "The rest of the players immediately close in upon them, and a solid mass is formed," reported a spectator at an 1829 game between the Derbyshire parishes of All Saints and St. Peters. "The struggle to obtain the ball, which is carried in the arms of those who have possessed themselves of it, is then violent, and the motion of human tide heaving to and fro without the least regard to consequences is tremendous." Players often fell, "owing to the intensity of the pressure, fainting and bleeding beneath the feet of the surrounding mob."

For hundreds of years, folk football developed incrementally. Then quite suddenly it metamorphosed into soccer and rugby. These changes came not, as in the preceding centuries, from the local level, but from the top down. National governing bodies, the Football Association in 1863 and the Rugby Football Union in 1871, were formed to codify the rules. Soccer and rugby began when a formal design was overlaid on the patterns of play that had evolved.

The players' skills, and not just their brawn, now came to be emphasized. Folk football had been a popular but somewhat discreditable pastime for English village people and schoolboys. In its new, structured forms, football swept the world. Soccer became the beautiful game it is today and the world's biggest sport. Rugby became a game of speed and strategy. By a further process of spontaneous evolution plus purposeful rule-setting, rugby in turn gave rise to the chesslike game of American football.[2] It was the explicit, enforceable rules that made the difference between folk football and its wildly successful descendants.

A typical market is born and grows like football. It evolves spontaneously, driven by its participants. It can operate with little or no formal structure—but only up to a point. To reach a degree of sophistication, its procedures need to be clarified and an authority given the power to enforce them. Only when the informal rules are supplemented by some formal rules can a market reach its full potential, with transactions being conducted efficiently and complex dealings being feasible.

An absolutely free market is like folk football, a free-for-all brawl. A real market is like American football, an ordered brawl.

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Markets provoke clashing opinions. Some people revile them as the source of exploitation and poverty. Others extol them as the font of liberty and prosperity. There is the dogma that markets are inherently harmful, so they should be routinely overridden by the state; and the dogma that markets are unambiguously beneficial, so we can leave everything to the free market. "For every problem there is a solution," said H. L. Mencken, "that is simple, direct, and wrong." Both of the simple, direct solutions regularly offered for all kinds of societal ills—"suppress the market" and "leave everything to the market"—more often than not are wrong.

"Find me a one-armed economist," President Herbert Hoover reportedly ordered, out of frustration with economic advisers who kept saying, "On the one hand . . . On the other hand . . ." Honest answers to the big questions in economics, however, are rarely free of caveats. On the merits of markets, most economists are unapologetically two-armed.

Markets are too important to be left to the ideologues. In fact, markets are the most effective means we have of improving people's well-being. For poor countries they offer the most reliable path away from poverty. For affluent countries they are part of what is needed to sustain their living standards.

Markets, then, are the most potent antipoverty engine there is—but only where they work well. The caveat is crucial. Over a billion Africans and Asians, according to the World Bank, eke out a living of sorts on one dollar or less a day.[13] That is more people than live in the affluent West. For a great many, it would seem, markets are not doing much good.

Governments in poor countries sometimes intervene excessively, to be sure, stifling markets and exacerbating the poverty. But that is not the entire story. If the state were to cease its counterproductive interventions, those countries would remain poor. In Calcutta, Cairo, or Tijuana, you see markets operating everywhere. You cannot steer clear of peddlers eager to sell you things. The problem in developing countries is not that markets are absent; it is that they are working badly.

Left to themselves, markets can fail. To deliver their full benefits, they need support from a set of rules, customs, and institutions. They cannot operate efficiently in a vacuum. If the rules of the market game are inadequate, as often they are, it is difficult and time-consuming to set them right. Many countries, to their citizens' detriment, have not yet been able to do so.

Markets are not miraculous. There are problems they cannot address. If their platform is unsound, they do not even solve the problems they are supposed to solve. Viewed as tools, markets need not be revered or reviled—just allowed to operate where they are useful.

In Russia in 1992, amid the ruins of communism, the state abruptly ceased controlling the economy. A few years later, when the country's progress toward a market economy had bogged down and the country was in a sorry state, a joke circulated on the streets of Moscow:

Q: How many people does it take to change a light bulb under communism?

A: Five: one to hold the light bulb, four to rotate the table he is standing on.

Q: Under capitalism, how many does it take?

A: None, the market will take care of it.

The Russian sarcasm underlines a key point. While markets can do a lot, they do not work automatically. Unaided, the market will not take care of things.

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"God is in the details," declared the architect Ludwig Mies van der Rohe. Tradespeople building to architects' plans would habitually grumble that "the Devil is in the details," and Mies van der Rohe was inverting their complaint. For markets no less than for buildings, it is the details of design that determine whether or not they work well. Both God and the Devil are in the details.

TWO

Triumphs of Intelligence

On a sidewalk in Hanoi in 1995, a policeman accosts a peddler. Methodically wielding his truncheon, he squashes the melons she had been selling and smashes her wooden cart. A crowd gathers and watches in eerie silence. None of the bystanders tries to intercede: they know not to tangle with the Vietnamese police. Completing his task, the policeman struts off, leaving a mess on the sidewalk. The peddler resignedly picks up a few splintered bits from the wreckage. It is not her first encounter with a sadistic policeman, nor her last. But she has to scrape together a living so she will persevere.

Hanoi's sidewalk peddlers—mostly peasant women in conical straw hats, often with small children in tow—sell fruit and vegetables and small household items. The city people dub the stalls "frog markets" because of the peddlers' agility in fleeing the police, carrying their goods in carts or in baskets on poles slung across their shoulders. The unlucky ones who are caught watch helplessly as the police destroy or steal their merchandise. Those who escape lay out their wares on another street corner. A Communist Party newspaper called on the city government to "sweep those wandering people out of Hanoi." Unregulated trading was anathema to the authorities, but they were unable to suppress it. The vendors' stubbornness reaffirms a Vietnamese proverb: "Trying to stop a market is like trying to stop a river."

Rwandans in refugee camps in Zaire (now the Democratic Republic of Congo), having escaped their country's murderous civil war, immediately