I N T R O D U C T I O N

THE WORLD SHRINKS AS CHINA GROWS

CHINA IS EVERYWHERE THESE DAYS. POWERED BY THE WORLD'S MOST rapidly changing large economy, it is influencing our lives as consumers, employees, and citizens. The words MADE IN CHINA are as universal as money: the nation sews more clothes and stitches more shoes and assembles more toys for the world s children than any other. But moving up the technological ladder, China has also become the world's largest maker of consumer electronics, pumping out more TVs, DVD players, and cell phones than any other country. And more recently, China is ascending even higher still, moving quickly and expertly into biotech and computer manufacturing. No country has ever before made a better run at climbing every step of economic development all at once. No country plays the world economic game better than China. No other country shocks the global economic hierarchy like China.

Even a casual glimpse at the news tells us that something large looms in China. The nation is making parts for Boeing 757s and exploring space with its own domestically built rockets. China has between 100 and 160 cities with populations of 1 million or more {America by contrast has 9, while Eastern and Western Europe combined have 36.). China is buying oil fields internationally and also signing exclusive oil and gas supply deals with Saudi and Russian companies. China is buying the world's scrap metal, as well as enormous amounts of steel, to fashion into products sold globally. The country is relentlessly positioning itself for ever-higher levels of industrialization. It's expordng computers with Chinese brand names. There are giant capital flows from industry to China now. It's where the world is investing. China is laying down fiber-

optic at a rapid rate. China, which tried mightily and tragically to leapfrog from an agrarian economy to an advanced industrial state under Mao Zedong, now leapfrogs over many of the technologies of mature industrial states. Its phone system is more wireless than wired, and many of its big cities will soon have the most advanced rapidtransit systems in the world. Here are two metaphors, both true: China is drinking milk these days. The tallest starting center in the NBA, Yao Ming, is Chinese.

In the past, China's enormous population was hard to feed and employ. Now China's one-fifth of humanity must be seen anew: as the biggest market ever. As the customers of Citibank, Disney, Nokia, GE, Toyota, and Microsoft. As the critical mass in the coming order. But even if you don't read the business pages, the impact of China's boom is hitting home in all sorts of ways both subtle and obvious that can be felt in our everyday reality:

• Mention an interest in China to your old friend who owns an industrial toolmaking shop and he confides that his factory, which was started by his father and has bought a comfortable suburban life for three generations of his family as well as good wages to hundreds of workers, "is getting killed by the people over there."

• Talk to your family plumber, and first he complains that he spends all day replacing broken Chinese parts, and then he takes from his bag a Chinese part he says is better, sheepishly adding, "They're actually pretty darn good now, and all we can get these days without spending a fortune."

• Run into a parent of a freshman from your daughter's high school class, a-mom you've seen for years at holiday concerts in which your two girls both play viola. The mom immigrated to the United States from China in 1995 to study solid-state physics and is now a researcher at the local medical school. She says she's going back to China to join a friend's business that develops software for MRI machines and other high-tech medical devices. What about her research at the hospital." She says the opportunities in China now are too big to miss and she does not want to blame herself later.

• Mention this story to another friend, a world-famous researcher who studies the lives of cells, and he tells you that American uni-

versity biology departments now exist, in essence, to transfer knowledge from old Jewish men to young Chinese women.

• Cross the street to the all-night city convenience store run by a family of Palestinian immigrants, and notice that behind the counter where cigarettes were once sold is a wall of no-name Chinese accessories for dozens of different brand-name cell phones—batteries, car adapters, earphones, and cases—none for more than $12. They're selling great, the man at the cash register says.

• Meet a smart old high school friend who always wore thick glasses, but whose nose is now bare. He teaches English at a giant private language school in Shanghai but is home to show off the results of his $600 laser eye surgery, performed, he says, in an ultramodern Chinese clinic for a tenth the price the procedure would cost at home.

• Grab breakfast at a diner in St. Joseph, Michigan. One table over sit four men, each somewhere between the ages of thirty and sixty. They look as if they are dressed for factory work, but at 10 a.m. they sit and discuss the layoffs in the local disc-brake and machining factory of Bosch, the giant German auto-parts manufacturer that is rapidly building up its capacity in China. The company is laying off thousands of workers at its plants throughout the state, it says, to stay competitive. The men lament that there are few places to turn for new jobs. Whirlpool, Clark Equipment, and other once-solid manufacturers used to thrive in the area, but now iheir factories are shuttered or just shells of their former selves.

• Notice that the Armani emporium on Via Manzoni in Milan, the Italian fashion capital, revises its list of sister stores worldwide to include Shanghai.

• Head for a dim sum lunch in Chinatown and see on the corner a somewhat bewildered young Chinese man, squat, strong, and weathered, looking as though he has come to work the American railroad boom a century too late. He leans on a large bundle, wrapped in a plastic tarp and tied with cellophane ribbon, that probably contains all his worldly goods. He is one of China's untold millions of rural migrants, but has somehow—perhaps with the help of a smuggler—found his way far past China's thriving ports. He will now compete for work on the low rung of America's domestic economy.

• A contractor shows you the home of a cHent who has renovated her master bath. He's replaced a long, old Formica countertop with an expanse of midnight blue marble, as ornately beveled as one might find in a Venetian spa. He sees your eyes widen and recommends the same for you, saying it's Italian, it's expensive, but it's worth it. After you complain about the price, you follow the contractor in his truck to a lumberyard. Inside are giant crates of precut granite for kitchens, bathrooms, and living room mantels. Everything on them is finished and glued. If you can work with one of these tops as is, the contractor tells you, the counter will cost $450, not $8,000. The yard's owner comes over. He says buy fast, because the crates only stay in the store a day or two before he sells out. He's been carrying the counters for a year. "A guy from China came by and said he had three quarries where they cut the stone and finished it. I tried it out. Now I can't get enough."
• Wake up in Santa Barbara, California, one morning to a sky that looks as though it is painted a shiny white. The morning's newspaper reports that the sunlight is playing tricks on a dust cloud that has drifted over the Pacific from China. The cloud contains particles of loose earth from deforested land mixed with arsenic and other industrial pollutants from the country's factories.
• Buy a real pair of Levi's jeans at Wal-Mart. They are cheaper than the new pair you bought twenty years ago.
• Get invited to a "purse party" by an officemate who says she is friends with the host, a United Airlines stewardess. Her apartment, decorated with paper lanterns and silk pillows, is piled high with the latest Louis Vuitton and Prada handbags, Burberry coats. North Face parkas, leather Timberland jackets, Ralph Lauren tops, and Chanel scarves. On her table is a valise with glistening Rolex, Bulgari, and Cartier watches. "Take a Coke from the cooler," she says. "Look around. Make an offer. Think cheap, it's all knockofFs." Leave with a North Face for $20 and sharp new watch for $35. She's doubled her money. You never look at a designer label the same way again.
• Pull your Honda Civic up to the gas pump. At $2.30 a gallon it costs $30 to fill the tank.
• Drive through Houghton, Michigan, a remote town on the state's

chilly Upper Peninsula. Stop by the student bookstore at Michigan Tech. On the Local Authors table is a book tided Being a Graduate Student in the U.S., written by two of the university's Chinese students. The cashier reports that the book sells well in China. Stop an Asian student on campus and ask how he heard about Michigan Tech. His university in Beijing has a strong relationship with the school and his professors told him about it, he tells you. When asked how he likes studying there, he says Michigan is cold, the food is bad, and it has been hard to blend in, except with the 140 other Chinese students. The technological education, however, is excellent.
• Stop at the auto supply store for windshield-wiper fluid. Half the store is now a showroom for small Chinese motor scooters, some of which look like half-Harleys, others like Ducatis. Most cost less

than $300.
• Attend dinner at the home of a discerning art collector. On the wall are four-foot-tall photographs of a ruined Chinese cityscapc. Invest in contemporary Chinese art, the collector says, it's the most interesting in the world right now, and once the Chinese themselves start buying, the prices will go sky-high.
• Take a trip to Paris to see its famous attractions and to stroll the Champs-Elysees, the boulevard whose national character is usually guarded with jealous fanaticism by the French. Yet for the first time in history, "the most beautiful street in the world" is surrendered to a non-French cultural event, a Chinese parade with seven thousand costumed musicians, acrobats, and dragon dancers. That night the Eiffel Tower is lit red and fireworks fill the sky to celebrate the Chinese lunar New Year. The festivities come at a time when France is sharply critical of its Western allies, the United States and Great Britain. The show also coincides with a visit by Chinese political leaders to France to seal broad strategic and economic agreements.
• Decide at last to put your old film camera away and plunge into digital photography. Photo magazines all rave about a small new Nikon, an engineering wonder that can shoot fast, capture dimly lit scenes that would foil its best film rival, and costs half the price of similar machines a year ago. Loyal customers of Nikon trust the

company for quality and innovative design. It is, after all, one of the marquee Japanese brands that helped build that country's reputation for manufacturing excellence. Holding the camera, then taking a round of test shots, confirms that this is another stellar product that only the Japanese could make. Inspect the camera more closely, however, and there in small print are the words "Made in China." A search on the Internet reveals that digital cameras from many Japanese, American, and Korean companies are made in the same Chinese factories.
• Visit an ailing elderly uncle who is home from rehab after yet another fall, but still unable to move about without help. He introduces you to Menardo, the caretaker sent by a nursing agency. Menardo is well dressed, his hair permed. On first meeting he says he is from the Philippines and has been working as a nurse for the last four months. Here in America he shares an apartment with his sister an hour away, but at home he owned a large house and had servants. He takes from his bag a brochure for his old business, a factory on Cebu Island that employed fifty workers making intricately woven straw and jute bags. He went out of business, he says, because Chinese manufacturers now sell similar bags for less than Menardo knew how to make them. It is all handwork, and his laborers made $30 a week. Chinese workers, he complains, make one-third less and work longer hours. Now he empties bedpans. With his American wage, he hopes for a new start in business, but it is hard for him to think what to make that will ever beat the Chinese on price.
China's miracle economy can come at you in a lot of ways, from all directions. And once China comes into view, it is hard not to see it everywhere.

The Supersized Workforce

Behind China's rapid economic ascendancy over the last twenty-five years is the basic fact of China's huge population. The numbers supersize nearly every facet of the country. China is home to close to 1.5 bil-

lion people, probably, which would make the official census count of 1.3 billion too low by roughly the population of Germany, France, and 1 the United Kingdom combined. Put another way, China's uncounted multitude, were it a country on its own, would be the fifth largest in the world.

Surprisingly enough, China is not home to the cheapest workforce in the world. Even at twenty-five cents an hour, Chinese workers cost more ^ than laborers in the poorer countries of Southeast Asia or Africa. In the world's most miserable corners, children carry rifles and walk minefields for less than a dollar a day. China is the world's workshop because it sits in a relatively stable part of the globe and offers the world's manufacturers a reliable, docile, and capable industrial workforce, groomed by government-enforced discipline.

The other great influence lately is the migration of hundreds of millions of peasants from the countryside now that the government allows them to leave. Indeed, the country's embrace of market capitalism over the last two decades and the end of government support for farmers are combining forces to all but evict peasants from the land. The migration is the largest in human history. It also has one of the least exact head counts: estimates of the number of people who have left for the cities to find work range from 90 to 300 million, numbers that even near the low end match the entire workforce of the United States. Move up i in the range and the number tops the U.S. and European workforces combined. By 2010, nearly half of all Chinese will live in urban areas, some of them urban metropolises with populations of a million-plus that didn't even exist a few years earlier.

What these numbers mean is that the productive might of China's vast low-cost manufacturing machinfe, along with the swelling appetites of its billion-plus consumers, have turned China's people into what is arguably the greatest natural resource on the planet. How the Chinese and the rest of the world use that resource will shape our economy and every other economy in the world as powerfully as American industrialization and expansion have over the last hundred years.

What the American Workers at the Harley Motorcycle Plant Knew

China's effects on the world are so great—and potentially explosive—that paradoxically it has been hard for those charged with seeing the big picture to grasp them. That, anyway, was the impression of workers and executives at the Harley-Davidson plant in Milwaukee when a trio of the most important economic officials in the Bush administration came to visit in the late summer of 2003. United States Secretary of Labor Elaine Chao, Secretary of the Treasury John Snow, and Secretary of Commerce Donaid Evans arrived by bus to trumpet an upturn in the economy with one of America's iconographic companies in the backdrop. They assumed that "Hog" makers, the leather-jacketed, flagflaunting individualists who produce America's last big motorcycle,

would cheer the administration's self-described pro-business tune.
But the crowd was decidedly chilly. A cold front was blowing in from China. The United States had lost 2.9 million manufacmring jobs over the previous five years. Wisconsin had lost ninety thousand, or one in six, of its manufacturing jobs since 2000.' The Harley crowd had a strong opinion as to why. The companies they grew up around were fading, with orders and jobs heading overseas. Challenged on China, a puzzled Elaine Chao could only offer that U.S. National Guard soldiers serving in Iraq would be guaranteed their jobs when they returned. John Snow seemed to confuse his references to the Chinese currency, the yuan, with the Japanese yi?^. The astonished audience grew edgy. More than taxes, more than budget deficits or the cost of the war on terror, speakers from the floor said, China was the top issue in their economic lives. For the assembled, how the country competed with China would determine if Wisconsin could hold on to the manufacturing base it had fought to rejuvenate.
The secretaries' tour took them throughout the Midwest to dozens of stops. All along the way they met the same angry questions on China, throngs with bullhorns full of fury. Among the angry were workers and managers alike, from the left and the right. Perhaps the most vocal were the Republicans' core constituency, small and midsize manufacturers struggling under the weight of the growing productive power of the world's most populous country.

Those events occurred only eighteen months before the publication of this book. Today, China's economy no longer takes government leaders by surprise. What they choose to do, now that they are informed, remains to be seen, especially since the popular reactions to China keep shifting rapidly—and often on the basis of competing American political and economic agendas. China is at one moment our greatest threat, the next our friend. It is siphoning off American jobs; it is essential to our competitive edge. China is the world's factory floor and it is the world's greatest market opportunity. China's industrial might saps opportunities from the developing world, but its hungry economy pulls poorer countries upward. China exports deflation; it stokes soarmg prices. China will boom; it will bust.
The truth about China is that, like all big countries, its contradictions are real. There are no easy answers in sight, just giant forces of change.

What the Numbers Tell Us—and What They Don't

By every measure, China's economy is growing rapidly. For nations, annual economic progress reports come in the form of the gross domestic product, the sum value of all goods and services traded in a nation's economy. In December 2005, Chinese government statisticians declared that their official measures of China's economy had been underestimating its size since 1993. In its first act of statistical revision covering the period, the government expanded its estimate of China's GDP by nearly 17 percent and tagged the economy's output at $1.98 trillion. The new numbers pushed China ahead of Italy as the world's fourth largest economy. The economy of the United States is still by far the world's biggest; with a 2004 GDP of $11.75 trillion, it is roughly six times the size of China's. (The world economy can also be measured by its own GDP; it hovered around $37 trillion in 2004.)
But there are still some extenuating circumstances regarding China's economic numbers. As with nearly all economic statistics from China,

their reliability is suspect. The Chinese have incentives to fudge. In the past, the complaint was almost always that officials nudged their numbers up, to show they were doing a good job. Now, a chorus of doubters argue the numbers remain unduly low. China's central planners are

increasingly directing development funds more aggressively to locales officially designated as poverty zones. Thus China's east-coast jurisdictions, already the overwhelming beneficiaries of economic reform, mask their own high growth rates so that government resources don't go elsewhere. Depressed provinces have corollary motives; they work to hold on to their label even if business is starting to percolate. Perhaps for that reason, the numbers that the central government collects from the provinces do not match the figures that regional and local governments report in their own literature. Statistical disparities have troubled or embarrassed the central government so much that it prosecuted for fraud twenty thousand local officials who had a hand in producing them."

Furthermore, the official numbers include only China's legal economy. Its underground economy, made up of businesses both unsavory and more mundane that lack a government stamp (and tax bill), is enormous but uncountable.

China's fourth-place ranking may also be too low because China pegs its currency to the dollar. The world's other major currencies go up and down against the dollar depending on market conditions. Usually a country with China's strengths would see the value of its national currency rise, but China uses the massive power of its foreign currency reserves to keep the world price of the yuan marching lockstep with the dollar no matter what its market price might otherwise be. I f the dollar had not dropped against the Euro or other world currencies over the last few years, China's place would be a notch or two higher.

Some analysts already see China's place as much higher. They take into account how much a dollar actually buys in the country, which, all things considered, is a lot more than it buys in the United States, Europe, Japan, and most other places in the world where it's worth spending a dollar. Some goods—Japanese machinery, Saudi oil, French fashions, Swiss pharmaceuticals, and an hour of time from an American marketing professor—have standardized global prices. But the supply and demand that govern most of China's economy—its labor, food, rent, bricks, doctors, China-made clothes and entertainment—fall into their own local balance. In China, one dollar buys about what $4.70 does in Indianapolis. The disparity, misleadingly labeled "purchasing power parity," is reconciled in the U.S. Central Intelligence Agency's estimation of China's place among the world's economies. China's $1.98 trillion economy, in the CIA's cal-

culations, looks more like one with a G D P of $7.3 trillion. Put another way, it makes more sense to think of China's economy as closer to fourfifths the size of the U.S. economy than it is to one-sixth.

And then there is China's rate of growth, its velocity into the economic future. For the most part, countries want to add as much as they can to their GDP. Over the last twenty-five years, China's economy has grown so fast and so large that it has taken on the mythic qualities of one of Mao's showcase farms. The United States, the country against which all others tend to measure themselves, has long had the strongest economic growth among the large industrialized democracies that make up the G7.^ Growth in the United States is also comfortably above the average of the membership of the Organization of Economic Co-operation and Development, the world's inner clique of thirty leading democratic, market economies that together account for two-thirds of the world's economic output. From 1982 through 2002, G D P growth in the United States averaged 3.3 percent. For U.S. politicians, those years with rates above 4 percent are blockbusters, those above 2 percent are comfortable, and years showing anything less amount to political poison. I n Latin America, which is often seen as China's rival in low-cost manufacturing, economic progress over the last quarter of a century has been, on average, worse than it was in the region during the Great Depression." In China, however, a growth rate twice as high as that of the United States would now be seen as a calamity. Chinese officials themselves say the country must grow at better than 7percent a year to create enough jobs to busy those regularly entering the job market.

China is so committed to economic growth that the Chinese often talk as though they can will it to happen. It is a necessary optimism that pervades official Chinese communication.* Orville Schell, the author of

*Not just through the press and government communiques, but in casual conversation. In the fall of 2003, as China was on course for yet another bell-ringing economic quarter, a Chinese diplomat new to Washington, D.C., but who had spent nine years as an economic analyst at China's embassy in Tokyo, offered his understanding of the Chinese government's prescription for japan, still struggling against years of bad economic news, deflation, and a weak stock market. "All Japan needs to do," the diplomat said emphatically over sushi and sake at a Japanese restaurant in Georgetown, "is to follow China's model and stimulate economic growth. First they ought to get their growth up to around seven or eight percent, and then they should push their stock market up. Then they can be more like China. We know we need economic growth to keep everything together, so we make a point of it."

Virtual Tibet and the dean of the school of journalism at the University of California, Berkeley, draws a parallel between the unity of focus the Chinese have demonstrated for anticapitalism and now for capitalism.' Schell argues that in both instances there is a willingness to suspend logic and see only bright tomorrows. Both cases lead to excess. In its capitalist present, China has been willing to overlook the dark side of modernization, seeing economic progress as the solution to all the country's challenges.

Not all of China's own economic experts are as blithely confident that sheer desire for growth can insure it. To the contrary. Recently, Chinese economic planners have worked hard to throw ice on their countrymen's most heated expectations. Overenthusiasm, they know, leads to economic bubbles. But controlling the power of the exuberant Chinese economy is difficult. I f history were predictive of China's present, the country's economy would have burst long ago. If bubbles burst when investors chase too many projects that have no real economic value—too many factories chasing the same hot markets, too many construction projects for the local market to fill, too many bad bank loans to unsound enterprises, too many high-flying stocks in companies with no history—then China deserves to be in shambles. Instead, every time the worst is predicted for China's economy, it seems to grow faster, create stronger industries, import and export more, and attract more foreign investment money.

Since China set about reforming its economy a generation ago, it has grown at an official rate of 9.5 percent." Countries in the early stages of economic reform often come up fast, but not like China. The country is closing in on a thirty-year run during which its economy has doubled nearly three times over.' The surge has no equal in modem history. Neither Japan's nor South Korea's postwar booms come anywhere close. Given the United States' recent rates of economic growth, it would take the U.S. twenty-five years to double. If the United States, which boomed in the eighties and nineties, had grown at China's rate since 1978, the U.S. economy would now be roughly its current size plus two Japanese economies added on. Nicholas Lardy, an economist at the Institute for International Economics, notes that China grew mightily even during the worldwide economic doldrums of 2001—2.

Thus does China's growth give it a place in the world economy that is far greater than its size. China still only makes one-twentieth of

everything produced in the world, but on the world stage it plays the role of a new factory in an old industrial town. It can spend, it can bully, it can hire and dictate wages, it can throw old-line competitors out of work. It changes the way everyone does business.

Americans tend to focus on the huge inequality in trade between the two countries. It is a worry Americans help to create by buying ever more from China's humming factories. In 2004, the Chinese sold the United States $162 billion more in goods than they bought. Contrary to common wisdom, the trade deficit with China does not mean that Americans are spending down the national wealth at a much faster pace than ever before. So far, most of China's gains with American buyers have come at the expense of the other countries that once lured American dollars, especially other Asian economies. Americans—and the world—get more stuff in the bargain. China is winning because it can make what others did for less money. It turns once expensive items, such as DVD players, power tools, and leather jackets, into affordable impulse items that call out from store shelves. Many of us who feel our homes are running out of closet and floor space because of piles of cheap toys, consumer electronics, tools, shoes, phones, and clothes don't realize that although these items may once have come to America from other countries, the current glut is because China is now the leading manufacturer of those goods and beating everyone on price. The U.S. garment industry, for example, was fading long before China started winning orders at the expense of other Asian and Latin American factories.

The American furniture industry is another story. Its strength has been sapped almost entirely by China alone. It shows how China can come after the specialty businesses of any country and decimate them in short order. (Now it is overtaking all global manufacturers in wooden furniture, too, a convenient trend that will give the world bookshelves and armoires in which to store its other China-made purchases.) From the year 2000 until 2003, China's exports to the United States of wooden bedroom furniture alone climbed from $360 million to nearly $1.2 billion. Over the period of China's $840 million rise, the workforce at America's wooden-furniture factories dropped by thirty-five thousand, or one of every three workers in the U.S. trade. China now makes 40 percent of all furniture sold in the United States, and that number is sure to climb. And American furniture jobs will continue to fall.

Yet one irony of China's success in the U.S. furniture market is that Chinese factories have done a better job of deHvering to American consumers quintessentially American and European designs than America's own workshops could. Big American furniture sellers, from department stores like JCPenney to specialty stores such as Crate & Barrel, now carry elaborately carved and painted period furniture at prices they charged a few years ago for spare "modern" styles that were easier to fabricate and required fewer man-hours.*

For other countries, China has become essential as a customer as well as a supplier. Japan and Germany have recently enjoyed large trade surpluses with the country because China has been the world's largest buyer of factory machinery, and it has needed the equipment Germany and Japan make in order—yes—to produce the machinery and electronics that Germany and Japan make. Resource-rich countries do well selling China the raw materials that get reshaped in its factories, and the energy resources it needs to power them. In 2003, according to the calculations of Stephen Roach, chief economist at Morgan Stanley, the Chinese bought 7 percent of the world's oil, a quarter of all aluminum and steel, nearly a third of the world's iron ore and coal, and 40 percent of the world's cement. The trend is for bigger amounts yet to come."

Future Shock

The most daunting thing about China is not that it is doing so well at the low-end manufacturing industries. Americans will be okay losing the furniture business to China. In the grand scheme of things, tables and chairs are small potatoes in the U.S. economy. The Japanese, for their

*The first floor of The Great Indoors, a national big-box interior-design chain that aims to sell luxurious living spaces to middle-class families, looks like a Sotheby's furniture auction. Tables and chests from every colonial and kingly period, highly buffed, well-weathered or hand-painted with flowers all over, make up the mock living quarters. Around it are the touches amateur Martha Stewarts love: leather hatboxes, satin tasseled pillows, jacquard ottomans, and gilded picture frames around real paintings of old-world seashores, horses and hounds, and Dutch children with cows. A large red sideboard covered with vines costs a mere $1,200. It looks enough like an heirloom costing $20,000 to make a buyer think he or she will never find something this great and this low-cost again. But he will. Costco and Sam's Club have sideboards just as fine, still in the box, for $200 less.

part, have lost the television business. The Italians are losing the fine-silk business. Germans cannot compete in Christmas ornaments. Everyone but the Chinese will lose their textile and clothing factories. More worrisome for America and other countries is the contour of the future, where manufacturing shifts overwhelmingly to China^ow all directions, including from the United States. Consumer goods trade on the surface of the world's economy and their movement is easy for consumers to see. The far bigger shift, just now picking up steam, is occurring among the products that manufacturers and marketers trade with each other: the infinite number and variety of components that make up everything else that is made, whether it is the hundreds of parts in a washing machine or computer or the hundreds of thousands of parts in an airplane. And then there are the big products themselves: cars, trucks, planes, ships, switching networks for national phone systems, factories, submarines, satellites, and rockets. China is taking on those industries too.

Follow the Money—to China

One big reason China is growing is that the world keeps feeding it capital. According to Japan's Research Institute of Economy, Trade and Industry, one-third of China's industrial production was put in place by the half a trillion dollars of foreign money that has flowed into the country since 1978.' In 2003, foreigners invested more in building businesses in China than they spent anywhere else in the world. In the past, the United States used to routinely attract the most foreign money, but in 2003 China took a strong lead, pulling in $53 billion to the U.S.'s $40 billion. The U.S. outscored China in 2004, attracting $107 billion to China's $61 billion, though an increasing number of billions coming to the U.S. are being spent by Chinese companies buying American counterparts.
With money comes knowledge. The catalytic role of foreigners in the country is still growing quickly; every day China receives a river of European, Asian, and American experts in manufacturing, banking, computing, advertising, and engineering. In 2003, the exports and imports by foreign companies operating in China rose by over 40 percent. Now more than half of China's trade is controlled by foreign firms, many of

which import goods into the country that they then manufacture into exports.'" Foreign companies have pumped up China's trade volume enough to make the country the third-largest trading country in the world, behind the United States and Germany, and now ahead of Japan.
Governments that try to protect their niche industries for their craftsmen must face up to a China that has an exceptionally strong hand. Do a few tens of thousands of furniture and textile makers matter when China can put a freeze on American drugs, telecommunications equipment, farm goods, or any of the other truly huge categories of products the United States hopes to export.? Other countries have even weaker hands. Most of the world's countries now see China's growth as a critical engine for their own economic growth. A look at the news any day in Brazil, Australia, Canada, Mexico, Germany, Japan, and just about anywhere else tells of the world's daily balancing act to keep China happy as a customer, efficient as a supplier, and at bay as a competitor.

Orders from a Magnitude

At any given time since China started on the capitalist road, opinions about its prospects have figuratively, and literally, been all over the map. The present mood is a combustible mix of euphoria, fear, admiration, and cynicism. On those emotions ride great tides of capital, the strategic plans of businesses great and small, and the gravest political calculations in the world s capitals and city halls. The temptation is to delve into the workings of the country itself Is its government a wise warden or power mad and corrupt.? Are its people happy with their progress or intolerably oppressed as citizens and abused as workers? Will China's landscape gain more glimmer or drown in industrial muck? Will its banks collapse or successfully make themselves over into worthy world players? Will China's peasants find their way relatively peacefully into their country's urban future or will they rebel?
These are momentous questions, and the Chinese people certainly deserve concern and respect from their own government and from the world. Yet for the four-fifths of the world's population that does not

mhabit the Middle Kingdom, the fact is that no matter what the Chinese machine produces for the Chinese themselves, the country's impact on the globe will inevitably and profoundly influence global life nonetheless.
China does not need to boom indefinitely in order to supply the world with competitive factories. Not all, or most, or even a third or fifth, of its population needs to reach the middle class for the world to chase its markets—a mere 50 million families is enough.
Furthermore, China does not need to match America's, Europe's, or Japan's commitment to universal education or make opportunities for all its bright students to attend universities; China can produce huge numbers of world-class managers, engineers, and scientists with the farfrom-universal educational system it already has now. Moreover, if China's leadership ultimately cannot reconcile itself to the free flow of information that capitalism favors, or to the growing power of its commercial class, the world's companies that now beat a path to its door will not turn away, will not abandon their factories. They have already shown that the Chinese Communist Party suits them just fine.
Barring Mao's resurrection, a push to war by a desperate North Korea or an uppity Taiwan, or an American tax on everything China ships our way, it is hard to see how China might recede back into the old world map. Tom Saler, a financial journalist for the Milwaul^ee Journal Sentinel, has pointed out that twenty-one recessions, a depression, two stock-market crashes, and two world wars were not able to stop the American economy from growing over the last century from $118 billion ($367 billion in 2000 dollars) to over $10 trillion. In constant dollars, that is a twenty-seven-fold increase. By all appearances, China is poised for similar growth in this new century. Even if China's people, on average, do not catch those of the world's wealthiest nations, and even if China's main competition continues to beat it to the best technology, China will be an ever more formidable competitor.
Certainly, if any country is going to supplant the United States in the world marketplace, China is it. Columbia University economist Jeffrey Sachs, counselor to nations, advises Americans to prepare for a world where by the year 2050, China's economy could well be 75 percent bigger than their own."
But conceding China's rise does not mean conceding to China. However, it does mean acknowledging a remarkable truth confronting us all.

Few working Americans have a full awareness of China's rise. How could they .i^ It's never happened before, and it's occurring on the other side of the globe. Yet we need to know what is happening today in China—worker by worker, factory by factory—and why it will affect everyone.
That, in broad strokes, is the occasion of this book.

C H A P T E R ONE

TAKING A SLOW BOAT IN A FAST CHINA

T H E BANKS OF T H E HUANGPU RIVER RUNNING THROUGH SHANGHAI do not just bend. They mind-bend. For a century and a half, the currents of change coursing through modern China have been more visible from Shanghai's banks than from anywhere else. Here Western powers pushed in most aggressively in the raid-nineteenth century, and later the

Japanese made their claim in 1895. The foreigners established an all-butindependent city-state to run their China trade. Western tastes mingled with China's on such a grand scale that The Bund, then Shanghai's commercial center on the west bank of the river, looked like the gleaming boulevard of a great European capital.
In the early twentieth century—until China and the world unraveled in the 1930s—Shanghai counted as one of the world's five most important commercial centers together with London, NewYork, Paris, and Tokyo. The city was also the world's second-busiest port. Its banks, housed in the imposing hodgepodge of broad European money palaces and slim towers on The Bund, were flush intermediaries in an irresistible trade with Western and Japanese sellers of machines, cotton cloth, medicines, and opium. Chinese factories poured out clothing, paper, and other simple manufactured goods at prices foreigners could not match at home. Commodities in vast quantities moved in both directions.
While foreigners created Shanghai as a world port, the city soon proved a magnet for Chinese looking to work in factories or, during periods of social unrest, for sanctuary. The large migration into Shanghai, and the foreigners' fears that their city would be engulfed, helped lead to the system that ultimately divided the city into separate zones, gated sections of town for the colonists, known as concessions, and the

CHAPTER TWO
THE REVOLUTION AGAINST THE COMMUNIST REVOLUTION
T H E FAMILY SHOP OF L I ZHANWEI AT T H E SLEEPIEST END OF SHANGhai's Dongtai curio market sells anything and everything. The utilitarian shelves that stretch from floor to ceiling could be those of a toolshcd or auto parts store, except that they are randomly filled with bits of China s material past. By the door is a small hook hung with jade bangles. Bronze flying horses, some the size of pecans, others as big as golden retrievers, rest throughout the shop. Glass snuff botdes painted with gauzy goddesses sit among Buddhas in dozens of incarnations.
The Lis' shop is mostly lit from the sun outside, but under a fluorescent lamp in a dim alcove at the back are ceramic plates embedded with hundred-year-old grime. And stashed in them are corroded coins and good-luck pendants promising one of a hundred forms of happiness. Standing on the floor are two thirteen-hundred-year-old Tang dynasty statues, which patient bargaining can free for $5 each. There are racks of bamboo calligraphy brushes said to have wolf-hair bristles and others with white rabbit hair. The Lis also have an assortment of old Chinese-style locks, favorites of engineers visiting from America and Germany. On the highest shelves, out of reach of casual browsers, is a line of gilded clocks from Old Europe. They are topped by porcelain gowned courtesans, trumpeting angels, or ghoulish John Bulls. Ivory mah-jongg sets, some big enough for giants and others small enough for flea circuses, stack up in neat pyramids.
The Lis also keep enough killing tools—axes, nunchakus, daggers, spears, razor-edged spades, and horse-chopping blades—to fill a Hong Kong studio's prop room. In a!!, thousands of things, most reproductions made in Chinese factories. To those who shop Dongtai regularly, the Lis

are among the street's most honest sellers. They adhere to a candid

buyer-beware ethos, and identify flimflam when asked, but only when asked.
If Shanghai and China were not changing so quickly, Mr. and Mrs. Li would not be selling anything at all in Dongtai. Their story epitomizes the enormous forces at work in China, carrying people away from their ancestral farming communities and into global commerce.
Six years ago the couple arrived with nothing from a farming village in Henan, which, with 95 million people, is one of China's many nationsize provinces.' Like many of the district's sellers, they still have the air of country folk about them. Mr. L i , thin and lively, carries a rough approximation of city style. His bangs look fashioned at home. His polyester pants and cuffed shirt are dressily cut but are many washes past smart. Mrs. L i , in nattier pants and a darted shirt, sports a basic ponytail. Her rosy face has high but muscled cheeks; her bright eyes scan the shop.
The Lis, now at the early edge of middle age, smile easily when asked about their road to Shanghai, and their story comes out with the detail and emotion of one waiting to be told—so much so that when an Australian man wanders into the shop to trade currency and bargain for war swords, hot items in Dongtai, Mrs. L i keeps on talking. "We will never be completely accepted as Shanghainese," Mrs. L i says through a translator, "but the city has made a big difference for us." Henan, which lies two provinces inland from Shanghai, offers plenty of incentive to leave. The Asian Development Bank offers a bleak assessment of the region, describing it as beset by "high population density and limited arable land due to mountainous terrain, a harsh climate, and scarce water." When the Lis made their journey, locusts and flooding were among its more recent plagues.
The Lis arrived in Shanghai at the height of the migrants' surge into the city. The migrant count in the city alone in 2003 was 4 million. Astonishingly, 97 percent of the city's migrants soon find jobs. The Lis avoided the usual routes into construction and restaurants. When they first arrived, they spread a blanket on the street and sold what few items they could muster from a collection of bric-a-brac they'd carried with them from home. Migrant sellers are frequendy arrested by the police, and for two years the Lis lived being chased from place to place. Then they won the chance to sell their wares m the top-floor flea market

in the main tower on the outskirts of Old Shanghai, a bustling shopping district that has grown up around a four-hundred-year-old teahouse and garden. Today, new buildings in the style of old Chinese temples and mansions house tourist shops, hotels, restaurants, and antique and curio sellers.
The market at the top of the tower rents to sellers from all over China, all of whom are migrants trying to get their first leg up on an urban dream. The hall provides a bare-bones beginning; peddlers sit crouched over blankets, old cartons, and low tables filled with curios, some real, but mosdy persuasive reproductions. The Lis proved their mettle in the market and even developed something of a regular clientele among the city's upwardly mobile looking for items to decorate the new apartments springing up all over town. But the couple could only sell so much in the cramped hall. In a shop, the Lis knew, they could stock more items, induce customers to spend more time shopping and give their family a more permanent stake in rising Shanghai.

But to expand their business, the Lis had to enter the vast but mosdy illegal local lending network that finances much of China's economy and originates in the communities migrants call home. Virtually everything about the informal financing market is conducted by words, handshakes, and occasionally by written but extralegal contracts. Chirla's large bookstores carry business books on nearly every topic of commerce but none on informal lending. It is almost never publicly reported upon except when the Chinese government occasionally cracks down on lenders. Yet this shadowy channel of capital is underwriting millions of rural entrepreneurs with city businesses. One study conducted under the auspices of the Shanghai Academy of Social Sciences, a prestigious center that doubles as a think tank and university, found that an overwhelming proportion of Shanghai entrepreneurs and independent business owners were outsiders who had moved into the city from elsewhere.

That the Lis now own a shop in one of China's great cities, where they have access to information, goods, markets, foreigners, spenders, and the arbiters of the city's evolving tastes, helps to explain Shanghai's boiling excitement. But that they upped and moved is no less important, as is the fact they were not arrested for doing so. Not long ago migrants in China were pitted against the full brunt of state power determined to

keep them down home. Economic hberahzation, however, made daring to move pay, and man by man the Chinese have picked up in such large numbers that the country is now in the midst of the greatest migration in human history.

One-Point-Something Biliion Brains

To confront China today, you must confront her people—however many there are. The discrepancy between China's official count of 1.3 billion and Western estimates of up to 1.5 billion arises from an analysis by intelligence agencies of China's grain consumption, which far exceeds the needs of 1.3 billion people. The people presumably left off China's official number are literally hidden in the crowd. Among the excluded are children whose existence, if known to authorities, would imperil their parents' livelihoods. Also missing are China's farmers turned migrant workers who wander the country without the official permissions they need, or who have no permanent addresses. Perhaps they are construction workers who live on their job sites, shifting floors as work progresses, their only possession a bag of clothes, and moving on when work is done. Perhaps the uncounted are villagers from the hinterlands on the lam from moneylenders back home; China has a whole demimonde of wandering debtors who cannot go home again. Census officials certainly do not find them when making their door-to-door rounds.

And while China's size may be the best-known fact about the country, the human scale of those numbers is still the hardest to grasp.

Recall that estimates of the number of Chinese migrating from China's countryside to its cities in recent years range from 90 million to 300 million. Either number is unknowably huge. Another 100 million to 200 million people will join the current migrants in the decade to come.

These workers are themselves a formidable labor pool. To make another comparison, the European Union's workforce numbers 223 million. Japan's is 63 million. Some of China's urban centers, such as Shanghai, can add a million residents a year. Other, newly minted cities can reach

the size of Chicago or Los Angeles in just a few years.
In the past, China's population, hard as it has been to fully feed, employ, and keep from descending into chaos, has often been seen as the

greatest threat to its prosperity. The transient 100 or 200 or 300 million souls who now make up China's floating population are all people who legally ought to be one place but are not, who ought to have one sort of job but have another, and who are in effect a roving nation that is potentially the most disruptive group in China, and the country's least easily controlled. And yet, like Mr. and Mrs. L i , they are also the group that gives China's modernization its hunger.

Communist Plots

As China begins the twenty-first century and its populations move in search of freedom and earning power, its greatest paradox is that all of this change has happened on the watch of the Chinese Communist Party, once the most radical and fearsome enemy of private enterprise the world has ever seen. The Party's most significant reforms have been homegrown, not mandated from abroad by foreign governments or international agencies. There is planning behind them to be sure, but by and large China owes its success to a government that grudgingly acknowledged that it could not get in the way of a people determined and resourceful enough to undermine the old radical regime. Understand how China has advanced despite its impediments and one can sense how much more it will shake the world as its remaining, and considerable, barriers fall.

The most obvious example of Communist obstruction to growth has been the issue of private property. Since the early years of Communism, the Chinese government, in one form or another, has owned all the land in China. The 1949 revolution, led by Mao Zedong, ended a system of property ownership that reached back for centuries.

Mao, who had been active as a Communist since the 1920s, long believed that China's socialist revolution should originate with the peasantry rather than with urban workers, as Marxist theory holds. Through the 1930s and 1940s, during the Japanese occupation and the Chinese civil war, Mao's army of peasants endured vast hardships, including the 7,700 mile Long March. His forces were nearly eliminated but ultimately prevailed. The People's Republic was established in October 1949, at which time the Communist Party had 4.5 million members, nine out of

ten of them from peasant backgrounds. Its first years were marked by a massive reconstruction of China, and the country's new prosperity and stability contrasted with the tumult and hardship of the decades before. China's leadership soon launched a campaign against "enemies of the state," and began the process of land reform in 1950 w i t h the A g r a r i a n Reform L a w .

I n one bold stroke, the l aw d id away w i t h the rights of individuals to own land i n C h i n a . ' F i r s t and foremost, it stripped property f r om C h i nese landlords, who often owned giant swaths of land, and granted the use of plots to their former tenant farmers. T h e reform made good on a long-held pledge by the Communists to put land i n the hands of the peasants who w o r k e d it. I t also d id the opposite. I n taking land away f r om the landlords they hated, the Communists also took land away f r om millions of peasant farmers who owned their own small plots. Before all land was forcibly transferred to the Communist state, 60 percent o f China's rural population, frequendy starkly poor families, held land, small as the plots might have been.'

T h e early radical Communist r e f o rm shared traits w i t h exactly the reforms that were being made at the same time to bolster capitalism i n the American sphere of influence outside China. D u r i n g the U . S . occupation of Japan following W o r l d W a r I I , General Douglas MacArthur made reform of Japan's feudal system of land tenure and the redistribution of farms to those who worked them among his top goals. U n l i k e the Chinese, however, MacArthur required tenant farmers to purchase their plots, albeit on extremely easy terms offered by the government. I t too worked miracles: putting land that during the war had forcibly been cultivated according to the demands of the Japanese m i l itary into the hands of farmers pumped up production. A n d , unlike the Chinese reforms, Japan's did not lead to the violent revenge the Chinese farmers inflicted on their former masters. Whereas MacArthur's reforms stuck, and for the American occupiers and the capitalist West bought a grateful constituency of Japanese whose economic progress continued at a terrific pace, the Chinese lost momentum by enacting even more radical reforms.

Collectivization and Its Discontents

I n the mid-1950s, China turned f r om individual land use to Stalin's Soviet model of collectivization. T h e U S S R ' s collectivization program was enforced with Stalin's trademark violence, in w h i c h murder and imprisonment were made part o f the Soviet Union's agriculture policy. Stalin executed thousands of kulaks, the former peasants who, l i k e China's former tenant farmers, had been given small plots of l a nd i n a pre-Communist wave o f reform. Stalin exiled millions more to Siberia.

The Chinese Communists had planned to follow the Stalinist model for collectivization f r om the beginning of the revolution, and the Party's first wave of r e f o rm was step one toward that goal.

T h i s more radical shift came i n 1956. A t first, farmers were compelled to help one another on each other's plots. A l l l a nd and a l l property, including animals and f a rm tools, were collectivized. T h e n ew communes also struck at China's most basic social institution, the family. T h e most extreme of them moved people out o f their homes into big dormitories where families could be separated. L a n d was worked i n common by groups, typically a collecdon of hundreds of families.

One motivation for the change was practical. Cropland would no longer be divided into minuscule plots, each with a different mix o f plants."" Bigger, unified tracts, the government reasoned, could be farmed more efficiently. Modern f a rm equipment could also be employed, insofar as such technology was available. Labor could also be freed to b u i ld dams and irrigation systems.

But, to Maoist China, it was just as important that the n ew system of collectivization reshaped China's vast peasant population. One of Mao's core doctrines was that the Chinese peasants and workers needed to be molded into a workforce that could easily be mobilized, not i n the sense that they could be moved around geographically but for ideological campaigns and for the shifting, politically informed economic policies of the Party. China's rural labor was kept to the land where it could play the part of a "reserve army" to be called into action when needed by the Party for industrialization projects.' T h e countryside was thus deployed and redeployed i n one campaign after another, each

spurred on by the force of the state, communal pressures, ideological bullying, and dire consequences for those who did not go along.

The era of collectivization was thus also an era of confinement for China's rural population. When the Communists took control of all private property, they also set about eliminating the myriad small businesses that served everyday commerce in the country. Families with small stores lost them as the state assumed the role of universal shopkeeper. That forced families back onto the land full-time, even i f they had already made a complete break from it. In 1956, the government issued an edict that forbade the state-owned factories, mines, construction crews, and transportation lines from hiring anyone off the farm." The weight of China's internal security apparatus was also brought to bear against people trying to leave the countryside for the city.

To make matters worse, the country instituted its infamous hukpu system, a series of laws that made the state a feudal master over its farmers. Briefly, from 1959 into 1960, while the extravagant indu.strialization goals adjoined to the Great Leap Forward were pushed by the Party, farmers were allowed to leave the country and join urban firms. In that short window China experienced what had been predicted: farmers stormed into the cities. (Just as they had been doing in much of the rest of the world following World War II.) Nineteen million were recruited to cities; 50 million showed up. China, however, did not prosper. It starved. Tens of millions more farmers poured into cities during the famine. Reaction came swifdy. The Party, moving to protect its urban workers, deported most rural migrants back to the countryside, where the government meant to keep them.'

By I960, the Communists had all but sealed most of the country's people off, not just from the world, but from China's own cities.* Kate Xiao

•Following the general economn: breakdown of the Great Leap Forward, the Communist Party reconceived the commune system, giving local officials more decision-making authority. The Party also moved to divest industrial planning of the ideological agendas that caused failures. One of the chief architects of the reforms, Deng Xiaoping, who later became China's paramount leader, believed strongly that China could only heal with a more practical approach to development. But the reforms did not do away with the collective system, or free farmers to move. For all his farsightedness, Deng did not see past the general fear that the country's cities would easily be overwhelmed if people moved freely. By the mid-1960s, practical reform again took a backseat to ideology.

Zhou, a native of China born in 1956, grew up during the 1960s and 1970s, the period of the Cultural Revolution and the height of the hukpu restrictions. Zhou's early urban childhood was interrupted when her father, a college professor of English, was named a "bourgeois intellectual," and an enemy of the people. Such a label spelled ruin for whole families. Every member bore the stigma so heavily that children were shunned at school, i f they could attend at all, and relatives were refused work. Life changed quickly and violendy for Zhou. Her father was imprisoned in his school, and the surrounding campus was plastered with propaganda posters that accused him of sexual misdeeds. Soon afterward, Zhou's mother was attacked by the Red Guards, the radical young soldiers of the Cultural Revolution, who deemed her too beautiful and sexually active. T h e Guards cut her hair, then forced her to march to a meeting to be publicly disgraced. The mother's home (her parents were divorced) was searched, and jewelry and china were unearthed from under the floor. Eventually, Zhou, her sister, and her father were exiled to the countryside in Hubei Province to be "reeducated" by farmers.

In her 1996 book. How the Farmers Changed China, Zhou details her experience among farmers. She saw firsthand both how restrictive China's official policies were toward its rural population and how farmers found ways to force change. In describing her reaction to her new country home, Zhou captures the stark differences that existed then between rural and urban lifestyles. "For us, the village was a completely strange world. There was no electricity, no running water, no toilet. Everything we took for granted in the city did not exist in the countryside."' The divide that Zhou crossed separated her from her former world just as harshly as South African apartheid, American Jim Crow laws, or the ghettos of Europe exploited and anathematized whole populations.

The hul{ou system, as described by Zhou, was designed to prevent rural-to-urban migration. Family booklets served as internal passports. "Every household's booklet registered the family origin, class affiliation, personal identity, birth date, and occupation of all its members."' Those with rural identities who traveled to the city without proper permissions, which were hard to come by, would be detained, then deported back to their farms. A household's booklet was also required to get food from

government shops. Those who showed up at shops outside the region were refused. The effect, says Zhou, was that the state destined children of farmers to remain on the farm. Only the army, a political post, or occasional temporary work in a nearby city offered any road out.'"

Not only did farmers have to go to the state/or food, they had to go to the state with food. Collectives were required to meet production goals, and their output was then delivered to the state to satisfy the needs of the cities. Farmers who grew the country's food were therefore the first to go hungry. That is why the famine of 1959 killed tens of millions of people in the countryside while city dwellers survived."

The usual explanation of the low productivity of Communism blames the lack of incentives for farmers. On China's collectives, the standard complaint goes, growers, dulled by state guarantees that fed them no more and no less than their ration books allowed, had no reason to work harder than absolutely necessary. Those who thought their work could be sloughed off on others would take it easy. But this analysis neglects the enforced deprivation of farmers kept on the land. They were turned into slaves for China's cities.

China's rural population suffered then, as now, from a deep, abiding discrimination at the hand of the country's city dwellers. Before and after the Communists came to power, the cities in China were the most coveted places to live. Cities had wealth, schools, culture, and political sophistication. Cities offered a chance for social mobility. China's country folk, like country folk elsewhere, were poorer, illiterate, and tarnished with the negative stereotypes city dwellers predictably applied to them:

lazy, stupid, and dishonest. And although the revolution gave China's rural population new dignity, since it had been the peasant farmers who had nurtured the Communist Party during its long fight and many of the Communist leaders were themselves country people, the Communists too found ways to subjugate the countryside.

How Eighteen Farmers Saved China

The hunger that continued to plague large swaths of the Chinese countryside throughout the 1960s and 1970s stirred the clandestine efforts of one group of farmers that have since been pushed into popular mythol-

ogy by post-Mao reformers. The group came from a hardscrabble village called Xiaogang in China's poor Anhui Province. In the 1970s, famiHes in Xiaogang lived in extreme deprivation. The farmers, with annual incomes around twenty yuan a year, were among the poorest people on earth. (At today's exchange rate, twenty yuan equals $2.50.) Many families sent out members to beg.

The official story of how they lifted themselves up is known to nearly all Chinese. It goes like this: Eighteen farmers desperate for a better way to feed their families agreed to divvy up land they farmed collectively and assign discrete plots to each family. Collectives at the time were obliged to pay a "grain tax," an allotment that went into government distribution channels. The farmers agreed that they would still pay their grain tax, but that once their obligations were met, they could sell or barter whatever surplus they could coax from the land. The proceeds would then be theirs to keep. Such a secret arrangement was illegal, and the farmers knew their pact could result in prison, or perhaps death. The eighteen men courageously signed the compact with their fingerprints in December 1978. It stated that if any one of the signatories was apprehended and punished, the others would support his family left behind.

The effects were nearly immediate, achieving in months what years of ideology and central planning could not. The yields from the land climbed dramatically. The secret agreement and its results, the official story goes, caught the eye of Beijing, where Deng Xiaoping had recendy become China's paramount leader. In truth, the Xiaogang farmers were far from the first to subvert the system. Some farmers were already making small bribes to buy themselves the freedom to sell crops. Provincial officials willingly allowed the illegal experiments to proceed. Deng himself ultimately endorsed comparable agreements, citing the Xiaogang pact as a "responsible contract system with profits linked to production." With Deng's support, similar arrangements were allowed on a trial basis in the poorest provinces most desperate for relief. The scheme offered a powerful, no-cost way for a strapped government, itself struggling through a difficult transition, to lift its people.

Within a year of the compact most of the farmers in Anhui, a rural province of 50 million people, were operating under a version of what became known as the Household Responsibility System. As the stuff of myth, it helped that the heroes were peasant farmers, not city intellec-

tuals or government planners in Beijing, who planted this new revolution. Chma officially instituted the Household Responsibility System in 1980. The system allowed families to grow and sell crops for profit, provided they met their quota responsibilities to the state. The market economy

in China was, in fact, kick-started by farmers.
Today, the document that the original eighteen farmers signed is enshrined in the Museum of the Chinese Revolution in Beijing, and Chinese government information agencies do what they can to keep the story alive. In December 2003, the Chinese papers ran articles commemorating the twenty-fifth anniversary of the secret meetings." It interviewed one of the signatories, Yan Hongchang. He is quoted as saying that the agreement was "a capitalist action challenging the socialist public ownership then." He takes issue, the report noted, with the common view that the farmers were defying Mao by going against the system of collective farming. The farmers, he said, were instead working hard to conform "to the thoughts of Mao in 'serving the people wholeheartedly.' " The Chinese news agency reports that now every family in Xiaogang has a tractor and a T V set, while some even have cars and two-story homes with living rooms. "We have built public fiush toilets, reading rooms, a water tower, and a cultural square in our village," says Yan Hongchang, "and the . . . per capita income [in 2003] is estimated to be more than twenty-six hundred yuan [$313]." Instead of just trying to eke out grain, the area's farmers have also diversified into forestry and livestock.
Whether the Household Responsibility System really owes its existence to the Xiaogang experiment and whether farmers throughout the land embraced it as wholeheartedly as official Chinese histories proclaim has come under doubt among academics outside China. Some scholars point out that the end of the communal farms met considerably more resistance than the official version admits to. Perhaps as a result, China's official press apparatus continues to flog the story of the secret agreement, and the virtues of the farmers involved. No matter. From a practical point of view, the details about the origins of reform are far less important to the present than the industry and appetites the rural reforms ignited.
It was also an incredible turning of the tables when the economic reforms that effervesced out of the rot in the countryside delivered the

first wave of China's new wealth to the country bumpkins themselves. What's more, the new prosperity came to the regions of China that were among the poorest, not coincidentally or out of some turn of cosmic justice, but because the people there had the least to lose and had the incentives to take the risks that utter poverty and disenfranchisement offer. Kate Xiao Zhou recalls that when China's farmers first found their way into the cities, usually illegally, to sell the produce they had harvested under the Household Responsibility System, city dwellers were dumbstruck at the money the peasants were making. First the farmers were the butt of innumerable jokes, and then the subjects of envy. The farmers' enterprise then woke the urbanites up to the possibilities of a freer marketplace.
Once farmers began to make some money on their own, they looked for ways to make money widi their money. Many of the enterprises competing for survival in China today grew out of the pooled savings of backwater farmers who looked for ways to invest their newfound money in more ambitious businesses. Among them are collectives and cooperatives owned not by the central government but by members of local communities. Or they are owned as private investments by local

governments. These "township and village enterprises," or TVEs, fill the gray area between public and private sectors and now make up a third of the economy. Mostly these companies—an astounding 120 million of them'^—were originally financed by the pooled resources of farmers or set up by municipalities using their citizens' funds. They are overwhelmingly small-time companies with fewer than five employees, but some township and village enterprises have flourished and now rank among China's most competitive.

Because farmers devised ingenious structures that rarely divided the interests of the government neatly from those of investors, the landscape of Chinese businesses is dizzying. After years of reform, China is an infinite jumble of hybrid businesses that mix together the financial interests of government bodies at every level with those of officials (who may themselves be investors or otherwise reliant on corporate profits), townspeople in the role of shareholders, and other private investors. Millions of companies conflate the sectors, often in impossibly complex, opaque ways.

These murky corporate structures are often seen as an impediment to

future growth, but may in fact argue the opposite case. One way to begin to understand China's impact on the world economy that is to unfold over the next few decades is to consider how far the Chinese have come without the property rights and laws often regarded as some of the most fundamental building blocks for economic development.*

And it all began with the sale of surplus vegetables.

Communism's Supercharged Soldiers of Capital

The long repression and then liberation of China's farmers set into play the explosion of China's market economy. But they also triggered the recent flood of migration that brought Mr. and Mrs. L i to Shanghai's Dongtai curio market. And yet, chances are that the current number of migrants is only the first wave of what is soon to follow.

Here's why. Although good population statistics in China are hard to come by, the broad trend comes through in every head count.'" For

•Consider, for instance, how Hfc in a mature market economy would have to be reordered if people were, in essence, suddenly allowed to own nothing of real value. Among development theorists—the economists and sociologists who study the preconditions that must exist for economic advancement—an influential strain of thought stresses the importance of property rights. The chief deficit that keeps the poor down in developing countries, the argument goes, is the absence of property rights. In The Other Path (1989), the Peruvian economist Hernando de Soto powerfully advances this thesis, arguing that when people do not have solid legal ownership of their homes or of whatever small businesses they manage to start on their own, they have no power to tap the value of the things in their life worth the most money. That in turn shuts down their chances to advance. They do not have assets to borrow against. Poor villagers who have stacks of paper showing that they own their homes still cannot borrow against them if there are no courts that back up their claims, nor clear rules that say which pieces of paper really matter Such scenarios, common through the developing world, prevent the poor people who must live with flimsy rights from borrowing against their homes to start businesses. Weak property rights, according to the argument, also dissuade others from investing in the businesses of people who must build their livelihoods on legal quicksand. In test cases in Peru and E l Salvador, where property rights have been firmed up, economic activities among the poor have improved and offer proof of the value of property rights.

tUnlike the strong central governments of other tighdy controlled states, China's

Communist government was, until recendy, less than rigorous when it came to big social surveys and censuses. The difficulty is compounded by the government's frequent shifting of the definitions and categories that divide city and country.

nearly all of the last fifty years, excluding die most recent few years, the pace of China's urbanization has lagged behind that of the world as a whole. Outside China, during the last four decades of the twentieth century, the world experienced unprecedented urban growth, most of it the result of migration in from the countryside. In 1950, about 30 percent of the world's population lived in cities. That is just six percentage points under where China is today, while in the year 2000 the percentage of the world's population that called cities home was 47 percent. The numbers reflect high concentrations of city dwellers in developed countries, where three of four people are urbanites.

But China's urbanization is low even compared with developing countries—where 40 percent of people live in cities—that have nothing like China's industrial might. As mentioned before, China has one-fifth of the world's population, but equally momentous is that one in three of the world's farmers is Chinese, What's clear is that China's recent urbanization rush is rapidly making up for lost time. The United Nations predicts that by 2010, the vast influx of rural residents to the cities will boost China's rate of urbanization to 45 percent, and by 2030 to 60 percent."

Thus, another way to view China's rapid surge in the global economy is to see it as a counterreaction to the Communists' forced removal of most of China's population from the world of commerce.* And similarly paradoxical, when seen in light of China's long-term development, the Communist collectivization campaigns in the country and in the city forged a docile and pliant workforce hundreds of miUions strong.

Prasenjit Duara, professor of history and East Asian languages and civilizations at the University of Chicago, and chairman of the school's department of history, grew up in India during the heyday of Indian socialism. In his youdi, in the 1970s, he was drawn to China by the country's image as a radically egalitarian state. Today, Duara's work on

*The Chinese themselves think of their absence from the world's mainstream as an aberration of nature. For thousands of years of human history, their country was the richest and, by the Chinese reckoning, most civilized nation on earth. The Chinese, outsiders often hear, had lively cities of over a million people when European cities were still small. When Marco Polo traveled to China (or said he did), Europe's leading cities had just tens of thousands of people. Paris, Europe's largest, had seventy thousand and London just thirty-five thousand.

China explores the manipulation of the country's historical record to serve the purposes of different generations of leaders, reformers, and conquerors. Duara sees a deep irony in how capitalism arose in China after 1978. For the Chinese, who sweated and beat themselves over Marxist and Maoist theory until they had internalized it into their bones, the irony is far more than a historical twist; it has turned their mental world topsy-turvy. Marxist theory holds that capitalism takes shape when early capitalists squeeze peasant farmers, in essence starving them enough so that the wealth of the land gets pushed into commercial, capital-intensive enterprise. In China, however, it was the peasant farmers who squeezed the Communist state to start their own businesses, and ironically it was Mao's reforms that laid the groundwork for Chinese capitalism. "The Communists made the workforce docile and organized labor to be a managed entity that could be continuously mobilized," Duara says. The social institutions the Communists created, including housing, schools, and a health care system, bled the state of resources. But in providing for the people, even at a basic level, the Communists ended up saving the nascent capitalists the price of developing a workforce.

Now, of course, this workforce is irresistible to the world's manufacturers. As American and European companies cast around looking for places to move factories or parse out production to third parties, China is seen as a place where labor and management costs can be kept to an optimal minimum.

The next historical irony may be that those same American and European companies will teach China's own companies how to utilize that same docile, compliant workforce to gain a competitive advantage against them in the global marketplace.

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CHAPTER THREE

TO MAKE 16 BILLION SOCKS, FIRST BREAK THE LAW

GREEN, MOUNTAINOUS H U B E I PROVINCE STRADDLES T H E MIDDLE OF China, its eastern extreme three hundred miles inland from Shanghai. Hubei's beauty is largely unknown to Westerners, except for those who saw director Ang Lee's martial-arts/special-effects masterpiece. Crouching Tiger, Hidden Dragon, which displayed the province's subtropical, alpine charms. Hubei is also one of the most agriculturally rich regions in China, an important national source of grains and vegetables. It is the site of China's most fabled natural wonders, the aquatic valleys on the Yangtze River known as Three Gorges. And also, of course, the site of the controversial Three Gorges Dam, the six-hundred-foothigh, 1.2-mile-long span that will create a reservoir 350 miles long, comparable to Lake Superior. Construction of what will be the world's largest concrete structure has already forced the relocation of 820,000 people with another 350,000 to go. The project will all but wipe out the contours of the gorges themselves, and several cities. The dam is designed both to generate enough electricity to power an inland economic revival and to spare the region from the violent seasonal caprices of the Yangtze.

How interesting it is, then, that despite Hubei's natural beauty and long-term potential for economic development, many of its people are leaving. Walking, biking, hanging on to the sides of trucks, and riding "hard seat" on trains, they are pouring into the tide of migrants washing over China. As much as China's reforms have lifted the lives of its rural population, the countryside is still a land of vast want. The many miracles of the new economy have refused to come and must be chased. In Changxin, for example, a small farming village in Hubei that is

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CHAPTER EIGHT

HOW THE RACE TO THE BOTTOM IS A RACE TO THE TOP

T H E STREETS AND HIGHWAYS OF C H I N A ARE F I L L ED WITH ROLLING museums of everything that has ever moved on wheels. Head four hours north of Shanghai on the bus to Rudong, where one of China's newest and still lightly trafficked toll roads gives way to land still off the highway grid. There one ends up on the rough two-lane highways that have crisscrossed China forever, running past tiny one-counter private shops that have sprung up by the millions since economic liberalization. Most sell hot food, crackers, and soda, and many also sell cement bags, porcelain plumbing fixtures, and other weighty necessides of the world's greatest building boom. Moving materials in and out of the shops and along the roads are big old military trucks and trucks that are not so old but come out of factories that still make them according to Soviet-inspired designs. Their big flat beds get stacked so high with materials that they look like moving mountains. These lumber down the roads taking every bump carefully. Newer trucks, which look more like up-to-date European models from Mercedes or Volvo, hot-rod past them. Smaller trucks take up most of the road, often pickups with beds customized with oil tanks, chicken coops, or benches for paying customers. And there are buses of every size, from double-deckers topped with giant canvas mounds for luggage down to minibuses for small outings. Motorcycles, virtually all of them Chinese brands copied from old Japanese bikes, also carry imprudent loads, the rear of their ; vinyl seats taken up with bundles of sticks, paper, steaming baskets of ; food, and mothers with babies on their laps and packages around their wrists. Farther down-market still are the motorized bicycles, often rigged against the elements with plastic cabs around the seats. In the

slowest lanes, bicycle rickshaws and microtrucks ride with front ends that stick out like anteater noses on wheels, their small, exposed put-put engines perched right over the front wheels, kicking out so much heat, smoke, and noise that the driver's cab is several feet back. China is in a hurry these days, and these wheelbarrows married to go-carts clog up the roads and elicit fury from drivers of anything that can go more than ten miles an hour.

And then there are the cars. Over 120 companies make passenger cars in China, a number that far exceeds the roster of any other country and that signifies both China's nascent industry and long history as a nation of automotive tinkerers. At the turn of the last century, before the advent of real mass production, the United States had roughly the same number of carmakers as China today. Kissel in Hartford, Wisconsin, was one. Dozens of these Chinese manufacturers arc just small firms cobbling together cars any way they can. Some make models based on old Soviet cars and European compacts several generations past. Others paste together the parts and designs of multiple manufacturers depending on which parts can be had—often dubiously—in the market. "Many Chinese consumers are so hungry for cars that they don't care what they look like if the price is right," says Michael J. Dunne, whose Bangkok firm. Automotive Resources Asia, helps Western car companies navigate their Chinese businesses. "Right now, there is a large volume of demand on the low side of the market, and upstart Chinese companies are building knockoffs that buyers who just want transportation can settle on."

Among these many car manufacturers are a small number of larger, thriving ones that in many cases were started with the pooled resources of local governments. These wholly domestic firms play a role in how

much a Chinese economy car built for export will eventually cost and what it will look like.
The Wanfeng automotive factory is a good place to see these gathering forces of China's automotive might. Morning there begins with a neat line of employees doing calisthenics to martial music over a PA system. The blue-uniformed workers, nearly all of them young men, make for a clean-cut, well-pressed company line. The Japanese introduced courtyard exercises and company songs to the world back in the 1970s when that nation seemed to have the world's best industrial jobs.

Today, Japan is stumbling out of malaise, and its dwindling pool of young laborers lack the compulsion to work like hell. That striving Japan of old still sets a good example for would-be world-beaters, as Wanfeng's management knows, but the Chinese manufacturer goes one better. Its employees regularly have their spirits revved at company boot camps run by People's Liberation Army drillmasters, who inculcate the twin virtues of patriotism and hard work.
The results are impressive. Nine years ago Wanfeng started hammering out motorcycle wheels by hand in a Chinese garage; a few years later it was the number one seller of aluminum-alloy motorcycle wheels, first in China and then the world. The company soon became a top national and global seller in alloy automobile wheels too.
Wanfeng may well have received some help on the way up: the company's video that describes its rapid ascent does not identify the early contracts that enabled it to grow so fast, nor whether Wanfeng had insider connections to government companies in the motorcycle and car businesses. Nor is there anything in Wanfeng's literature about how the private company secured its financing, despite the fact that national banking laws have all but prohibited state banks—every bank, in effect—from lending to the private sector. Wanfeng today is nonetheless scrappy, aggressive, and capable. In year eight, it set up its automotive works in a large new factory in an industrial stretch outside Shanghai; now it annually turns out sixty thousand vehicles that look great, come with every modern luxury, including leather seats and full Chinese-made DVD video systems, and purr when driven. And if you squint just a little, these new cars look remarkably like Jeep Cherokees.
In contrast, Wanfeng's factory itself is a bare-bones machine. Most tellingly, not a single robot is in sight. Instead, hundreds of young, low-paid men newly turned out from China's burgeoning technical schools man the assembly lines with little more than large electric drills, wrenches, and rubber mallets. Engines and body panels that would, in a Western, Korean, or Japanese factory, move from station to station on automatic conveyers, are hauled by hand and hand truck. This is why Wanfeng can sell its handmade luxury Jeep tributes in the Middle East for $8,000 to $10,000. The company isn't spending money on multimillion-dollar machines to build cars; instead, it's using highly capable workers who cost at most a few hundred dollars a month, which

means chat the yearly pay of seasoned Chinese workers is le.ss than the monthly pay of new hires in Detroit.
Driving a Bargain
Wanfeng is growing quickly, but its survival is in no way guaranteed, for

the car business in China today is arguably one of the most competitive in the world, as manufacturing capacity explodes along with demand. Chinese and foreign automakers have invested $12 billion over the last decade in building automobile factories, with half of that amount spent just since 2002. One-third of the global growth in vehicle sales is coming from China, and within the next fifteen years, perhaps sooner, China is destined to emerge as the largest auto market in the world. China bought just over 2 million new cars in 2003, while the mature U.S. market has long been stable at roughly 17 million cars a year. Even with periodic sputters, China's long-term growth will be huge. China is on track to surpass Germany as the number three auto producer before 2010, to pass Japan by 2015, and then be just 4 million sales a year shy of the U.S. market, which it will pass in due course too.' The country's domestic market potential, like everything else in China, is mindboggling. The Chinese middle class, a group expected to spend heavily on cars, will soon top 100 million.

The most visible brand around Shanghai is Volkswagen. The company sells three of every ten new cars in China and is so strong in this region, where it also makes most of its cars, that traffic jams can look like VW sales lots. The company's Shanghai works has two main lines. One makes the virtually indestructible Santana, which was the first Western car mass-produced in post-Mao China. Like old friends, they are so extraordinarily dependable that their owners don't easily give them up. Nearly all of Shanghai's battalions of taxis are red Santanas, a testament not only to the car's durability but also to the clout of the Shanghai government, which is a partner in the autoworks. VW's Santana assembly line still builds cars the way cars were built in Germany in the 1970s, relying heavily on manual labor. VW also has an ultramodern assembly line in China, perhaps the company's best. It turns out VW's premium Passat, which in China's market is considered a luxury car and is pitted

against the world's other luxury makes, Mercedes and BMW among them. VW will more than double the number of cars it builds in China by 2008, when it expects annual sales there of 1.6 million vehicles, a number that will continue to mark China as VW's top profit center worldwide. Yet for all VW's strength, it is losing market share in China as more companies move in from abroad and as the domestic manufacturers learn to compete. General Motors, the number one automaker in the world, is now number two in China. It sells one of every ten cars in China and is also working to double its manufacturing and sales with a target of 770,000 cars by 2006. Ford was a latecomer and until recently was only willing to inch into the Chinese market, waiting until it could be confident it could make money there. But if money speaks, Ford's doubts must be over. It now has two large plants in the works and is spending over $1 billion to get them online as soon as possible. Industry insiders wonder whether the company has moved in too cautiously to make up for its late entry. VW and GM will add more manufacturing capacity to their current production than all of Ford's new ventures. Honda, Toyota, and Nissan all have plans to grab big shares of the Chinese market too. VW and the American carmakers are finding themselves in a familiar bind. Despite the loathing the Chinese have toward the Japanese, they hold Japanese cars in the highest regard and are willing to pay high premiums and bide their time on long waiting lists to get them. In the meantime, the competitors of the Japanese are building so much capacity they may end up flooding the market. Deflation is already a fact in China's car market, with prices dropping as the world's automakers collect an infrastructure around them that gives them access to lower-priced parts made locally.

Parts in the Puzzle

For national economies outside of China, it is the gathering of manufacturing inside China to serve the big auto companies that may yet prove the most worrisome. These are the first-, second-, and third-tier manufacturers that make and supply the thousands of parts that go into a car but are not made by the automakers themselves. These companies

are the heart and soul of the industrial sectors of the world. Even countries that are minor players when it comes to whole cars are big players in the parts business. Mexico and Canada don't make a lot of cars compared with the United States, Japan, or Germany, but they make a lot of car parts. In the United States the parts business is one of the big engines of our national economy. Domestic U.S. auto-parts makers sell $750 billion worth of their products around the globe every year. Overall, the automobile business accounts for more than a trillion dollars, or about one-tenth of America's gross domestic product.

As with other industrial sectors, the automobile industry, from the makers of small commodity parts to the big carmakers, works like an unstable planetary system. As bits and pieces of it move around, they acquire gravity and attract other pieces of the business. As big carmakers establish production in China, they drag along the companies that supply them. And as suppliers move to China—even if they moved in order to make parts less expensively for the American market—the big companies more willingly move too, more confident that the industrial infrastructure they need to produce efficiendy is taking shape in the new market.

Few businesses feel this pull to China more intensely than auto parts. "Suppliers feel increasingly pressured to move manufacturing abroad," said Antonio Benecchi to Automotive News following a study that his firm, Roland Berger Strategy Consultants, conducted for the Original Equipment Suppliers Association, the biggest trade group for parts makers. Benecchi studied seventy companies that together do $72 billion in business a year. He found that the North American car business is moving abroad in waves. The two largest American parts companies, Visteon (an independent company spun off from Ford) and Delphi (spun off from GM), both have multiple plants in China and aggressive expansion plans. For each, China means added billions in sales. As in other sectors, few industry watchers expect the two parts giants to keep their China-made parts for the China market alone.

Not all of the movement is going to China. Much is heading to Mexico, Eastern Europe, and to various cut-rate Asian locales. But there's no doubt that the pull of China is the most inexorable, since unlike other markets, China offers both low-cost manufacturing for export out of the country—back to the United States, for example—and the promise of an incredible local market. General Motors bought $200 million

worth of auto parts in China in 2003, a mix that mcludes parts made by both local firms and global suppliers working in the country. And that is not including the parts GM bought from its own China operations. The company says that its Chmese purchases for export will rise 2000 percent to $4 billion over the next five years.

For the big U.S. automakers and their European peers, whatever moves they make into China pay global dividends. Once in the country, they can assess the local manufacturing environment, learn who the best Chinese manufacturers are, and bargain locally based on the knowledge they glean about their suppliers' costs. As in the case of Wal-Mart, insider knowledge in China then becomes a power hammer to swing over the heads of suppliers everywhere else in the world. GM and Ford have already told their network of suppliers that they ought to be prepared to shave their costs significantly every year. It is plainly understood that asking suppliers to lower prices is merely another way of telling them they ought to be prepared to meet the best price out of China, even if they are making their products in Japan or Germany. GM, which buys more than $80 billion worth of parts a year, now has in force a clause in its supply contracts that gives its supplier thirty days to meet the best price the company can find worldwide or else risk immediate termination thereafter.

Delphi, the world's largest auto-parts maker, certainly feels the push into China. Its China business crossed the billion-dollar threshold in 2004—at the same time it laid off workers in its U.S plants.

The global market for Chinese parts is also helping create global players out of China's local parts companies. The largest of them, the Wanxiang Group, has thirty-one thousand employees and does nearly $2 billion in business a year, much of it with giants such as Delphi and Visteon. Chinese companies are also finding willing customers in the huge aftermarket for parts that go into car repairs.

In all, China exported $5.63 billion worth of parts in 2004, nearly double what it did the year before.* In late 2005, exports were on track to nearly double again, to $10 billion. Tellingly, if one keeps in mind what's happened in DVDs and other exported products, Wanxiang also plans to expand abroad.^ It already owns bits of American makers

•Of China's car part sales to foreign manufacturers, $2.8 billion went to GM alone.

Universal Automotive Industries and Rockford Powertrain and has new operations in Germany and Australia too.

But creating a Chinese industrial base with its own center of gravity is not all win-win for the world's automakers. Once the automakers have a world-class supply chain in place, populated with strong Chinese companies tutored by their foreign partners in management and technology, they also have strong competitors on their hands. The same holds true for the giant auto-parts companies, which have their own networks of suppliers beneath them. Inevitably their technology and expertise leach out to the local economy in ways they cannot control. Delphi, for one, is fed by a host of local second- and third-tier suppliers that provide it with parts, but only if they can bring their plants up to Delphi's high standards. "Our second-tier suppliers must conform to the management and quality controls that meet Delphi's culture," says Jinya Chen, president of Delphi China. "It is fair to say that Delphi is bringing a culture of quality to China."

The market in China gets particularly knotty when one considers that big global automakers must partner with local, usually state-owned, firms to do business in the country. The auto sector is one of the few in which the Chinese government still twists arms to get foreigners to enter joint-venture relationships with the state. And yet, the state companies are not all hindered in their relationships. They can, for instance, enter into multiple joint ventures with multiple foreign firms. On top of that, the Chinese government has decreed that in joint-venture arrangements, all intellectual property brought to the arrangement by one of the partners is owned equally by the other partners. For Western and Japanese companies with vast stores of proprietary technology, the law is a bad deal. It gives their Chinese partners the right to distribute that technology outside the firm to whomever they please. That puts the Chinese companies in the unique position of having the ability to combine top technology from several partners into their own vehicles.

China's unmistakable long-term goal is to rank among the world's leading car-producing economies, and free access to technology is one quick ticket there. "It can cost an American or Japanese automaker between one billion and two billion dollars to develop a new car," notes Professor Oded Shenkar, who has made a career out of observing Asian

automakers, beginning with the global ascent of the big Japanese companies in the 1970s.

The loose passing of intellectual property in the automotive sector, Shenkar argues, equates to an enormous state subsidy. Detroit might have to sell hundreds of thousands of cars to earn back its development costs on a particular model, but Chinese manufacturers that simply expropriate the models can earn back their money almost immediately. "Also if you knock off another company's model, there is no way the original manufacturer can beat you on price." The Chinese knockoffs also do not have to pay for advertising, since the models they ape are usually heavily promoted. "There's one more savings," Shenkar adds. "If you're an imitator, you only have to imitate the successful models. The Chinese tend to borrow only from the tried-and-true cars."

The realities of technology transfer in China also help the domestic car companies as know-how passes from advanced foreign companies to needy domestic ones through back channels. VW found its own proprietary parts built into a domestic rival's new cars. At Shanghai's big auto show in 2003, GM was shocked to find that a $9,000 small family van it was just unveiling had an exact double, priced at $6,000, at a Chinese manufacturer's booth down the same row. The cheaper vehicle was produced by a company called Chery, which was owned in part by GM's big Chinese joint-venture partner, Shanghai Auto. Perhaps to Shanghai Auto's credit, it reportedly quickly divested itself of its interest in Chery. For its part, the Chinese government ruled as itusually does in cases where Chinese companies are liberally influenced by their foreign competitors. It decided GM had no evidence for its case.*

Shenkar fears that much of the activity dangerous to the long-term health of global car companies is transpiring under the radar of American industry, regulators, and the public. In June 2002, China Daily, one of the government newspapers, ran a short, tantalizing item announc-

*Chery subsequently joined with American automotive entrepreneur Malcolm Bricklin to export cars to the United States. Bricklin expects a multibitlion-dollar business in Chinese imports, called Visionary Vehicles, to develop in short order. For Bricklin, the negative publicity over Chery serves as a publicity-generating asset attracting American buyers who want low-cost cars.

ing that 252 Chinese-made economy cars had been shipped by Tianjin Automotive Xiali Co. to Port Everglades in Florida, the first Chinese cars exported to the United States. A Boca Raton company, the paper said, planned on receiving 25,000 Xiali cars over the next five years. The small cars were the same models that swarm Beijing as bumpy red taxis, get fifty-six miles to the gallon, and cost under $6,000 in China. The cars never made it to American showrooms. Presumably they were shipped off to down-market climes where warranty service comes cheap. Nevertheless, the news item pointed toward a trade network gearing up to sell Chinese auto brands in the United States,

"No one is paying attention to Chinese exports. Most people think they aren't exporting at all yet," says Shenkar, "but they already are." He means not just Chinese brands, but global-brand cars that are made in China. Last year VW exported between sixty thousand and seventy thousand cars made in China to Australia. Others are heading toward the Middle East. Honda, the company that makes the most coveted cars in China right now, has convinced the Chinese government to let it build a wholly owned factory—the first of its kind for a foreign company—in China by promising the government that every car made in the plant will be exported. Toyota recently revealed that engines made in its China plant will end up in cars destined for the U.S. market.

Shenkar says that our blind eye to Chinese exports reminds him of how America acted when the Japanese car companies first made their presence known offshore. "No one took them seriously. American carmakers said that the foreign models were a fad." Shenkar describes China's limited exports so far as the tip of the iceberg. The country already makes more cars than it needs, and in a few years it may be making several million more cars a year than it can sell at home. "The whole world has overcapacity right now. The Chinese, like everyone else, will be looking to export to sell all those extra cars."

So, ironically, high demand in China is pushing prices down globally. Even in a country where demand is growing geometrically, and where the world's carmakers are investing billions, there's a price war. This decade, prices for cars in China have been dropping between 10 and 20 percent a year, a trend that is expected to continue. When sales growth slowed in 2004, the big foreign car companies quickly slashed thousands of dollars off the prices of their cars. Buick, which is enjoying something

of a second coming in China, where it is commonly regarded as the car that offers the best value for the money, cut $5,000 from the price of its Regal sedan. VW cut all its prices by 11 percent, and Hyundai by 10 percent.'

The worldwide trend of car prices is already deflationary—over the last twenty years they've risen more slowly than broader price indexes—and China's exports will exert greater downward pressure still. The Chinese market's ability to drastically push down the prices of automobiles is a prospect that is both frightening and tantalizing. Frightening because steep deflation in cars has the potential to deflate entire economies, throwing millions out of work. Exciting because, well, who wouldn't want a good car for a third of the cost?

A few supercheap cars already exist. Wanfeng, the company that exports Jeep Cherokee clones to the Middle East, has already shown that it can make an impressive export car for $10,000 in China, provided it doesn't have to brave too tough a regulatory market abroad. Koreans currently make the lowest-priced sedan in the United States, the K I A Rio, which lists with no extras at $9,665. That buys basic transportation: 103 horsepower and the road feel of a kangaroo. One reviewer, struggling to say something nice, wrote that if you "keep engine rpm up . . . the Rio can stay with the flow of traffic on the highway." The earliest Chinese export car might not be much better. "A first automotive product here," speculates Kevin Smith, editor of Motor Trend, "would represent the bottom of the market in features, refinement, and quality, but it won't be too far behind its competition." Smith points out that it took the Koreans ten years to get their cars up to a quality acceptable to American buyers. He thinks the Chinese may get there in half the time.

What will the first Chinese cars made for the American market look like.'^ Auto insiders can only speculate. Michael Dunne of Automotive Resources Asia believes it will be a plain vanilla knockoff of some other country's economy car. Paul Lienert, a veteran Detroit automotive columnist, expects it to have licensed or "borrowed" technology on the inside, to come equipped with a decent four-cycle engine, radio, and air-conditioning, but have some Chinese design spin on the outside. I f that means it will conform to current consumer tastes in China, the car will come with a touch of glitzy gold trim.

So where might one buy a Chinese car when it gets here." To keep cars cheap, a new entrant would have to find an alternative to a dealer net-

work, which both adds costs and takes time to develop. When Subaru broke into the U.S. market, it sold cars through gasoline service stations. Pep Boys' Auto Parts stores in the United States are already selling Chinese-made motorcycles and off-road sport bikes. Some are dead ringers in miniature for American-made motorcycles, while others look as if they just drove out of the pages of a Japanese comic book. Retail stores would be an easy alternative channel. Costco and other big-box retailers are a solid possibility. Costco already parks SUVs at store doors and has negotiated no-haggle prices with car dealers around the country. And the stores are already warehouses for the industrial output of China, a sign that their distribution channels are ready for the first wave of Chinese cars coming to America.

China Calling

The experience of Motorola, the U.S. telecommunications giant, offers another lesson in how China's size changes the rules of competition and consumption there and everywhere else. Every month, 5 million new subscribers sign up for mobile-phone service in China. The country's 300 million mobile-phone users make China by far the largest such market in the world (and hundreds of millions more accounts are coming).

Hence the world's makers of handsets need to be in China. It gives them a chance to grow at a time when the big European and U.S. markets are saturated. Not that it's a seller's market: for equipment makers, China is also the most competitive, changeable environment in the world. New manufacturers appear out of nowhere; new phones materiahze daily at big-city stores. Currently there are eight hundred handset models to choose from. Young urban consumers change phones on average after only eight months; they sell them to someone else or pass them to family members. Mobile phones in the hands of migrant construction workers, whose annual wages might not even cover the cost of a phone, are a common sight in Shanghai and Beijing.

This mobile-phone market in China was invented by Motorola. The story goes back twenty-some years. For Robert Galvin, the company's former and longtime chief executive, China in the early- to

mideighties promised a market that could more than make up for Motorola's having been foiled in Japan for years. But first the company had to develop a top-drawer telecommunications infrastructure. In an unscripted bold stroke at a dreary state ceremony during a tour of the country, Galvin turned to the minister of railroads and asked him whether he wanted to do a good job as minister and be done with it, or whether he wanted to create a world-class society. In doing so, Galvin tapped a thick vein of economic patriotism.

Motorola's company archives on its move into China are deep and open. They show that Galvin and his team knew that eventually the transfer of technology to China would sow formidable Chinese competitors. Nevertheless, Motorola decided its best strategy was to get into China early. Before long, Motorola's reports to China's political leaders^—infused with the same missionary vocabulary on industrial quality that had made the company a model for American manufacturers—were soon parroted by China's leadership. Galvin also brought Motorola's best technology to China. The proof today is in the size and efficacy of the country's mobile communications network: calls get through to phones m high-rises, subway cars, and distant hamlets—connections that would stymie mobile phones in the United States.

What no one at Motorola anticipated was how crowded the Chinese market would become. Nokia and Motorola now battle for market share in the Chinese handset business. German, Korean, and Taiwanese makers figure strongly. And all these foreign brands are now facing intense competition from indigenous Chinese phone makers.

"Competition goes through a cycle in China," says Zirui Tian, a researcher at INSEAD, the French business school. "At first the foreigners can make things at much lower cost than the Chinese. But as local companies come along to supply the multinational companies, the supply network expands very fast. Then local Chinese manufacturers can start to source their parts in China and drive the prices of their products far lower than the multinationals."

One of Motorola's most important suppliers is the battery maker BYD Company Ltd., based in Shenzhen, near Hong Kong. In only a decade, the private company has gone from virtual invisibility to owning more than 50 percent of the global market in mobile-phone batteries. Before BYD, phone batteries were made in highly automated plants, like

those run by Sanyo and Sony in Japan. But BYD, like Wanfeng, stripped robots and other machines out of the manufacturing process and replaced them with an army of workers. By paying for Chinese salaries, and not for million-dollar American, German, or Japanese machines, BYD slashed the price of batteries. Initially the company could not meet Motorola's quality demands, but the American company sent a team of engineers to work with the upstarts, and six months later BYD earned a Six Sigma certification, a universally recognized badge of quahty (which Motorola itself invented). That in China machines can be replaced by people for huge cost savings and without sacrifice in quality changes the competitive landscape of the global marketplace. When Motorola and Nokia were pressed to lower their prices by Chinese competitors, they turned to BYD.

One of the biggest challenges facing Motorola and other global manufacturers is that Chinese suppliers are getting too good. Their quality, low-priced parts have helped create new, homegrown, and extremely aggressive competitors. More than 40 percent of the Chinese domestic handset market now belongs to local companies such as Ningbo Bird, Nanjing Panda Electronics, Haier, and T C L Mobile. Ningbo Bird will produce 20 million handsets in 2004 and is likely soon to nudge its way into the ranks of the top ten mobile-phone makers in the world. The domestic makers have become so strong that when Siemens found its mobile handset business in China wanting, it joined with Ningbo Bird to gain both low-cost manufacturing and a developed distribution channel.

Yet Motorola can't exacdy exit the Chinese market. If it did, says Jim Gradoville, Motorola's vice president of Asia Pacific government relations, the Chinese companies that emerged from the crucible of their market.would be the leanest and most aggressive in the world, and a company like his would have no idea what hit it. So Motorola stays. Already the largest foreign investor in China's electronics industry, Motorola plans to triple its stake there to more than $10 billion by 2006.

325,000 New Engineers Each Year

How does any company cut costs and raise quality simultaneously.? It hires the smartest, most energetic people it can find in China.

"Look, China is the most exciting place in the world right now to be a manufacturer," says Mark Wall, president of the greater China region for G E Plastics. His operation sells the plastic pellets used to make everything from DVDs to building materials. Within two years G E will sell $1 billion in advanced materials, including plastics, in China. Wall, who came to China from G E Plastics, Brazil, describes a country in love with manufacturing like no other, where engineers come in excited and readily work long days. Where university students clamor to get into engineering and applied sciences. Like many American manufacturing executives in China, Wall talks about working in China with the delight that young computer whizzes felt when they found cool in Silicon Valley. Wall says he feels at home. He loves it.

GE, meanwhile, has every plan to capitalize on the local zeal for manufacturing. It recently opened a giant industrial research center in Shanghai, and by next year it will employ twelve hundred people in its Chinese labs. The company has also set up scholarship programs at leading Chinese technical universities.

GE will have no shortage of good candidates. The government is pouring resources into creating the world's largest army of industrialists. China has 17 million university and advanced vocational students (up more than threefold in five years), the majority of whom are in science and engineering. China will produce 325,000 engineers this year. That's five times as many as in the United States, where the number of engineering graduates has been declining since the early 1980s. It is hard to imagine Americans' enthusiasm for engineering sinking lower. Forty percent of all students who enter universities on the engineering track change their mind.

The ability of American industry to stay ahead of its international competition rests on the national gifts and resources that the United States devotes to innovation. Certainly, the confidence of big American companies like Motorola, General Motors, and Intel, all of which have billion-dollar-plus stakes in China, is based on the brainpower they have at home. The research gap between the United States and China remains vast. In December 2004, Washington authorized $3.7 billion to finance nanotechnology research, a sum the Chinese government cannot easily match within a scientific infrastructure that would itself take many more billions (and years) to build.

Yet when it comes to more mainstream, apphed industrial development and innovation, the separation among Chinese, American, and other multinational firms is beginning to narrow. Last year, China spent $60 billion on research and development. The only countries that spent more were the United States and Japan, which spent $282 billion and $104 billion, respectively. But again, China forces you to do the math: China's engineers and scientists usually make between one-sixth and one-tenth what Americans do, which means that the wide gaps in financing do not necessarily result in equally wide gaps in manpower or results. The United States spent nearly five times what China did, but had less than two times as many researchers (L3 million to 743,000).

For now, the emphasis in Chinese labs is weighted overwhelmingly toward the "D" side—meaning training for technical employees and managers. Nevertheless, foreign companies are quickly moving to integrate their China-based labs into their global research operations.

Motorola has nineteen research labs in China that develop technology for both the local and global markets. Several of the company's most innovative recent phones were developed there for the Chinese market.

Motorola's newest research center is located forty minutes from Chengdu, the capital of Sichuan, a province in southwestern China. Sichuan is slightly larger than California, but three times as populous. There are about 107 million people in the province, forty-three universities, and 1.2 million scientists and engineers. Sichuan's fragmented transportation system prevents Chengdu from rivaling the eastern powerhouses as a manufacturing center, but the city is promoting the advantage of its plentiful, relatively low-cost brain pool with its new research corridor, the West High-Tech Zone. And Motorola regards its building-r-subsidized generously by the development zone—as a world center for software engineering. The company now employs more than 150 developers there and has plans to add hundreds more. That will pit it against a growing number of the world's top research-driven enterprises taking advantage of Chengdu's largess: Intel, Ericsson, D-Link, Siemens, Alcatel, Mitsui & Company and Fuji Heavy Industries of Japan, and more than two hundred other firms in one of the area's special tech districts.

In all, foreign companies have established between two hundred and four hundred of their own research centers in China since 1990.

China's People's Daily has reported that most of the world's largest transnational corporations have set up research and development projects in China. In part, tax incentives attract such financing. But the biggest incentive of all, of course, is access to China's consumers. What is the likely outcome of all this R&D investment in China.? Even more overcapacity. Just as China's abundant unskilled workers feed the world more shoes and more gadgets than it needs—or at least more than it can absorb without forcing prices down—China's abundance of newly skilled industrialists threatens to swamp the world's most highly prized high-tech markets. In the past three years, foreign investors have invested or pledged $15 billion to build nineteen new semiconductor factories. China imports 80 percent of the semiconductor chips it needs, $19 billion worth, and the government has made it a point of national pride to end the country's dependence on foreigners. Industry observers seem to agree that China will be able to compete with the world's leading semiconductor makers in a decade, but even before that it may exert strong downward pressure on chip prices. Is there a coming recession in the chip market." Morris Chang, the influential founder of Taiwan Semiconductor Manufacturing, the world's largest dedicated independent semiconductor foundry, asked an industry gathering. "Yes, I think there will be," he said. And who will cause it? China, thanks to all the capacity it's building.

Plunging into Soft Tissue

Given how quickly China means to climb the industrial ladder, perhaps the next question is whether any commercial technology is beyond an imminent challenge from China. Gal Dymant, an American-Israeli venture capitalist in Beijing, believes the answer is that few will be. One of the companies Dymant works with, a database publisher named Asia Direct, produces an annual China Hi-Tech Directory. Tracking the directory's updates year to year gives Dymant an informal measure of the shifts in Chinese industry.

The first thing one notices about the directories, he says, is how much thicker they grow every year, particularly in industries where there have been mammoth foreign investments. In 2003, Asia Direct's

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directory grew considerably fatter in the sections devoted to China's domestic mobile-phone manufacturers and suppliers, broadband communications, and in companies establishing themselves in cities outside of China's eastern powerhouses. The manufacture and sale of integrated chips is also soaring, along with healthy gains in China's software and information-services markets. Then again, every section in the directory has grown, including biotechnology, semiconductors, and Internet development, areas in which Chinese firms have newly established themselves, many now in partnership with the world's leading technology-driven companies.

Casting a seasoned eye across the investment landscape, Dymant finds medical equipment to be one of the most promising areas for the future. He is putting together an investor group to build a Chinese version of one of the world's most advanced and costly medical devices, the magnetic resonance imaging (MRI) machine, a $2-million, room-size miracle of technology that captures detailed images of soft tissue in the human body. Patients are placed within a magnetic coil and bombarded with radio waves. Because different atoms in the body respond

differendy to waves, physicians can see abnormalities in the areas that the MRI captures. Although they are expensive, MRI machines can spare patients exploratory surgery in some cases and in others make available diagnostic findings that were once impossible.
"The talent is here to build anything," Dymant says. "We think we can develop MRIs for about sixty percent of the price they are built for in the United States."
That's a big claim. Although the $4-billion-a-year MRI market is destined to keep growing, especially as the machine itself evolves for a greater number of uses, actually making a marketable MRI machine is a considerable undertaking. The process requires the best of the world's expertise in several highly technical fields. A Chinese industry would involve physicists with up-to-date knowledge of nuclear resonance and superconductivity. It would need programmers and technicians who can handle precise 3-D-magnetic-fieId design. It would require experts in materials science who understand magnetic materials, and others who design and steer the manufacture of the latest in integrated circuits.
Yet Dymant does not want to just build a machine, but one worthy of challenging the ones produced by the likes of Philips, General Electric,

Siemens, and other companies that bring the best technology into their MRI devices. Making an MRI device that is even slightly out-of-date would pit China's industry against the large market in used machines that already supplies hospitals outside of advanced industrial countries with cut-rate, but still highly useful, equipment. No, a new industry would have to build machines that are as flexible and usable as the best, but much cheaper. "In China, it can be done," says Dymant, "because the expertise is here and available at much lower cost."
Would a Chinese-made MRI have Chinese-made computer chips in it.? I f not immediately, then soon. In a special October 2004 issue devoted to China, Fortune magazine focused on the success that Intel has had in seizing market share and racking up profits in the country, won with daring investments and marketing strategies."" The company's success would seem assured except that China's market for computers and microprocessors, though big, is still growing so fast that Intel's future in China faces serious challenges from latecomers, including Chinese companies that are finding ways to challenge Intel's seemingly unbeatable technological lead.
Researchers at the Chinese Academy of Sciences, working with BLX, a chip-design firm that was started by academy scientists, claim to have come up with a chip, called Godson 3, that equals Intel's best chips from four years ago. To bring Chinese chips up to Intel's current level of technology, B L X has joined with Intel's American archrival Advanced Micro Devices, which has its own designs on Intel's place in the Chinese market.
Speaking to the press. Dr. Li Guojie, chairman of BLX, and the director of the Institute of Computing Technology, Chinese Academy of Sciences, said, "The partnership between AMD and B L X is a win-win solution. We are pleased to collaborate at a deep level with a world-class company like AMD who is committed to explore this market with BLX not only for China, but also for increasing visibility of Chinese design and technology globally."
The arrangement also shows the tight links between China's government

research arms and its efforts to acquire advanced technology.
By playing foreign firms against one another in the marketplace, China will soon push to the top ranks of chip manufacturers.
A similar process may well make China into a strong competitor in

advanced medical devices. The world is full of technology firms that compete to provide parts and software for MRI machines. They will be working hard to crack the China market and will inevitably be offering their best technology to firms such as Dymant's that are looking to create a Chinese MRI industry.

Taking a Pill for the Pain

The potential market for cutting-edge Chinese-made MRI machines suggests the changes coming to Chinese health-care practices, even in a society where private health-care insurance policies are rare and most medical care is provided pay-as-you-go. Although traditional Chinese medicine will remam entrenched in the culture well mto the foreseeable future, the demand for Western medicine is soaring. China s drug industry is big, with sales of $7.5 billion in 2004. China also exports $3.5 billion worth of Western medicines, which are particularly welcome in countries with few regulatory screens and a need for low-cost medicines.
The great American and European drug companies—among the most profitable enterprises in the world—know this, of course. Not that they tread into the Chinese market easily. Rather, they enter knowing full well they face a China often unwilling to honor the precious patent and trademark protections upon which the profits of drug companies depend.
Unlike most businesses, the pharmaceutical industry is an open book to new entrants because the components and chemical mechanisms of all drugs sold in advanced economies are available in documents on file with government regulators. Foreign drug companies beyond the power of effective regulatory regimes can easily comb government records for the formulas of products they can reproduce themselves. The value of this information is enormous. For example, Pfizer, the maker of Viagra, had $45 billion in revenue in 2003 and spent $7.1 billion on research and development.'
Until recently, nearly every drug sold in China was a copy of a foreign drug, a fact reflected in China's meager pharmaceutical research and development. Allan Zhang, senior economist at Pricewaterhouse-Coopers, notes that in 1999 total R&D in China's drug industry did not

match the budget of any single large global drug company. "Up until now," Zhang writes, "this strategy has made economic sense for a developing country like China: while it takes Western companies about ten to fifteen years—at an average of $250 million—to develop a new medicine, copying new medicines takes only three to five years, at a cost between . . . $60,000 and $120,000.'"*
China's willingness to protect foreign drug companies from poaching is improving, but is still far from predictable. Pfizer lost its patent protection for Viagra in China when the government ruled the company's patent application did not adequately describe the use of the drug's key ingredient. In addition, the drug, according to the ruling, failed to meet the "novelty requirement," which for Pfizer turns out to be a kind

of catch-22, since the requirement means, in essence, that drugs that have successfully been copied in China before they are marketed by their foreign originators have no chance for patent protection. The ruling left open the door for the makers of Viagra's low-cost equivalents, which in China are—as they would be anywhere—big sellers. Local press coverage of the Viagra ruling made a point of mentioning that one Viagra pill costs one yuan to manufacture but sells for ninety-eight yuan, something sure to pique the attention of margin-squeezing Chinese manufacturers and perhaps encourage more copycats to rush to market.*
Although Pfizer fought the ruling, not every company sees value in mixing it up pubhcly with the Chinese government. In the wake of the fight over Viagra, British drug giant GlaxoSmithKIint simply gave up its patent rights to a key component of its highly successful diabetes drug

*The vast majority of Chinese pharmacies, the kind that dispense Western-style medicines, are still government-run and look it. Druggists in long white lab coats that look as though they were salvaged from a World War II hospital ship dispense medicines after prescriptions pass through three or four layers of the microbureaucracies of the shop. The stores themselves look like vintage hospital dispensaries, devoid of the advertising and special offers that scream from the floors, walls, and ceiling of a Western chain store. Viagra exists somewhere on the guarded shelves of the government shops, but it is available only by prescription. Chinese customers need not brave the scrutiny of the pharmacy to buy the drug or knockoff versions of it. Sex stores are booming in China, which despite China's ostensible prudery, is not so surprising. China is the source of much of the erotic knickknacks that are sold around the world, especially the latex and plastic varieties. China's sex stores display those unabashedly; the boxes even sit in their windows looking out onto busy streets. They also sells chemical aids, and lots of Viagra-like stuff

Avandia when its initial efforts to enforce its rights met a court challenge from three Chinese competitors. The company did not comment on the motives for its capitulation, but one can wonder whether some behindthe-scenes deliberations convinced the company that its success in the Chinese market over the long haul requires it to sharpen its political standing before it sharpens its legal briefs. The key in China is to stay in the market, and many companies are willing to make extraordinary bargains to preserve a place. The Chinese government is far from enamored with the Western tendency to push disputes into court and, to its credit, forces negotiation on a wide range of issues that in other countries would be attacked with lawyers. And to its further credit, the results of negotiation tend to weigh heavily toward the interests of the Chinese players. Or in the case of Pfizer, to side with the country's Davids against the Big Pharma GoHath.
Another factor is most certainly at work too. The Chinese government is by far the largest purchaser of drugs in the country, and it's in its budgetary interest to keep prices down.' Its strategy often works; many important drugs cost less in China than they do nearly everywhere else in the world.
The Chinese are tough with foreign drug makers for yet another reason: the world's largest pharmaceutical companies are by nearly any measure among the most successful businesses in history, and China has little desire to remain a nation of copycat drug firms. Medical and related biotechnology research is among its top scientific priorities. In fact, China is developing a large population of researchers working in the life sciences. In biotech alone, the country boasts fifty thousand research

scientists, with another forty-five hundred graduating from universities
every year. China also works hard to attract Chinese scientists who have
been trained and have worked abroad. The Shenzhen biotech corridor
is one example of a local government luring scientists to private enterprise,
but across the country there are similar efforts to attract foreigntrained
scientists into Chinese academia. China offers returning scholars
high positions and salaries commensurate with what they were making
abroad.
The country is still far behind the well-resourced labs of America,
Europe, and Japan. The advanced R&D processes used by multinational
drug companies, for instance, are still rare in China.' Remedy, however.

will likely come quickly from foreign companies setting up research in
China. According to the British pharmaceutical trade magazine Scrip,
China's allure goes beyond its affordable scientists to what the magazine
delicately calls China's "freedom of research." That is the country's
willingness to forge ahead in areas that other countries, the United States
in particular, have found ethically sticky.
At the top of the list is research on human embryonic stem cells, which
faces none of the religious objections that conservatives in America
have raised to stymie research in U.S. labs. Scrip points out that China's
willingness to charge ahead has led to several potent research partnerships
between medical centers, universities, and multinational companies.
To name two among many, Swiss giant Roche has joined with the
Chinese National Human Genome Center in Shanghai to investigate
diabetes and schizophrenia, and GlaxoSmithKline is working with
another Shanghai research center to develop an advanced lab for recombinatorial
chemistry.*
Beyond such high-profile collaborations, China has hundreds of
biotech laboratories (some focused on agriculture) and a growing number
of start-ups each year. The country is pouring no less than $600 million
a year directly into biotech research,' much of it aimed at a rapidly
growing market. Frost and Sullivan, a New York research and consulting
firm with offices worldwide, estimates that the Chinese
biotechnology market will grow at 13.5 percent a year and soon reach
$8.8 billion in sales. The growth will come as China's own firms mature,
and as global companies move to tap China's brains at bargain prices.'"
Greg Lucier, the president and CEO of Invitrogen, a company that
yearly sells a billion dollars' worth of tools and technologies to biotech
research labs, describes China as having "one of the most developed sets
of scientific communities that we see outside the United States and is
really quite strong in terms of agricultural biotech and gene therapy."
Lucier notes that from 1998 until 2004, China made a mark as one of
six countries involved in the Human Genome Project, and that its sci-
*One of China's politically awkward advantages for drug companies is that the country
has an extremely large population of untreated sick people who can be enlisted into drug
trials at low cost. China's millions of AIDS sufferers are one such group, and its 300 million
smokers are another.

entists continue to decode genomes and make them available to the
research community worldwide. He also points out that it was China
that introduced the world to a complete genome for rice, "a very important

development." The country's growing population and shrinking stock of arable land lend urgency to this agricultural biotech research, and China already has one of the highest concentrations in the world of genetically modified crops growing in its fields. In human medicine, China has been an early adopter of gene-therapy drugs; it was one of the first countries where Gendicine, a drug for use with certain cancers, was commercially sold. "They really are on the cutting edge of gene therapy as we see it," says Lucier.

The commercial potential of China's biotech, Lucier allows, is just beginning to show, yet he warns that China has a way of creating big businesses fast. Lucier measures China's future in the millions' worth of annual sales his company already makes, and the $100 million of cumulative sales it expects to make by 2006. As a veteran executive at General Electric, Lucier saw how it took China only five years to develop into a billion-dollar market for MRI machines and other advanced medical products. "There's a very fast-growing, affluent health-care population coming in China that will want the type of very expensive drugs that come out of biotech," he says.

Flights of Fancy

All those American and European drug company executives arriving each day by jumbo jet in Shanghai and Beijing to scout the challenging Chinese market enter the country's spodess new airports knowing that the cost of doing business may be the forfeiture of the wide profit margins that popular drugs and medical devices earn worldwide. But they may not realize that the very airplane they've arrived on is, like their proprietary pharmaceuticals, a product highly prized by the Chinese.

Few industries pit nations as fiercely against one another as aerospace. The intense competition between U.S. aircraft maker Boeing and European Airbus is particularly visible, but competition among a worldwide assortment of smaller aircraft companies and components manufacturers is just as heated and far more geographically diverse. Brazilian,

Russian, Canadian, and German companies vie for the growing market in smaller passenger jets, for example. The civilian aircraft industry may also be the most demanding of governments for financial and political support. Boeing, which is seen as a vital strategic manufacturer in the United States, receives billions in government defense money. (The once seemingly indomitable company now struggles to compete in both its defense and civilian aircraft businesses. Between 1998 and 2003, Boeing's workforce dropped from 238,600 to 157,054.)" The ownership of Airbus is divided up among companies with strong links to the national governments of Britain, France, Germany, and Spain, and the company became the world's leading aircraft maker on the strength of massive government subsidies and favorable treatment from governmentowned European airlines.

The benefits of much of that largess now find their way to China, the world's largely untapped market for aircraft. Although China has long manufactured warplanes, including a new light fighter designed to fulfill the needs of the military export market, as well as missiles, the country has not yet built a wide-body commercial passenger jet to a global standard. Projections for growth of Chinese air travel are enormous. Airbus estimates that the Chinese market will grow fivefold by 2022, and that the country will need at least thirteen hundred planes that seat one hundred or more people to meet the demand. That makes China's skies a $140 billion market,'^ and the world's aircraft makers will do whatever is necessary to reach for it. Only the U.S.-market would be bigger.

By the standards of the new Chinese economy, Boeing has a long history in the country. As with telecommunications, air travel is a networked business whose growth depends on increasing connections between points. Boeing saw early on that its involvement would give it a place in a market destined to explode. Its efforts paid off in aircraft sales. Today, Boeing planes have a 65 percent share of the Chinese market. Boeing has also played an important role in the development of China's aircraft industry, helping Chinese companies grow into suppliers of key parts of its aircraft. The company reports more than three thousand Boeing aircraft worldwide incorporate major parts and assemblies from Chinese suppliers. By 2010, Boeing will be buying $1.3 billion worth of parts in China each year.

"Boeing's industrial partnership with China is real and current," David Wang, president of Boeing China told the Chinese press in 2004. "Our emphasis is that these programs should be able to add value to our Chinese partners as much as possible as soon as they can." Wang's remarks are a public show of how willing Boeing is to move technology to China as quickly as possible.

The willingness to prep local suppliers and bring in foreign technology is an important part of the bargains that aircraft companies make to gain access to the Chinese market. Airbus and all other major sellers in China's aircraft market play the roles as best they can too. China prudently alternates which aircraft makers it buys plahes from, giving it leverage to forge the best terms on price and technical transfers from each of them. A 1999 report issued by the Bureau of Industry and Security arm of the U.S. Department of Commerce observed that "despite the obviously enormous opportunities present in China's aviation sector... U.S. aerospace companies, represented primarily by Boeing . . . and several parts suppliers, appear to be willing to make significant concessions to Chinese state planners in coproduction agreements in return for increased market access." The report goes on to give credence to complaints that U.S.-based aerospace firms "have already agreed to onerous conditions in order to win access to the market in the PRC by acceding to coproduction deals and technology transfers." It also cites remarks by an executive at supplier Allied Signal (now part of Honey well) who expresses hope that the company's technology transfers will buy it a place in the Chinese market, calling the move "recognition by senior management that there's just a tremendous future market potential for aerospace in China, and we need to be there."'^ As in all industries, China's entry into the WTO disallows forced technology transfers, but it is unlikely to hamper aerospace firms locked in an intense global battle from bartering their jewels for advantage.

As a result of its toughness, the Chinese government can now proclaim the country as a major center for aircraft parts and whole planes. The manufacture of a newly designed regional jet by China Aviation Industry Corp I , a state-owned aviation company, is being undertaken with technical support from Boeing."' The company expects to make China's first large aircraft by 2018. "China's aviation sector will be incomplete without developing its own civil aviation industry," L i u

Gaozhuo, the company's president, said in China Daily. "Neither could China elevate itself as an aviation power if it does not develop large aircraft by itself."" L iu also recounted how past efforts to create a homegrown aircraft failed, in part because China did not have the intellectual property rights to make many of the components needed to get a plane off the ground. The country's new large plane, he claimed, will be built with intellectual property owned by the Chinese. He did not elaborate how much of that will have been cajoled out of foreign companies as a condition for their role in the Chinese market.

It is natural for countries to use their market power to gain whatever commercial advantage they can. Faulting the Chinese for extracting concessions from companies that want to play in its yard would be faulting it for demanding what its corporate suitors have willingly agreed to. And if the Chinese usurp technology that is not rightfully theirs, it is hard to argue that the corporate victims, at least in aerospace, could have expected otherwise. Companies such as Boeing and Airbus have made their choice. They participate in China's great aviation market because China's growth gives them a chance to sell hundreds of planes outside their mature markets. Without China, perhaps neither would prosper.

But while they make their bargain with the Chinese, global aerospace companies create an aircraft industry that will eventually meet them head-on. China's regional jet, its government-owned maker claims, is a success because it costs millions less than the competition. If China's large aircraft undercuts the competition and finds a capti.ve market among China's airlines, as Airbus once found in Europe, then the world's aircraft makers will need a new survival strategy. I f so, most likely they will appeal to their own governments for subsidy, no matter which Chinese gambits have come back to haunt them.

and ask whether the software being used to create the new package is itself licensed, and one gets knowing smiles and an oblique answer: "You know, the people who work here are very smart."

Reverse Colonialism: How Sweet It Is

China's failure to police intellectual property, in effect, creates a massive global subsidy worth hundreds of billions of dollars to its businesses and people. Seen another way, China's vast counterfeiting schemes act on the rest of the world the way colonial armies once did, invading deep into the economies of their victims, expropriating their most valued assets, and in so doing, undermining their victims' ability to counter. As China grows into a great power, the wealth transferred into the country by stealing intellectual property will propel it forward.

But should China be blamed for behavior that robs the rest of the world of wealth it has spent generations accumulating." Perhaps. Yet perhaps the rest of the world also needs to examine itself China is merely acting as other nations do when presented with the chance to increase their wealth and power. So far, pilfering intellectual property has cost China litde and benefited it tremendously.

Moreover, hundreds of billions of dollars in foreign investment into the country has made the world's best technology easily available to China's infringers. By investing in the country's manufacturing infrastructure, by providing the expertise, machines, and software China needs to produce world-class products, the world is also helping assemble the biggest, most sophisticated, and most successful illegal manufacturing cornplex in the world.

So, as foreign investors stake their own prosperity on China's, they push China into the position where it can play rule maker. In the not so distant future, when China matches the world's largest markets and is among the world's most advanced and prolific manufacturers, it may well have the brand names, entertainment industry, and technology that set the world's standards. In a country that still bitterly remembers the humiliation of colonization, turning the tables by pilfering the property of foreigners will not cause much remorse.

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CHAPTER T E N

THE CHINESE-AMERICAN ECONOMY

PERCEIVING THE EFFECTS OF CHINA'S GLOBAL REACH IS EASY I F ONE flaunts a brilliantly phonied Swiss watch on one's wrist or enjoys a cheap new Chinese DVD player at home. And certainly those who have lost or who might lose their jobs to Chinese factories feel China's presence acutely. But China touches Americans, and by extension the rest of the world, in other realms every day. Taken as a whole, these forces show that beyond the fate of one industry or another, beyond issues of labor or piracy or even the recent high price of oil, caused in part by rising Chinese demand, America's economy and the world's are now inextricably bound up with China's. Although describing these bigger, omnipresent effects begins with some abstraction, once grasped, they are as tangible as the change in one's pocket.

First, the Good News

Walk into nearly any retail store, examine price tags and labels, and it is clear that China saves consumers enormous amounts of money. How much.? Gary Clyde Hufbauer, one of the first-rate economists at the Institute for International Economics in Washington, has done some rough math using China's 2004 trade numbers with the United States that shows just how much China saves American consumers.

"From time immemorial," says Hufbauer, "most American and Japanese businesses have been reluctant to move their manufacturing to new locales unless they can save at least ten to twenty percent with the move."

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When one considers that the nearly $170 billion worth of manufactured goods coming from China to America are, by and large, goods that once came from somewhere else, the magnitude of the savings begins to come into view. But the savings that come directly from China's factories are just the beginning. China's prices have a downward pricing effect on the rest of the world's manufacturers that dwarfs the savings offered by Chinese goods alone. Hufbauer figures some $500 billion in goods come from countries that are China's low-wage competitors. Another $450 billion in goods come from the high-wage American and Japanese companies that compete with China's producers. That adds up, he says, to nearly a trillion dollars' worth of additional goods whose prices are pushed down by Chinese competition. Even a conservative estimate of the effect is impressive. If the savings to the United States on that near trillion dollars of non-Chinese trade are just 3 to 5 percent, instead of the 20 percent the Chinese can deliver, the average American household enjoys further savings ranging between $500 and $600, Hufbauer calculates. People who spend more get an even bigger China bonus. In all, U.S. consumers saved around $150 billion as a result of Chinese manufacturing, a sum not all that distant from our trade deficit with China.

One way to put the numbers in perspective is to consider how $500 per household matches up against the much ballyhooed 2003 tax cut pushed by the Bush administration and passed by the American Congress, a cut that was justified in large part as a way to pump consumer spending into the U.S. economy and help lift the country out of its economic rut. The Jobs and Growth Tax Relief Reconciliation Act of 2003 was designed. President Bush said when it was signed, "to deliver substantial tax relief to 136 million American taxpayers . . . adding fuel to an economic recovery."' For an American family of four earning $75,000 a year, the savings from China could easily have equaled at least half of the $1,100 in savings that the tax cuts delivered.*

•Savings from tax cuts or in the form of discounts on merchandise each give money to consumers to spend or save as they please. Yet in relation to the larger economy, discounts and tax cuts are very different events. The 2003 tax cuts, wfhich U.S. politicians claimed "returned" $130 billion to Americans, actually distributed cash out of more federal debt being heaped on the citizenry, which, for its part, turned around and spent some $150 billion on Chinese goods.

The Price Is Right

The downward pressure from Chinese manufacturers even shows up now when the prices of raw materials rise. In the past when raw materials climbed in price, their costs were hurriedly passed on to consumers buying finished goods. Thanks to competitive pressures both on and from Chinese manufacturing, that dynamic has changed. While China's economic boom helped run up the cost of steel, copper, aluminum, nickel, plastics, and nearly every other important industrial commodity in 2003 and 2004, the prices of cars in major markets dropped. Chinese factories churning out cheap car parts were one cause. When in December 2003 cotton chmbed to its highest price in seven years, the price of clothing in American stores was down for the year.

In fact, in the United States between 1998 and 2004, prices fell in nearly every product category in which China was the top exporter. "The manufactured goods that have dropped in price the most are those made by China," says W. Michael Cox, chief economist for the Federal Reserve Bank of Dallas, citing figures assembled by the bank for its 2003 annual report, published in 2004. Personal computers, the most outstanding example, dropped by 28 percent, televisions by nearly 12 percent, cameras and toys by around 8 percent, while other electronics, clothing of all sorts, shoes, and tableware also dropped in price.^

The declines are impressive in themselves, but considering that the U.S. cost of living rose 16 percent^ over the same period, the price drops forced by goods shipped out of China provided especially welcome relief.

China will continue to offer Americans more bargains as time goes forward because the vast majority of imports into the United States still come from countries that pay relatively high wages. Meanwhile the portion of U.S. imports from low-wage countries continues to rise, especially from very poor countries. Over the past quarter of a century, there has been a surge of imports into the United States from the fifty-eight countries where people earn one-twentieth, or even less, of what Americans do. (The list of countries includes such trouble spots as Haiti, the Congo, and Nepal, and also more promising locales such as India and Indonesia.) But where trade with the United States, and indeed most of the rest of the world, is concerned, China plays a bigger role than all of

the other low-wage countries combined. Led by China, the increases in goods from low-wage countries show up both in the sheer volume of trade coming into the United States and as a proportion of what Americans buy overall. In 1981, the United States imported $319 billion {using constant Year 2000 dollars) worth of goods and services from abroad, an amount equal to just 6 percent of the country's gross domestic product. By 2001, however, Americans bought $1.44 trillion in imports, making up more than 14 percent of the GDP. Over that same time, goods from low-income countries went from just 4 percent of imports {$12.8 billion) to more than 10 percent {$144 biUion). By 2011, low-income countries, primarily China, should account for 24 percent of everything Americans buy from outside the country's borders.'

The Price Is Not Always Right

So are die prices that Americans pay on Chinese goods the lowest possible? Usually, but not necessarily. It depends on what's being sold and whether that industry can successfully lobby the government for protection.

"One of the big problems of economic specialization is that it creates special interest groups," observes Cox, who believes that economic policy ought to be aimed primarily at providing a better deal for consumers. "In the political process, poHticians usually end up representing suppliers who can donate large amounts to their campaigns." Cox argues that this imbalance can leave consumers woefully underrepresented. Manufacturers' groups lobby policymakers because their industries have huge stakes in trade policy, but in any given industry, an individual consumer's interests might add up to just a few dollars a year. For example, when the Bush administration slapped quotas on Chinese brassieres in November 2003 to protect American manufacturers, it may have saved the American bra mdustry from millions in losses, while the cost of the quotas to the typical bra buyer might have been only ten or twenty dollars per year. The manufacturers. Cox says, can send all sorts of people to Washington to make their case, but no consumers are going to make the trip just to save a few dollars on whatever product is up for discussion. And so, the biggest group with the most billions at stake has the smallest voice.

It is a bitter kink of fate that among those who need the China savings most are those who have lost their jobs because their employers needed to cut costs and raise productivity to meet the China price, or because they worked for businesses that could no longer compete on any terms.

"Wal-Mart is the best thing that ever happened to poor people," says Cox. In his view, where die consumer is king, even the practices that U.S. businesses commonly call "dumping"* by Chinese manufacturers ought to be seen as a boon. "Don't call it dumped," he says, "call it treasure."

Cox's view of the primacy of consumer interests, though widely shared by American economists, is hardly an accepted truth around the world. Countries whose industries face competition from China must make harsh choices that weigh the competing interests of businesses and consumers. Choosing for the consumer requires putting faith in the very economic churn that is now making China a supercompetitor. And it truly is an act of faith. Economists teach that by embracing the tumult of the free market, nations give themselves the best chance at prosperity. But most of the world remains unsold on consumer-centric capitalism. Europe, Japan, and the developing world largely focus their economic policies on protecting their industries, their workers, or both, ahead of the interests of consumers.

Bonds That Tie

China's competitive challenge not only pits Americans against themselves as shoppers and workers but as investors too. Lou Dobbs, the influential CNN financial commentator whose vociferous stand against companies that outsource jobs overseas was mentioned in chapter 7, serves as an example of this entanglement. As a commentator, Dobbs finds deep fault with companies that abandon American workers, but as an investment adviser he recommends the shares of companies that have eliminated American jobs while taking big stakes in China and India.

*What American manufacturers call "dumping" in common parlance rarely matches economists' definition of the practice, which is the selling of goods below what it costs producers to make them, though for various reasons already noted, Chinese producers can often make goods for below even the raw-materials costs of manufacturers elsewhere.

This dilemma is played out throughout the economy, where nearly everyone has varied mterests that incline against one another. Even union workers who lose their jobs often have a stake in companies whose success is increasingly determined by their ability to make it in China. The China bets are made through investments held by pensions and retirement accounts. Many state governments in the United States have considered laws that would ban sending state contracts to overseas companies, and yet the states' employees, as beneficiaries of giant pension plans, are stakeholders in the largest investment pools in the world. These pools are obliged to maximize returns for their participants and, within acceptable levels of risk, give them the best future possible. They typically subscribe to the dominant theories of portfolio management that dictate that large investors should diversify their investments globally, and they would be foolhardy not to invest in China, which is often described in financial literature as a "once-in-a-lifetime growth opportunity." Thus, America's largest pension funds invest in Wal-Mart, Motorola, GE, Philips, and the thousands of other companies investing billions in China. What's more, these giant institutional investors are now scouring China for Chinese companies to invest in direcdy. The pension plans of universities, hospitals, and in some cases, entire countries also chase the same investments.

On the Money

Investors trying to avoid an economic stake in China will find it no easier than avoiding contact with the American economy, Japan's, or OPEC's. It cannot be done.

The reason, of course, is that China's currency is still, in practice, tied to the U.S. dollar, even while China claims to have moved to an international basket of currencies against which the Chinese central bank values the yuan. China's approach through 2005 was to add currencies to its basket, but to give the dollar nearly all the weight. The Chinese claimed they would eventually let their currency move closer to a freemarket price, but the government also seemed resolved to go slow.

Making the change to a freely traded currency and a stronger yuan would upset many within China. Among the disgruntled would be

China's farmers who, while largely poor, are still relatively high-cost producers of crops and ill-equipped for competing with the world's more efficient growers. If China's currency rises, the prices of foreign crops will likely drop below the prices at which Chinese farmers could sell their own. (Making China's farmers poorer is the opposite of the goal that the current government has set at the top of its agenda.)

Pegging a currency to the dollar is an old-fashioned but effective way to manage a currency. Before Richard Nixon freed the dollar in the early 1970s, the world's major currencies all had fixed rates of exchange against each other. At the center of the system were gold and the U.S. dollar. Countries could take the dollars they had acquired in trade and present them to the United States in exchange for gold, which was sold at a fixed rate. It was then illegal for Americans to own gold bullion in quantity, and the large stores of American gold were maintained solely by the U.S. government, which bought and sold it at an official rate set by the old international currency system.

Today, when the dollar rises or falls against other world currencies, China's yuan moves in tandem with it. China is the only large trading nation that pegs its currency to the dollar. It does so by mandating that whenever the yuan is converted to foreign currency, the transaction must be made at the official rate and through a state-controlled bank.

Other countries, especially other countries in Asia such as South Korea and Japan, which similarly rely largely on exports for their economic growth, also intervene aggressively in the world's currency markets. They act when their own currencies appreciate enough against the dollar so as to damage their ability to export. They too influence the currency markets using the power of their enormous reserves of foreign currency, wading in to buy and sell currencies in hope of bullying and cajoling the world's currency traders. But they can only bully and cajole the rates, not control them.

Why is China the only big player that maintains a defacto fixed exchange rate.? Hufbauer explains that the Chinese regard foreign exchange, especially dollars, as "supervaluable." Dollars in China, he explains, fill the role formerly played by gold in the United States and other countries once on a gold standard. The Chinese central bank is keeper of nearly all the dollars in the country. Dollars accumulate in the government's account as Chinese businesses that have earned money

from foreign sales exchange their dollars for yuan, and when foreign investors bring money into the country to buy businesses or property. At the end of November 2005, China's total foreign exchange reserves topped $794 billion, and were on track to exceed $1 trillion, a staggering amount. In size, that puts China's cumulative dollar account at roughly equal to a third of its gross domestic product. (Seen another way, it exceeds the value of everything that was bought and sold in 2005 in Brazil, the world's fifteenth-largest economy. In theory, China could show up one

day and use its cash to buy up everything Brazilians purchase in a year.)
To help keep control of its currency, Hufbauer says, and to thwart the possible emergence of a large black market, China offers its businesses and citizens an incentive to turn in their dollars to government bankers: the government overpays for dollars, giving back more Chinese currency for greenbacks than a free-market buyer might if the yuan were not controlled.
For a long time, few companies and countries complained about China's policies. At first its economy was not prosperous enough or big enough to warrant concern. And when an Asian financial crisis struck in the late 1990s and the currencies of Korea, Indonesia, and Thailand collapsed, China, which could have devalued its currency, stuck by its dollar peg and was lauded for bringing stability to a most volatile situation.
While it took several years for the troubled economies to begin a rebound, China's kept chugging right along, the pegged yuan making its exports irresistible bargains to the world outside and attracting the foreign investment that is pushing the country.
But now, in the eyes of most of the rest of the world, China fixes its exchange rate too far below what it would be if the yuan were allowed to be traded freely on world currency markets. Among the most forceful critics of China's currency policies are American domestic manufacturers such as steel mills, casters, plastics molders, and machine-tool makers. Through their trade associations, they argue that China artificially depresses the value of its currency against the dollar by as much as 40 percent, a figure that is decidedly on the high side of estimates.*
•Estimating where the value of China's currency would sit if the yuan were freely traded is as much art as science. Economists at the Institute for International Economics estimate the yuan is undervalued by between 15 and 25 percent against the dollar.

But American manufacturers who do move production to China often realize savings that would seem to support the claim. Of course, the currency rate affects more than the items China makes; it affects the means of production too. (If the currency is so lopsided, factories that cost a million dollars to set up in China ought to cost $1.4 million elsewhere.)
Held up only by the Chinese government's currency manipulation, China's global bargain bin, claim American manufacturers, is artificial and thus unfair.
American lawmakers, picking up the complaint, cite the charter of the International Monetary Fund to claim that China's currency controls and manipulation are illegal. The charges are mosdy a bluff, and few actually expect that an international court would ever adjudicate issues of China's currency policies. Whether China acts illegally or not is subject to how one reads the minutiae of IMF rules.
In practice, notes Jeffrey A. Frankel, an economist who served as a member of the Council of Economic Advisers under Bill Clinton and is now at Harvard's Kennedy School of Government, the legality of China's currency policies matters litde since there is virtually nothing one government, even that of the United States, can do to change the way another big country decides to run its currency. Frankel also points out that "when U.S. lawmakers accuse China or other countries of illegally manipulating their currencies, they often allege a violation of vaguely worded U.S. laws, rather than any multilateral agreement."
When China was invited for an informal sit-down with the representatives of the G-7 countries in October 2004, the price for its meal

ticket was to hear out the urgings of foreign finance officials fed up with
China's currency peg. At the G-7, China, as is its habit, agreed to
change eventually, but made no promises as to how or when.* Instead,
•Letting the world know when a country plans to make a major move on its currency
is a recipe for disaster. It is hard to know what the G-7 officials really expect when they
make demands on China to set dates and prices for its currency, since anything the Chinese
announced in advance of real measures would cause the rest of the world to adjust as if the
change had happened at once. Much of the investment made in China in 2003 and 2004 had
a speculative component, anticipating a change upward in the value of the yuan against the
dollar. Foreign investors rushed to buy property and to set up factories while Chinese prices
were, in effect, suppressed by the currency peg, hoping for a quick bump up after readjustment,
when their Chinese investments would be worth more in dollars.

the Chinese made clear they would be resolute in promoting the course
they regarded as in their own interest, and everyone else's. "What we are
trying to do is create the conditions for a market-based exchange rate,"
Li Ruogu, deputy governor of China's central bank told a gathering of
Washington bankers at the time of the G-7 meeting. " I f you force
China to change, it will hurt the U.S. You destroy a goose that will give
you a golden egg.'"
Currency regimes and markets are fleeting, and news about them
changes quickly. Yet some features of China's long-term currency strategy
will remain important to the well-being of the rest of the world no
matter what comes in the short term of prodding the Chinese government.
These longer-lasting verities are tied to bedrock goals the country
is unlikely to repudiate anytime soon: China must develop to lift its
people out of poverty and that depends on a currency that offers the
country's whole economy at bargain prices. Moreover, China can be
counted on not to act too radically or too swiftly. Chinese leaders know
that doing so would threaten not only China's economic growth, but
would rattle the economies of the rest of the world as well.
Dollar Daze
China, however, is not the only country that depends on a low yuan. In
an ironic twist of geopolitical and economic fortune, the United States
has developed a peculiar addiction to China's currency regime. That, in
turn, has made much of the world dependent on the pegged yuan as
well. This knotty codependence grows out of the size and manner of
China's efforts to keep its currency where it wants it.
In the international financial markets, nations' currencies, much
like any other commodity, are subject to ups and downs based on the
underlying fundamentals of the economies they represent, and to booms
and busts resulting from the speculative emotions of the world's money
traders. Usually, when demand for a country's products rise worldwide,
so does the value of its currency. A nation's currency, like other commodities,
comes in limited supply, and when the world's buyers want
some of it—to buy products the country sells—they must bid against
other countries to buy it. When demand is keen, the purchasers must

trade more of their currency for less of the one they want. If, for example,
the world suddenly craved only Norwegian sweaters, it would
rush the currency market to buy Norwegian kroner.
That, anyway, is the way things are supposed to go. From the American

viewpoint, it might seem that world demand for Chinese goods far outstrips Chinese demand for the world's products. As mentioned before, this is not the case. China's exports more or less equal the value of its imports. In fact, 2004 imports into China actually were worth more than the country's exports. As a matter of demand, then, China's currency would seem to face little upward pressure, except that private citizens have been bringing foreign money into China to acquire local assets, a trend reflected in China's enormous reserves of American dollars.

If China simply spent its dollars, it could flood the world market with American currency and quickly drive the dollar down. But China, no fool, is not interested in pushing the dollar down. So instead of selling its dollars, it lends them to the United States by purchasing U.S. bonds. The logic here is complex; because China buys so much of the U.S. bond market, China actually pushes up the price not only of U.S. currency, but also of American debt overall. And because any change in the yield on a debt instrument usually moves in the opposite direction of any change to its value, China's heavy buying of U.S. Treasury bills and other forms of public and private debt serves to push down U.S. interest rates.

For example, China almost certainly has a large stake in the market for bonds issued by Fannie Mae and Freddie Mac, the companies that buy home mortgages from banks and thrift institutions and resell them as bundled securities. This means that billions of dollars' worth of investments belonging to the Chinese are plowed, indirectly, into the American real estate market, and that an ever increasing share of Americans' mortgage payments pour into the coffers of the government of China.

China keeps tight wraps on the value, composition, and trading of its portfolio, but Wall Street commonly assumes that the country also owns a large amount of high-grade U.S. corporate bonds, intertwining its national fortunes all the more with America's blue chips—many of them the same corporations reaping fortunes in China itself Thus does China indirectly profit from American corporations profiting in China.

As long as China is an aggressive lender, Americans—whether borrowing for their own private purchases or acting in the roles of taxpay-

ers—can borrow money at low rates. Much of the recent boom in real estate prices in America, especially in the East and West Coast markets, is attributable to these low interest rates. And low American interest rates help keep interest rates low worldwide, a boon for borrowers everywhere. That includes China. Low interest rates in the United States inform how Chinese banks lend, and their resulting low domestic rates have propelled China's dangerously fast and loose industrial development—leading to overcapacity in nearly everything its industries manufacture and to a highly speculative real estate market.

Thus do the effects of China's currency peg ripple around the world and back again. Because of the peg, America does not experience price changes forced by a changing yuan, but other nations do. As the euro climbs against the dollar, for example, Chinese goods become cheaper for Europeans to buy, and investment in China from Europe all the more affordable. As high Chinese demand pushes up the price of raw materials, Americans buying these raw materials feel the pain just as the Chinese do, but if the euro drops against the dollar-yuan combination, Europeans are more pinched.

China's currency peg touches everything.

Golden Eggs in a Cuckoo Nest

The talk about golden eggs from China's bankers makes a strong point. Americans and Chinese have become reliant on each other's most controversial habits. The Chinese need a low-priced currency to keep their export machine going and create jobs. But maintaining the yuan's low price also means that Chinese consumers are stuck with a currency that would otherwise buy more for them on the world market. China's diligent savers suffer too since their bank deposits are tied up in accounts that earn low government-mandated rates of return, as the government, in effect, siphons off money from savers to maintain its currency peg. Relatedly, China's vast export earnings earn less than they ought to when they are invested in U.S. debt securities that offer modest yields, when investments in the Chinese economy can return ten times as much (albeit on riskier terms).' Seen from that view, the people of

China, who earn on average just one-fortieth what Americans do, are indirectly subsidizing the insatiable shopping of Americans, who acquire ever more goods at the same time that Chinese consumers are hampered from buying goods from abroad.

The obverse of this peculiar relationship is that China lends America all the money it needs to spend itself silly. Not that China plays this role alone. Japan is also a huge creditor to the United States. Much of the rest of the world plays a role too. Foreigners now own 40 percent of all U.S. treasury securities, while total U.S. debt to foreigners tops $2.2 trillion. China's share, however, is growing most impressively. In 2004, its $480 billion stake in the U.S. securities markets, a little less than a fourth of the total, was double what it had been only two years before.'

These vast sums help fill deep holes. The U.S. financial landscape is littered with record debts of all sorts, much of it financed by lending from China and Japan. America's government debt grew by $1.7 billion a day in 2004, reaching $7.5 trillion. Moreover, in 2004, Americans collectively owed $9.5 trillion in mortgages, automobile loans, credit cards, and other personal debts, a staggering $84,454 per household.'* Americans' household debt, in fact, has never been higher. Instead of taking advantage of the lower interest rates to refinance and reduce their debt burdens, many Americans have regarded cheap money as an opportunity to go out and spend more. That's just the way exporters like it. The U.S. government has seen fit to do the same. Rather than use the period of low interest rates to pay off national debt and keep annual budgets in balance, as the Clinton administration did, the Bush administration set record budgets, slashed taxes, and ran up record budget deficits so big that paying off the national debt may never be possible. The people of China are financing that profligacy.

The spendthrift habits of the United States are reflected in its growing trade deficit too. U.S. consumers buy one-fifth of the world's GDP, an increasing amount of which is purchased on credit. (In 2003, Asia financed over half of America's trade deficit and government budget deficit.') Jeffrey Frankel notes that the U.S. trade deficit roughly corre-

*On top of that, when future obligations that the U.S. government has already committed to pay out get added in, each household's share of government debt is a staggering $473,456.

spends numerically to the total of the surpluses of all the world's trading countries that are in surplus.
Other countries get drawn into the relationship, often powerless to resist. China and other surplus-generating countries do eventually reach the limit on the amount of U.S. securities they can buy. The European Union is one place they turn to buy more. Because the euro does not trade at a fixed rate against the dollar, and thus not against the yuan, the purchase of euro securides pushes the euro up against the currencies of both the U.S. and China. For European consumers, that makes Chinese goods less expensive. And for Europe's businesses, it makes competition with Chinese businesses intense. In the near term, Germany may have the most to fear. China, Hufbauer says, is coming on strong against three core German industries—chemicals, machine tools, and automobiles.
Having Your Currency and Eating It Too
Nimble companies can play the circle of American debt, Chinese lending, and low-priced yuan from all sides. Patrick Lo is the CEO and cofounder of Netgear, a maker of networking equipment headquartered in Silicon Valley that in 2004 had sales of $383 million. Lo has tailored his company's manufacturing and marketing to take maximum advantage of the countries' countervailing roles within the codependency.
"The mission of Netgear is to connect everyone on earth to a broadband connection," Lo says. "And from day one we knew we needed to be a global business. You cannot have a product that is designed in the United States, manufactured in the U.S., and marketed out of the U.S. and expect it to be a global product. It is impossible." Instead, Netgear takes advantage of the unique advantages offered by different corners of the technology manufacturing universe.
How." The answer begins with a description of Netgear's most visible products: elegant, small silver boxes, most the size of a slim paperback book, that sit next to millions of personal computers around the world. They come in all the varieties—adapters, gateways, routers, access points—needed to set up wired and wireless networks in homes and small offices. Netgear has carved a place in the crowded networking equipment

market by offering products that are nice to look at and easy to set up, an important factor, since change in the networking industry moves at warp speed. New standards, products, previously unknown competitors, and waves of new, mostly Chinese-made, equipment find their way into stores, catalogs, and eBay all the time. Netgear itself introduces, on average, one new product every week, either in response to a competitor's newest model or as the innovation that will be copied within weeks.
In his constant battle to move new products into the market at aggressive prices, Lo has organized Netgear to leverage the peculiar financial codependency of the United States and China.
"Americans are more willing to spend than anyone else in the world right now," says Lo, whose products get their design and marketing in California, where the company can stay close to American tastes and needs. Netgear, founded in 1996, began life by working with a Taiwanese manufacturer that made Netgear's boxes and helped design the technology inside them.
Yet manufacturing in Taiwan ultimately became too expensive, so Netgear asked its Taiwanese manufacturer to change its function.

Instead of making the products, it would engineer them and manage the manufacturing at a third site run by yet another company in China's booming technology corridor near Suzhou in Jiangsu Province outside Shanghai. A new factory there was designed from scratch to allow for highly flexible manufacturing that could change with every newly designed tech product that companies such as Netgear want to bring to market. China is full of such late-generation manufacturing facilities, which exist to be hired out by others who need floor space, advanced equipment, and a workforce on call. Netgear's factory of choice was outfitted with the latest robotic equipment for assembling circuit boards and laid out so workers coping with manual assemblies could integrate seamlessly and flexibly in the production lines. Netgear would help manage the quality control and purchasing out of an office in Hong Kong.
The company's current strategy involves a state-of-the-art distribution of talents and functions to meet the realities of the global marketplace. The U.S. operations figure out what the world's hungriest consumers will buy. Yet it keeps its company's own employee count to the bare minimum. Only 210 people work for Netgear worldwide, meaning it has $1.82 million in sales per employee, a high ratio for the

electronics industry.* Their Taiwan affiliate is tapped for the tech prowess it acquired when that island was a low-cost hub, and China, now the lowest-cost place to make things, is where final assembly is done.
"China gives us a way to move to the next level," Lo says, referring both to the world economy and the fortunes of his company. "Because of low-cost manufacturing, a lot of leading technology can now come out of China." In Netgear's case, it must come out of China. With such keen competition the company needs the boost offered by China's ongoing efforts to keep its currency depressed. "China helps us because they need to keep a lot of people employed," says Lo.
The incentives offered by China's currency policies to agile companies like Netgear do not sit well in those businesses more firmly bound to their U.S. manufacturing base. The IPC,"!^ a U.S. trade association representing twenty-two hundred firms that design, manufacture, and assemble electronic components, are among the most enraged among the political coalition pressing American lawmakers to break China's policies.
"China's manipulation of the yuan has had a devastating effect on U.S. manufacturers," said Dan Feinberg, chairman of the IPC Government Relations Steering Committee, when the group gathered en masse on Capitol Hill in April 2004 to lobby for change. The group called China's currency actions "direct violations of their commitments under the World Trade Organization and the International Monetary Fund."
From the standpoint of consumers, however, the price cuts China facilitates make a world of difference. In Netgear's experience, products that move to the high-production, low-cost factory fines in China explode in the marketplace. Over the last three years, the basic equipment for home networks has dropped from $500 a unit to below $100, while moving data around the house much faster in the bargain. The term networli ejfect describes how technologies gain critical masses of users and applications the more that they connect users with each other.
It is not surprising that computer networking equipment has an enor-
*In 2001, Sony had 180,000 employees worldwide, with sales of J58 billion, or around $322,000 per employee. In 2003, Intel had 78,000 employees worldwide with $30 billion in

sales, or around $385,000 per employee.

fDespite its initials, the IPC's longer name is the Association Connecting Electronics Industries.

mous network effect when its price drops. In 2002,9.2 million American homes had networked computers; by 2007, that number will top 28 million as low-price equipment from Netgear and others moves data files, music, and movies around the home, between computers and digital home entertainment centers.

Will the Yuan Ever Rise?

Is this cycle of codependency sustainable.? Almost certainly not. An eventual reversal is necessary. The United States cannot take on ever-bigger debt and amass huge trade deficits indefinitely. Frankel, who notes that Americans now pay out greater dividends to foreigners than they take in, now live in the world as renters rather than as landlords. Renter nations live precariously.

"When Asians pull out of our markets, Americans may discover abruptly that interest rates climb and the value of the assets—stocks, homes, businesses, almost everything—declines," Frankel says. "When other countries have gone through similar crises, people panicked. Whether such a crisis might lead the U.S. to also lose much of its political power, it is hard to say. It is certainly possible."

In the worst scenario, the United States' willingness to fritter away its national wealth to finance private consumption and unproductive government spending would extract a permanent price on the economy, sending the United States in a downward spiral that would be hard to escape. Indebtedness would lead to the kind of crises that have saddled such big spenders as Argentina and Brazil and doom the United States to a future without the fiscal tools to lift the economy from the doldrums.

"We would not be able to get out of recessions by cutting interest rates," says Frankel, describing the impotence of an America too deeply in debt. "There would be no way to provide the kinds of fiscal boosts, such as tax cuts, that inject spending money into the economy. Our problems would no longer be as short-lived as we're used to, but last for generations."

Thus do the routes to prosperity chosen by China and the United States put both countries at grave risk. Without the United States to buy Chinese goods, China cannot sustain its growth; without China to lend

money to the United States, Americans cannot spend. Without the twin engines of the United States and China stoking the fortunes of other nations, the rest of the world might also sputter.

But the worst scenario need not be inevitable. China's currency adjustment could come gradually. A cheaper dollar may teach Americans to save again and forge disciplined government budgets.

C H A P T E R E L E V E N

THE CHINESE CENTURY

CAN AMERICANS AND THE REST OF THE WORLD SEE WHAT IS HAPpening in China? On the face of things, it seems so. After all, the global media now covers developments in China with both an earnest desire to document its rise and a bemused awareness at its unabashed consumerism.

The daily press reports on the stream of Chinese fads and marvels. The financial papers follow the world's money to China's door, and one after another, trade magazines such as Automotive News and Modern Plastics have begun to look like China newsletters. At times it appears that everything that can happen is happening in China. In the space of one month in the fall of 2004, China held its first European-style Formula 1 car race on a new S320-million track, hosted an NBA exhibition game with its new global basketball star Yao Ming, and staged its first Spanish bullfight in a stadium converted into a fullfledged bullring, all in Shanghai, all to enthusiastic crowds. So too comes the news that Hooters, the restaurant-and-bar chain, will offer its curvy American fantasy to Chinese diners in eight locales; that Starbucks will add hundreds of new outlets in the land of tea; and that an adult-products expo attracted four thousand manufacturers of sex aids and huge crowds. There are the daily announcements of new ways that the world's big and small investors can take a piece of the China action with a simple phone call to a stockbroker. There is the story that Bill Clinton's 2004 memoir,* like Hillary's in 2003, was pirated and liberally

•Writer Alex Beels took the trouble to translate pirated Chinese editions of Bill Clinton's My Life back into English for Harper's Magazine. One Chinese version of the text turned Clinton into an avid Sinophile, putting words in the former president's mouth describing how Chinese technology left America's "in the dust." In another version Clinton says his hometown of Hope, Arkansas, has "very good feng shui."

rewritten with Chinese characteristics; that China consumes half of the world's pork; that FedEx will now service many Chinese cities directly; and so on.

The news bites, however, reflect an illusory China as much as a real one. To see how China is really changing, and to react wisely to how China is changing the world, one must see beyond the amazing stories. This sounds simple, but strong forces fight against it. On the one hand, the news stories that come out of China are far from complete. News in times of momentous change is bound to miss much of the big picture. In China's case, where the news is tightly controlled, such gaps are inevitable. On the other hand, the rest of the world has worthy distractions; war, for one; domestic politics too. One can complain, in vain, about unworthy distractions, as well. The very demographic group—the eighteen-to-thirty-four-year-old population—that ought to be most focused on the coming Chinese century is also the one most brilliantly diverted by entertamment and news-lite that detail the trials of celebrities and reality-TV neurotics. What a shock it would be if a roommate on The Real World were wrestUng with his or her future by studying Chinese, or perhaps luring the roomie next door into some lucrative industrial piracy. (How prosaic it would be to find their Chinese counterparts studying English or poring over American drug patents.) More troubling still is how the public, in developed countries especially, willfully avoids the difficult questions about preparing for and managing the inevitable, earthshaking changes stirred by China.

Where Have All the Factories Cone?

There is no bigger question than what will happen to the future of work. I f it seems lately that the local news regularly offers obituaries for nearby factories and the middle-class jobs they provided, and gives the impression of an industrial exodus, that sense may better reflect the economic trends than any of the regularly announced government statistics that track job losses.

Despite widespread concern about the transfer of jobs to low-wage countries, the U.S. government still keeps no official statistics tracking jobs that move, other than those voluntarily reported by companies mak-

ing a change. (Most companies, of course, have disincentives to report their decisions, given the caustic response to such shifts.) Better numbers would be useful to quantify the trend or to debunk it. From what is known, and as has been argued here already, productivity improvement is responsible for the vast number of manufacturing jobs lost in the United States and around the world, a trend closely tied to competition from low-wage manufacturing in China.

Nevertheless, the daily news offers regular evidence that many jobs are in fact being exported to other assembly lines in faraway places. Actually adding up these reports, one by one, news outlet by news oudei, confirms that job shifts are happening frequently and all over. The monumental task of counting these stories has been conducted as part of a periodic attempt by the U.S.-China Economic and Security Review Commission to address the statistical gap.' One recent count, covering the brief period from January 2004 to March 2004, is far from comprehensive but telling.*

The study looked not only at the United States but to Europe, Latin America, and other Asian countries, as well. In the three months covered, 58 U.S. companies, 55 European companies, and 33 companies from other Asian countries all announced plans to move jobs to China. The numbers were up dramatically from just three years before. Over a comparable period in 2001, only 25 U.S. companies announced shifts to China.^ Another big change: many of the companies moving jobs from the United States to China in 2004 simultaneously moved jobs to other low-wage countries.

By extrapolating the number of lost jobs from the first three months to the entire year, the study concludes that U.S. work sites moved four hundred thousand jobs to other countries over the course of the year, twice the number that had moved three years before. Yet the numbers

*The study, completed in October 2004, was devised and conducted by Dr. Kate Bronfcnbrenner at Cornell University and Dr. Stephanie Luce from the University of Massachusetts at Amherst. The two scholars tracked media reports that appeared online and in corporate research during the three months under investigation.

tDuring the first three months of2004, there were also announcements of 69 U.S. shifts to Mexico, 31 to India, 39 to other Asian countries, 35 to Latin American and Caribbean countries, and 23 to other countries including Eastern and Western Europe and Canada. In all there were 255 shifts out of the United States.

collected by U.S. government agencies, which are at least as thorough and obsessive in gathering economic data as any other government in the world, vastly underestimated the jobs being moved overseas. The U.S. Bureau of Labor Statistics, for example, captured less than one-fifth of the }obs that left.

Of the jobs moving in 2004, one-quarter went to China. Yet the role of China in the migration is far disproportional to its numbers. The pressure that China puts on other low-wage countries to drop their labor rates makes these countries then become more attractive to American enterprises looking for cut-rate homes. Such is the case in the Mexican maquiladoras where workers are forced to accept wage concessions under threat of losing their jobs to lower-wage workers in China. Auto-parts maker Delphi is one of Mexico's largest private-sector employers with 70,000 workers on its rolls. In 2003, the company had 5,000 workers in China, a number Delphi made clear would rise. The company also made clear that it expected Mexico to work on its incentives, including tax breaks, if it expected to keep Delphi fully committed to Mexico.^

China's role in the shift is also evident in the mix of jobs that are now exported. In 2001, American jobs that went to China were concentrated in industries such as electronics and toys, for which low-wage countries are always attractive. By 2004, the shifts were well-divided among a much larger cross-section of industries that more closely mirrors the full American industrial landscape. The study found that the companies most actively moving jobs to China in 2004 were large, publicly held, highly profitable, and well-established. Nearly three out of four of the workplaces that shipped jobs out were branches of U.S. multinationals. Perhaps predictably, jobs performed by members of labor unions are among the most vulnerable to the lure of China. Not only are unionized industries at great risk of having their American workplace liquidated by bosses who find very cheap, nonunionized shops in China, but the shift of unionized shops in one industry can cause a bandwagon effect among nonunionized companies in the same industry that also move jobs abroad.

The effect on the American economy is far-reaching. Eviscerating organized labor also weakens the one constituency that can best organize to protect the interests of workers in the halls of government and in

the boardroom. Without that voice, the global ambitions of big companies can more easily cut their current employees out. When William Burga, president of the Ohio AFL-CIO, testified in September 2004 at congressional hearings regarding China's impact on manufacturing, he noted that had he come before the panel two years earlier, he would have been speaking for one hundred thousand more union members, but the subsequent shrinkage of manufacturing had cut the union rolls in the state from 850,000 members to 750,000.'

Even more disquieting than the rash of news about jobs already lost is the prospect of what the future may bring to Americans and other countries. What are the chances that a country's workforce will assert itself when the corporate drift to China and other low-wage destinations undercuts labor's power to press itself onto the national agenda.? Or when American, European, and Japanese factories are driven by software ghosts running machines with skills no human can match.? As factories grow ever more productive while shaving their payrolls to the bone, whither the middle class that since the end of World War II has pulled up the world's advanced economies." Is the developed world destined for a falling tide that will strand all boats.?

"The only way to maintain our security and prosperity is through relendess innovation," says Deborah Wince-Smith, president of the Council on Competitiveness, a coalition of American corporations, labor groups, and educational institutions. Wince-Smith argues that the economy's capacity for innovation is the key to raising productivity, which itself is the most important component of competitiveness and economic growth.

Michael Cox of the Dallas Federal Reserve argues that the chief problem for the United States is that it does not have enough global entrepreneurs. He notes that the country can stand to export far more manufacturing and service jobs than it does already, provided that Americans have the skills and creativity to offer the world new products and services. "There's no reason we can't have one of every four Americans working at home leveraging the work of ninety-five people elsewhere in the world," he says. " I f we did that, we would completely employ our whole labor force."

There is, however, an important catch. Innovation happens best not when smart people work in small groups or geographic isolation but

when they have the benefit of an environment that gives them deep knowledge of their industry. Chip designers who are removed from assembly lines do not get the feedback from the factory pros that heip them optimize their designs. Software firms that work far from the world's tech corridors do not benefit from the crosscurrent of workers who come and go among firms, or from the ideas shared with industry pals over lunch.

For America to stay the most innovative economy, it must also be the most complete economy.

One of China's most potent economic weapons is its ability to attract entire industry clusters, acquiring the critical masses of companies that catalyze the creative ferment that leads to rapid innovation. Global telecommunications and regular air links may go a long way to closing the distances for Cox's American army of global entrepreneurs, but Americans stringing together opportunities in distant lands will have to spend a lot of time re-creating the network of relationships that has been lost as America's industrial clusters depopulate, devolve, or both.

Cheap Talk

To go global, Americans will also need to take some basic steps first. A recent count of Chinese-language students in American high schools came up with just fifty thousand, while in China there are nearly as many people learning English as a second language as there are people who speak English as a first language in the United States, Canada, and Great Britain combined. English-language instruction still has a long way to go in China, however. Native speakers would find the spoken English of many Chinese English teachers hard to decipher. But the country has made a start, and for now, reading English, not speaking it, is China's strength. That may change, as it did in Europe, as more and more English-language entertainment finds its way into people's homes and as multinational businesses, where English classes are common, offer incentives to workers to improve their skills.

That Americans have few non-Chinese people learning Chinese is a measure perhaps of how slowly schools adapt to important change. Certainly, the United States would have litde trouble attracting native-

speaking teachers of Chinese if the riational will to do so were there. One might argue that it is better to devote students to learning other subjects while kids in China put in the time to learn English, which, after all, is spoken in workplaces everywhere. China's willingness to push English is a boon to the rest of the world that wants to set up shop there; English competence is akin to good infrastructure. And for China itself, English speakers provide the key to scientific and technical advancement. That works two ways. Foreign firms with Chinese R&D labs can take better advantage of their talents if they require no translation. One must also ask who will be the better global managers, native speakers of English working in China who rely on their bilingual local managers to interpret and order the workplace or Chinese managers who can deal with their workers directly in their first language and communicate with their international counterparts in English.? Of course, the presence of tens or hundreds of millions of English speakers in China also expands the kinds of work that Chinese companies can take on. India has grown into a software and service center for global companies on the strength of its English-language-speaking workers. China is poised for a similar move and Indian companies already fear the competition.

Can We Really Stay in the Game?

Competitiveness requires a highly educated workforce. On that score, the news in America is not promising, especially when one looks at grade schools and high schools where the vast majority of American students are not getting the skills they will need to be sharp enough to flourish in a future informed by China.

In 2004, ACT, the independent organization that administers academic assessment tests to millions of American schoolchildren every year, took stock of American schools overall. Of the 1.2 million graduating high school students in 2004 who took ACT's college admission test, only one in five had scores showing they were ready for college courses in English, math, and science. Only a quarter had scores that predicted they would get a C or higher in their first college biology course. The numbers were slightly better in math, but still dismal, showing that only two

in five American high school graduates could earn at least a C in a firstyear college algebra course/

The plain fact is that a lot of American public schools are pretty lousy, despite decades of earnest effort to improve them. Americans never tire of schemes to correct their schools, focusing in one place on an open curriculum, in another on test scores, and in still another on self-esteem.

These may all be worthy ideas, but are rarely effective enough by themselves. Local, ideological, cultural-religious, and special interest politics also cloud reform. The freedom of Americans to overspend on unproductive consumption at the expense of education leaves schools underfunded. (In many places around the country, property owners militantly oppose efforts to raise property taxes to improve the local schools. California's Bay Area, land of the tech millionaires and knowledge workers, cannot afford routine maintenance for its schools and has had to ask teachers to take pay cuts.) To make matters worse, the higher-wage attractions of the private workforce for people with even modest science and math skills, or those possessing marketable creativity who might otherwise be teachers, keep essential talent out of the classroom. Arherican high school teachers of science and math too rarely have university degrees in science or math.

One can only despair about the educadon system until there is a fundamental shift in the public will so that schools become the top national priority of a people firm in the knowledge that every lesson not learned will equal a job not earned.

I f American primary and secondary schools fall short, is not American higher education still far superior to that of any other country?

Yes—for now. But the comparative strengths of American universities to turn out the world's highest skilled workers are fading. The challenge to America's engineering programs to produce American engineers has already been covered. Equally threatening, however, is the decreasing ability of American universities to attract the best and the brightest foreign students. Part of the problem may be short-lived, as foreign students who were denied visas because of security concerns following 9/11 begin to gain entry once the United States has a faster screening system in place. In the short time since 9/11, however, other countries have learned how to attract the world's best students, and the United States is just one of several destinations the bright can choose.

Ignorance Isn't Bliss

As old-line manufacturing jobs disappear, it's axiomatic that citizens of advanced countries prepare for the knowledge economy, a global workplace that favors intellect over brawn. Students seeking careers and workers looking for new ones are often directed to pursue a job in the brainy post-industrial workplace. Yet, often, the job of the knowledge worker is misunderstood. Silicon Valley computer programmers were once seen as the epitome of knowledge workers, but many still found their jobs easily transferred to low-wage programmers overseas. Most vulnerable were those once high-paid coders who did the grunt programming on pieces of other people's projects.

Knowledge workers, the thinking now goes, must possess more than rule-based skills used to perform complex but discrete tasks that are easily transferred to someone else who has mastered the same rules. So despite years of expensive schooling in a field that once promised a secure lifetime of employment, many programmers now find that they are defenseless against outsourcing. In contrast, their colleagues who conjure up new applications for software, new uses for computer chips, and new ways to manufacture them have seen their incomes go up.

Another misunderstanding of the knowledge economy is that it applies mainly to high-tech industries and communications. Countries can only compete against China's low wages and high skills if they have a population that is ready to make nearly any job a high-tech job. "There are no low-tech industries," says Deborah Wince-Smith, "only low-tech firms."

Even a farmer is a knowledge worker in the modern American economy. Visit a corn and soybean farmer in Pekin, Illinois, and the intellectual component of his work is soon apparent. The day may begin with a visit to a computer, where he checks and analyzes the day's crop prices at the Chicago Board of Trade, uses the latest regression models to adjust his futures and options hedges in the commodities market, and then hits a key to send in his order over his online brokerage account. He may also check the satellite reading of that day's weather. In the field, he runs a marvelous farm machine, the John Deere 9650STS fast-loading combine, which is very possibly the most productive farm machine ever made and features an automatic steering system, a GPS sateUite navigation link to lead it around the field, and computer controls that monitor harvesting. Deere designed the machine to be so automated that even after a long day in the field, a farmer will feel litde fatigue. That can leave him fresh enough to shop for the hybrid seeds he will plant next season, choosing from among a wide variety of crops genetically engineered in the nation's advanced public and private agriscience labs.

Today, American bean and corn farmers can offer products on the Chinese market at lower cost than Chinese farmers, most of whom are among the lowest paid workers on the planet.

Similarly, if American farm-equipment makers find ways to automate fruit picking, then Washington apples and Florida oranges will give Chinese fruit growers a run for their money. {Though this will cause more joblessness among the Latino migrant workers who pick oranges and apples.) As American labs pioneer ways to embed pharmaceuticals in food and engineer disease-resistant crops and fruits and vegetables with novel and irresistible flavors and textures, the food-loving Chinese will long to import them.*

As American factories of all kinds morph into high-tech shops, the workers who are left to manage them must be skilled enough to operate and service complex machines, handle inventory and work-flow databases, and they must have the core knowledge necessary to adapt to new technology that enters their workplace. In the service sector, jobs that once required litde education at all will increasingly demand high skills, especially those jobs that can jusdfy better-than-minimum wage.

Remaking every laborer into an advanced knowledge worker is an impossible dream. Yet creating an American education system that produces the most knowledge workers possible is not a dream, but, again, a matter of national will.

Right now, no such national will exists.

Such a consensus will probably take a crisis to achieve. When threatened in the past, Americans supported large-scale educational change,

*Even farmers who reject engineered crops as "Frankenfood" can be sophisticated knowledge workers, using computer models to schedule plantings and crop rotation and thus increase the yields of organically grown crops and better preserve the health of the soil.

most notably when the Soviet Union woke up the United States with the launch of the Sputnik satellites in 1957.* Ironically, it will not be Communist militarists that most threaten the U.S. standard of living, but a Communist-capitalist rival that is a much more formidable economic competitor.

How close is the United States to a competitive crisis.? After all, China has yet to introduce the kind of world-changing technology or consumer products that are the hallmark of advanced economies. But it will. The genius that has so far poured into creating great factories will soon be evident in great products and great brands that will offer the world unsurpassed quality and refinement: Japan will have to share the shelves in high-end electronics and photo shops, France and Italy will vie with China in the luxury apparel and accessory market; and South Korea will have trouble staying ahead of Chinese shipbuilders.

Nations can find that their competitive edge against China can suddenly disappear with the movement of a single person. In May 2004, Steve Chen, one of the most admired designers of supercomputers in the United States, joined Galactic Computing Shenzhen Co., Ltd., a company backed by Hong Kong investors and several Chinese universities. The enterprise, set up to create world-class supercomputers in China, has already showcased a computer fast enough to place it among the top 250 fastest computers in the world. "In terms of momentum [in supercomputing, China is] the most rapidly ascending country in the world," David Keyes, a professor of applied mathematics at Columbia University, told the New Yor\ In an October 2004 story headlined "China to Lead Supercomputing Sector," the China Daily declared that the country may well be home to the world's fastest supercomputer in 2005, and that "the nation will hold all intellectual property rights to the bionic processor and its relevant applications." Chen, who immigrated to the United States from Taiwan in 1975, did graduate work at

*Back then the United States saw itself as technologically weak compared with the Soviets, and educators, scientists, and mathematicians rallied to address America's gaps. Local governments and federal lawmakers increased their support for science and math education, and established new programs and standards for schools. The Sputnik-inspired reforms were far from perfect and inspired a generation of critics, many of whom believed the educational methods of the day discouraged creativity. Nevertheless, the era's zeal and focus are models for the challenges that face the American workforce today.

the University of Illinois and later worked for supercomputing pioneer Cray Research. Chen told the Times he joined the Chinese company because venture capital for supercomputing had dried up in the United States.

But there are other ways that time is short. China could emerge overnight as the world's largest maker and consumer of movies, computer games, television programming, and music. All it would take are a dash of expressive freedom and the joining of Chinese talents with global media companies. Beginning in November 2004, the country allowed Chinese companies to enter into joint television-production ventures with foreign entertainment companies, such as Viacom, Sony, and News Corp., for the first time. Remember the country's rising facility in English. Millennia of Chinese storytelling and performing traditions will find their way into modern media as the fabulous creativity and obsessive dedication of China's performers will transform world entertainment.

Byte by byte, China will enter the world's homes, workplaces, and mindshare in ever-growing degrees. There will be nothing material, intellectual, or cultural beyond the reach of the world's most populous country. For America to stay productively employed, its skills, sophistication, and imaginative power must remain world-class, every day better than ever before. America itself must become a new place.

A Forced Smile

How can the United States adjust to a competitive challenger that has strengths unlike any other that America has ever faced.? Are the transfers of taleiit, technology, and capital part of an inevitable dynamic? Or does the United States, or any other country, have the power to shape a future in which everyone prospers?

Americans looking for answers and action must also find a way to move America's leadership to see China's rise as every bit as worthy of national attention as the rumblings in more obvious political hot spots. While all eyes turn to the so-called clash of civilizations between Islam and the West, in the long run China will have the most profound impact on the world. Instead, despite occasional misgivings offered in

factory towns and tariffs slapped on imports at the height of campaign season, American leaders tend to view China's rise as the fulfillment of a free marketer's dream, where global investors will shepherd the country into wealth, democracy, and peaceful interdependence with the rest of the free world.

It is a lovely theory, and it may ultimately be true. There is, however, no evidence upon which to base such a prediction. Which exacdy of the world's large, highly nationalistic, dictatorial. Communist-capitalist countries offer a historical analogue? Answer: There is no other such country. Alas, where China is concerned, optimism itself is not always cause for optimism.

Chinese officialdom works hard to reassure the world that the country is no threat. Perhaps the most impressive accomplishment of the Chinese Communist Party is that after years of fomenting despair and uncertainty, it has discovered how to instill China with optimism. In a land where the vast majority of people still live in a present of bleak shelter and almost no money, optimism is an essential resource, and it gushes where one would expect, in the government-controlled media, where editors and reporters must whisde happy tunes.

For example. Hong Kong's Sing Pao Daily News^ reported that before the big 16th Party's Congress in September 2004, the Ministry of Propaganda issued thirty internal instructions to China's media outlets reminding them to correctly guide the public and to beef up positive reporting with "happy stories about good people."* News organizations were instructed to not run stories about petitioners coming to Beijing to seek remedy for the loss of their homes. State-mandated optimism also pours forth in the country's provincial and municipal offices, where the

•Particularly galling to the Ministry of Propaganda were reports in China Youth Daily about a concert by female pop singer Song Zuying. T h e singer, the report said, was paid $50,000 to sing four songs in the poor city of Wanyuan in Sichuan Province, and local officials were directed to buy $165,000 in tickets. T h e article touched nerves because of the impression that Ms. Song is a special friend of Jiang Zemin, at the time, China's premier, and the implication that the concert was also a special favor to her. T h e Ministry's directive for positive coverage was, in part, a response to "factual errors" such as those in the story of the concert. T h e Chim Youth Daily, one of China's largest papers, is affiliated with the Communist Youth League, which at the time was widely regarded as an ally of H u Jintao, then in a leadership struggle with Jiang Zemin, but now China's undisputed head.

scale models of grand projects—many of them still in search of financing from private investors—sit proudly on officials' desks.

Not all the cheerleaders in China speak Mandarin. Many speak only English, German, or Finnish, and work at Western companies plying the Chinese market or at large consulting firms that see in China a place where they can lead their large corporate clients through complete makeovers. Back home, corporate officers whine about onerous government regulations, employment laws, legal liabilities, and the weight of their pension and health care obligations, complaining as if their own

governments were their worst adversaries. In China, meanwhile, executives and their corporate communications staffs turn into another breed. Anxious to please the Chinese government, they serve as informal agents for the Ministry of Propaganda, tying their corporate message points to China's official line.
One gauge of how influential the good news machinery is in China is the nearly automatic responses that Western residents in the country give to the questions that outsiders are disposed to ask. Inquire, for example, about the country's human rights record, which by any Western norm is abysmal. Mention any horror—the Tiananmen crackdown, the brutal repression of farmers' protest movements, the occupation and cultural domination of Tibet, China's more-thanfriendly relations with foreign regimes so bad {including Burma, North Korea, the Sudan, and Iran) that most other big countries shun them, or the ongoing, often violent subjugation of religionists, including followers of Falun Gong, Tibetan Buddhism, and Roman Catholicism. Offer concerns about how China censors the press, watches and blocks how its citizens use the Internet and telephone text messages.* State the plain fact that the Chinese do not allow big families. Ask about China's oneparty system, reminding the listener that the Communist Party is fixedly antidemocratic and self-perpetuating. This is just a short list of the most common grievances against China, but the issues have not changed much over time. Naturally, there is a Chinese side to each issue.
•Chinese users of the World Wide Web report that the words and phrases Chinese censors look for when screening Internet corrjmunications have included, along with obviously politically charged references, such words as freedom, hypermart, naive, paper, malting, peacehall, playboy, simple, bignews, tibettalkj and VOA (Voice of America). The government says it watches over electronic communications to "block false political rumors."

And, since papers are the organs of power, the Chinese government fills them with answers to Western doubts. Many of the government's reasons deserve some consideration. What's more, China's system does seem to be providing much of the country's population with a better life, a fact that is routinely cited to explain China's slow-going political reforms. China remains, however, a land of ironfisted poHtical repression and, on the local level especially, pervasive government gangsterism. To a visitor engaging expatriates on the big issues, however, it is striking how thoroughly the transplants parrot the views of China's state propaganda. They say that they feel safe in China, that the country needs stability not democracy. Chaos, goes the argument, is China's gravest enemy and rapid reform would risk it. The Chinese state takes the poor seriously, they say, and America has its own problems, such as a national willingness to go to war.
"It's amazing how it works on you," says a member of the Germanlanguage foreign press corps. "Even as a reporter I find myself getting sucked into the message. The thing is that as soon as I step out of the country, I can better see things for what they are. You have to give the Chinese credit. They are really good at the mindshare game."
This pressure to toe the party line has a strong effect on how the world deals with China's rise. Because American and other foreign executives are expected to toady to the official Chinese version of reality, important economic security and trade issues are never discussed as thoroughly as they ought to be in the world's other capitals. The very group of foreigners

that has the most at stake in China is expected by the Chinese government to always be on its best behavior. Companies with interests in China that raise the key issues of trade barriers, currency values, Chinese government attempts to rig business in favor of Chinese companies, or whether the Chinese are paying full fare for technology can expect certain grief from Chinese officials. Heaven forbid that American or European companies raise flags over China's environmental degradation, labor rights, or religious freedoms. American executives repeatedly describe, in confidence, sotto voce, the many governmental roadblocks they face in China, but then plead that their stories not be told because they are still in negotiation with the Chinese government and fear anything negative they say would torpedo their hopes of gaining whatever sliver of the Chinese market they hope to secure. When complaints must

be raised, they often come through the collective anonymity of foreign trade associations or informally through diplomatic channels.

Playing the Triangle Offense

If Americans are to fully appraise China's significance, they must also recognize how the fact of America makes China strong. The world leaders who now make frequent visits to Beijing accompanied by entourages of industrial ministers, trade secretaries, and business leaders certainly come to ink billion-dollar deals. But that is not all. They also come to talk power, and power not just for themselves but against the United States. For all of the world's serious grievances against China, it is the only country that can counterbalance the economic and political weight of the United States.

When, for example, French president Jacques Chirac made a return trip to China in October 2004 with four ministers and fifty-two French executives, their high-level meetings included, as expected, discussion of the sale of the cream of French industry: superfast trains, Airbus planes, nuclear power plants,* and military hardware. {In all, the French president netted some $4 billion in orders.)^ But the talks also included a chorus of signals that France regarded its relationship with China as a bulwark against world dominance by America. Chirac made clear that he would not publicly criticize China's human rights record. Chirac also made thinly veiled, but much appreciated, comments against Taiwan, which during Chirac's visit had approached the Communist government seeking to reduce the six hundred missiles China points at the island. Moreover, the very nature of the trade itself had an anti-American cast. Chirac and Chinese president Hu Jintao presided over a ceremony in which the French Atomic Energy Commission officially signed on to lend its considerable expertise to the Chinese Ministry of Sci-

*China plans to build thirty-two nuclear power plants over the next twenty years, and France, the United States, and other governments of countries with nuclear power industries have moved into high gear to capture parts of the business. The Chinese, no doubt, will pit all against each other and end up with the best technology mix possible and a strong Chinese nuclear power plant industry as well.

ence and Technology to develop Linux open-source software for PCs, servers, and handheld computers, thus allowing the French to help the Chinese defeat the American company Microsoft while providing a gift to the Chinese people that may bode well when it comes time to hand out

contracts for nuclear power plants.
Speaking of Chirac's 2004 trip to the International Herald Tribune, Jean-Pierre Cabestan, a China hand at the French National Center for Scientific Research in Paris, observed that "France likes to play the China card against the United States. Chirac has a multipolar vision of the world, and economics is a crucial part of it.'"
But France is hardly the only European country to play its China card. David Shambaugh, director of the China Policy Program at George Washington University, says "the breadth and depth of Europe-China relations are impressive, and the global importance of the relationship ranks it as an emerging axis in world affairs.'" Shambaugh notes that Europe's trade with China is accelerating rapidly, having grown 25 percent in 2003 and up nearly 40 percent again in 2004. The European Union and China are each other's largest trading partners and will soon exchange more than $200 billion in goods. As of 2004, Europeans had invested more than $40 billion with promises to pour in $30 billion more. China is now home to more than eighteen thousand firms established with European Union money and talent.'
On the geopolitical front, France and Great Britain hold joint military exercises with the Chinese armed forces (as does the United States) and the European Union has more cooperative military operations in the works. Chirac is only one of sixteen European leaders who have lobbied hard for an end to the international embargo that bans arms sales to China, disregarding United States concerns that any advanced weapons China buys may well be used against the United States, should China move aggressively on Taiwan. Also noteworthy, says Shambaugh, are the Communist Party's hundreds of exchanges with political parties throughout Europe made on the premise that the continent's social democrats have much to teach the Chinese about political evolution and reform.*
'Shambaugh also notes the irony of China's regard for the European social welfare state in light of the efforts in Europe to roll back the states' welfare models (partly as a response to the low-wage competition from China).

Do China and Europe make easier partners than China and the United States? The answer is probably yes. Europe has no historical or political affinity toward Taiwan and adheres strictly and unambiguously to a one-China policy. In addition, the European Union nations have little strategic interest in Asia, while the United States, in contrast, maintains a powerful military presence in Asia and the Pacific and has important territorial concerns and nonnegotiable claims.'"
Most important, China and many of the European Union countries are increasingly distrustful of the United States. While once it was the United States that urged China to give up its revolutionary fervor and join the mainstream of nations committed to a stable world, now China flourishes under the status quo, and its desire to lift itself up depends on a world with as litde turmoil as possible. From the view of France, Germany, and a majority of the European Union nations, China is a more committed partner to world stability than the United States, which is now seen as willing to push violendy against international norms. France and China, Shambaugh observes, lead efforts to constrain the United States through such multilateral insdtutions as the United Nations, and by creadng a multipolar world. Germany, Spain, and the Scandinavians follow.
Whether or not one thinks America was right to go to war in Iraq,

one may see why many European countries are now wary of the United States. After the end of World War I I , the United States stuck largely to an agenda of containment, in which it joined with Western Europe in a unified front against Soviet Communism. To the world, it was reasonable to assume that U.S. foreign policy would remain more or less constant across different American administrations and legislative majorities. That changed when the United States commenced the policies that led to the preemptive war against Iraq. The fear over the U.S. stance is that the American route to liberty is cleared with the rapid deployment of tanks, missiles, and troop convoys, not by the gradualism that unwound Communism over forty years." Right or wrong, American foreign policy no longer seems so constant, and to China and its new close allies in the European Union, the Europe-China axis provides a contingency plan against American volatility.*

•fust one day before the 2004 U . S . presidential election, the Chinese press was host to a confusing round of analysis focused on American foreign policy. Qian Qichen, China's former foreign minister, wrote in China Daily that foreign poHcy under George Bush was

Yet as Europeans leverage China's economic growth into a multipolar world and find in their new partnerships a counterweight to U.S. dominance, they risk trading one set of perceived dangers posed by Americans for new dangers posed by a richer China.

Although China's long-term military and geopolitical ambitions are beyond the scope of this book, the perils of the European approach are suggested by the writings of John Mearsheimer, the influential political theorist from the University of Chicago and a proponent of the "realist" school of international relations, which aims to recognize the lengths that states, big and small, go to maximize their power and thus ensure their survival. Taking a long historical view of power politics in his 2001 book, The Tragedy of Great Power Politics, Mearsheimer argues that great powers reliably seek military dominance over their spheres of influence and perpetually look for ways to demonstrate strength over their rivals.

China's ability to offer a convincing military challenge to the United States is still a long way off. (A recent U.S. Department of Defense report concluded that China's military power would not even equal tiny Taiwan's until 2006.) Nevertheless, the country's rapid economic ascendancy is transforming its military into a richer, better equipped, technologically improved fighting force and is also giving the country ever greater clout in shaping its strategic relations with other nations. The pacifying influence of America's overwhelming military power in Northeast Asia has long kept armed conflict in check. As China rises and Europe triangulates, that peace could grow dangerously strained.

China Kicks at America's Asian Footprint

China's relationship to Europe is naturally a compelling topic to both Americans and Europeans. But both groups must also pay attention to China's role in Asia too. In recent years, the Chinese government has

marked by its "cocksureness and arrogance" in its attempt to "rule over the whole world," and that Americans have ruined global cooperation in the war on terrorism by taking unilateral action. American diplomacy, he said, was backed by arms and the threat of preemptive attack. Backpedaling, the Chinese government quickly declared that the comments were not sponsored by the government. Days afterward, the paper's offending column was excised from the China Daily Web site.

declared that it is interested only in a "peaceful rise," not in regional dominance.
In November 2003, at an international meeting on the Chinese resort island of Hainan, one of the Communist Party's senior foreign policy officials presented other Asian nations with a vision of the region "rising together" in peace and prosperity. The language struck some other countries as plainly offensive, reverberant of the similar but hypocritical claims once made by Japanese imperialists in Asia and later by the first generation of Chinese Communist ideologues.
The Chinese government, cognizant of the jitters of its neighbors, repeats its peaceful intensions publicly and often.In 2003, China joined the ten members of ASEAN (the Association of Southeast Asian Nations) in what was billed as a treaty of friendship and cooperation, and China agreed to procedures aimed at avoiding military brinksmanship over several long-standing territorial disputes with Southeast Asian countries. China also agreed to conduct joint military maneuvers with the ASEAN countries.
The agreements, however, can do as much to fan suspicions about China's ultimate goals as dampen them. Regional agreements within Asia, like the diplomatic proximity to Europe, help China insert itself into a process that can ultimately weaken the regional footprint of the United States. China is most willing to push sensitive buttons in regard to Japan. In late 2004, Beijing granted Chinese exploration companies permission to explore for natural gas in an area of the East China Sea that pushes against, and perhaps into, a marme economic zone that Tokyo regards as Japan's. After laying claim to the area, Beijing quickly called for negotiations, thus entangling Japan in a dispute that will test the smaller country's military and political resolve and give China's leadership yet another propaganda point with which to stoke anti-Japanese sentiments.
Meanwhile, hungry China is now the largest market for goods from other Asian countries. Take away the growing Chinese demand from resource-rich Southeast Asia and for high technology products from East Asia's production lines, and the rest of Asia would have Htde export growth at all. In 2006, China's trade with Southeast Asia should match the region's $120 billion trade with the United States.
Consider China's relationship to Indonesia, the world's fourth most populous country with 200 million people and a long enmity toward the

Chinese. It shows how thoroughly China has been recast in the region.
In the 1960s, Indonesians endured violent political upheavals, much of which they blamed on the Communist Chinese for meddling in the domestic politics of the largely Muslim country over the last three decades of the twentieth century. Indonesia was also the scene of sporadic but intense anti-Chinese riots, directed at the 1 percent of the nation's population that is ethnic Chinese but whose families have resided in the country for hundreds of years. With the emergence of China as a potent economic engine for Southeast Asia, and as a model for economic development, attacks against Indonesia's ethnic Chinese have all but disappeared in the past few years.
But China's rise has not been the boon to Indonesia that it has been to its neighbors. Instead, the country has lost much of the low-wage shoe, garment, and electronics assembly businesses that have since moved to

Chinese factories. In addition, despite their own ambitious market reforms, Indonesia has been unable to attract anything near the amount of foreign investment that streams into China. Rather than anathematizing China, Indonesia and its ASEAN partners now allow China to join regional discussions.

One of China's goals in all of this politicking is to diminish U.S. influence in Asia. But China has a long way to go. The United States, and its military, has strong ties in the region, with uniformed personnel stationed in the Philippines, Japan, and South Korea;" alliances with India and Pakistan; and plans for reestablishing links to'the Indonesian military, one of the world's largest armed forces. The China-U.S. match in Asia is a slow power game, but it is afoot.

Aggressive Tendencies

Chinese nationalism, as mentioned earlier, is rising in parallel with China's globalization. State propaganda often seems directed at laying the groundwork for future territorial claims and is a constant source of diplomatic tension.

On the Taiwan issue, China's rhetoric on the use of force is unambiguous. China's capacity to drive its desired goal of unification has been buttressed by its economic growth and integration into the world econ-

omy. On one hand, an economically strong China has had an easier time diplomatically drawing the rest of the world closer to the Chinese position. On the other, China's technological advancements have pulled the shores of Taiwan closer to the reach of the mainland's military. China firmly declares that it is free to use force against Taiwan should it see the need. Indeed, China has spelled out a broad range of circumstances in which it would launch an attack, each vague enough to justify an invasion at any time. Among them are a formal declaration of independence by Taiwan, an intervention in Taiwan's internal affairs by a foreign power, and the advent of civil unrest on the island. When in the spring of 2004 the streets of Taipei were filled with angry protesters following the disputed national election, the mainland press was filled with grave concern from the Communist leadership, who publicly reserved the right to invade Taiwan to restore order.

Usually the most bellicose declarations appear in the Chineselanguage press, but more recendy the country has been saber rattling in the English-language editions of China Daily. "America has the industrial capacity and Japan the technological edge plus money to perfect their nuclear-missile defense system within the next decade. As soon as that is completed they will find a ton of reasons to attack China. No matter how we plead to them to maintain peace in our world they will never listen," ran a "Readers Voice" opinion column in the paper, written in response to overtures from Taiwan in October 2004. "China's promise of a 'peaceful rise' means that when she is strong enough to take all the marbles she will not act like a hegemon and will be fair in her dealings with the rest of humanity. Even then, China will go on acting as a responsible member of the international community, treating nations rich and poor, big and small, black and white equally."

Striking a tone reminiscent of the most colorful propagandistic prose of the Maoist era, the writer further declaimed that "one must not confuse such a goodwill promise of'peaceful rise' with the unprincipled, cowardly position of failing to resist aggression from a technologically superior foe and letting the aggressor choose the time and place of a preemptive military confrontation. Therefore, it is pure gobbledygook muddleheaded thinking to put an 'ultranationalist' label on such selfevident righteousness.""

The United States Department of Defense, in its 2004 assessment of

China's military strength, interprets this stepped-up pressure on Taiwan as evidence of China's increased confidence that it can succeed in taking over the island if it makes the move."

There are also more pragmatic reasons to expect a richer China to grow increasingly assertive. The country is building a global network of mining and petroleum firms and will eventually see the need to patrol the world's sea-lanes, over which its precious cargoes travel. New oil pipelines to China will soon reach up from Thailand and down from Russia and will require the resolve to make sure they do not get shut off for political reasons.

China's growing international clout need not inevitably expand the country's military ambitions or lead to a confrontation with the United States. Skillful diplomacy can do a lot to head off a conflagration. The interdependency of the Chinese and American economies certainly creates strong constituencies for sanity. Yet even a peaceful rise has important consequences. As China's new economic might helps it acquire geopolitical clout, its growing political power and strategic presence also hinder the rest of the world's ability to force China to compete on a level economic playing field.

This year the French may see dieir interests aligned more deeply with China than with the United States, and the United States may choose to sUght France in favor of its own ties with China. Yet is it really in France's economic interest to play the Chinese against the United States.^ And is it in Germany's interest to compete at all costs to win Chinese business that might otherwise go to Japan? The worldwide competition for the good graces of the Chinese government means that there can be no unified front for the rule of law, compliance with the World Trade Organization, or sanctions against a government that muscles companies to transfer their patents. There will be no workable effort to pressure China on the environment, on labor rights, or perhaps even on its geopohdcal ambitions.

With the world's billions bet in the mainland and the world's governments and businesses co-opted to the Chinese message, can the Taiwanese, for example, expect that any country would fire a gun on its behalf should the Communist government decide to invade.? It is doubtful. How much would the Chinese have to nip at the territorial edges of the Phil ippines, Indonesia, South Korea, or Japan to get U.S. or

European warships to engage." As other countries compete for the economic and poHtical advantage that will win them Chinese deals and friends, China is accumulating an impressive hand, filled with foreign investment dollars, the world's best technology, and new strategic powers. China has little problem setting the rules of the game and no problem breaking them.

Cooking with Gas

China is also deploying its national wealth in ways that may catch competitors off guard. A September 2004 story in China Daily headlined "Cash-Rich, Commodity-Starved Mainland Shopping Spree" announced the beginning of an "overseas acquisition march fueled by swollen foreign exchange reserves and a need to secure natural resources,"" The article in the government-run paper describes how China's nearly $500 billion in U.S. dollar reserves would serve as a war chest for the acquisition of foreign companies, especially resource and commodity firms. Chinese state-owned firms have spent at least $5 billion on overseas oil and gas fields in the past ten years, the paper reported, but it cited a recent $550-million takeover of a South Korean oil refiner as evidence of China's new willingness to buy entire companies abroad. The article went on to describe just how much money China's government firms could have at their disposal once they make up their shopping lists. "Mainland firms have enough cash to win over rivals worth $10 billion, enough to buy a company such as Woodside Petroleum, Australia's largest listed oil-and-gas firm, and Unocal and Devon Energy of the United States," it confidently predicted. "Meanwhile, PetroChina is looking at the oil assets owned by top Canadian oil and gas exploration firm EnCana in Ecuador. The assets, by some estimate, are worth more than US|1.5 billion. Money is not a problem for PetroChina, which earned US$8.5 billion last year." Following the strategy of experimentation that rolled out economic reform over time, China has entered some international corporate waters studiously, in preparation for bigger moves. A Chinese company bought two power plants in Australia, purchases meant to serve as training grounds for learning about the competitive power-supply market.

China's economy will remain a hybrid of private companies and large government-owned firms in key industries such as power generation, resource mining and exploration, transportation, truck and car manufacturing, as well as large private-sector firms with inextricable links to government agencies and officials. Chinese companies with government links will continue to be able to draw on government resources that even the world's largest private sector firms cannot match. In the past, for example, the open spigot of money out of China's banks has helped bankroll goliath domestic firms. Now those companies are turning their sights on foreign acquisitions. A consortium of Chinese government-backed firms made a spectacular $5-billion bid for Noranda, Inc., Canada's largest mining company, in late 2004. The consortium includes several Chinese state-owned enterprises whose structure allows them to double as big, publicly traded firms while the state remains the dominant shareholder. The group includes Baosteel, the $10-billion giant that is now the world's fourth largest steel company, and Jiangxi Copper, China's top copper refiner. The consortium has access to foreign capital on the world's security markets while keeping its links to China's government banks. The world's other mining companies, such as American copper giant Phelps Dodge, can only raise money the old-fashioned way, by justifying its investments to privatesector lenders and shareholders. In June 2005, one of China's large government-owned oil concerns, CNOOC, bid nearly $20 billion to buy American oil giant Unocal. In the wake of objections from the U.S. Congress where the CNOOC bid was regarded both as a threat to U.S. energy security and an unfair foray into U.S. capital markets by a Chinese

government-owned corporation, CNOOC withdrew its bid.
China's mineral and resource companies nevertheless remain interested in acquiring foreign-held assets. In August 2005, state-owned China National Petroleum Corp purchased a Canadian oil company with an Asian name, PetroKazakhstan, for $4.2 billion. At the invitation of the Canadian government, representatives from PetroChina and CNOOC met with Canadian Natural Resources Minister John McCallum to discuss taking stakes in Alberta's vast oil sands. (The meeting had strong political overtones, with the Canadians playing a China card against the U.S. as the two neighbors were locked in several longstewing and acrimonious trade disputes.)

The Chinese strategy is not risk free. The Chinese people may find themselves saddled with assets for which their public companies have overpaid. Then again, government-sponsored buying sprees of mineral companies can help give the Chinese the power to set prices in the world market and to ensure their own supplies. One sign that China is heading for both a boondoggle and a buying spree is the 2004 rush on the Canadian stock markets, where half of the world's equity finance for mining firms is raised. Not only did share prices soar, but mining companies from all over the world rushed to list their shares in anticipation of a speculative boom caused by Chinese buying.
An economically big China that is still the sum of impoverished parts may also find reasons—some economic and some political—-to follow the paths of other superpowers and assert its armies. I f the rush to spend some of its massive dollar reserves on foreign companies and resources does not deliver China into the economic company it means to keep, or even i f it does, China may see the need to spend more of its money on the world's weapons market.
China's rise means the world will need to get used to a different kind of economic superpower, one that has huge numbers of people poorer than those living in countries that China has surpassed. In such a country even a small rise in the national standard of living results in an enormous change in the total size of the national economy.
As usual, the story may be told in the numbers. Today, the United States can claim both the world's highest income among large countries and the world's biggest economy. But if per capita income in China (measured by purchasing-power parity) were to double overnight, the size of China's economy would instantly top the U.S. economy. China would still be a very poor country; its per capita income would still only match the level in Botswana, and one-quarter of America's. If, however, the incomes of the Chinese come up to a mere half of those in the United States, a standard of living that the Chinese someday aspire to, China's economy would be two and half times as large as America's.
How China's scale and relative wealth play out in the future truly beggars today's understanding.

CHAPTER TWELVE
ONE LAST STORY
B A C K I N S H A N G H A I ' S BUSY D O N G T A I M A R K E T , T H E L I F A M I L Y awaits news about whether their atmospheric stretch of shops will be bulldozed for another mall or, in keeping with the city's new resolve to preserve some of its period charm, spared and spruced up. Whatever the

fate of the market, the old world of the antique and curio sellers is butting up against nearly every trend reshaping China and the world. The small shops offer a reminder that the sweep of history creating giant Chinese corporations and forcing the world's largest companies to rethink their global strategies is also remaking the lives of Chinese shopkeepers and Americans far removed from the most prominent manifestations of China's rise.

A few stores down from the L i s ' jam-packed shop is an even smaller space with its own mix of genuine collectibles and reproduction whatnot. It is the shop of the Zhai family* from Henan Province. A n average of ten or twelve foreigners browse the Zhais' shop every day. Aaron Shershow, an American resident of Shanghai, is a regular visitor. By all appearances, there is little to distinguish Shershow from other waiguoren (the Chinese version of "gringo") strolling Shanghai. He looks around as if everything were new to him, yet also as i f it might be gone tomorrow. A man of moderate height in his midthirties, Shershow wears a baseball cap over his black curly hair. As he walks, his shoulders slump and his hands tuck halfway into his pockets as if he were killing time in a suburban American mall.

His meandering, however, is far from purposeless. The Dongtai shopkeepers know that Shershow looks over their wares carefully and that on any day he is a potential customer. Shershow is also a friend to

•All the names in the shopkeeper s family have been changed.

many of the sellers. They take to him readily. The American learned Mandarin Chinese in his high school in Massachusetts, and later in college and during a year in Taiwan. He speaks the language with litde accent and a warm smile, finding ways to make every word reassuring. His conversation is sweetened with frequent nods and interjections of " I see," " I understand," and "This is fascinating." He has also learned Shanghainese, a feat that astonishes locals and opens communications all the more.

Shershow loves the Chinese people, and it shows in his rapport with them. The big economic and geopolitical issues all seem like distant nonsense in his hfe in Shanghai. His concerns involve his social life and everyday business. Will he meet friends for dinner at a favorite dive or splurge at a popular new French restaurant.^ Will his landlord sell to developers the old Shanghai house Shershow rents.? How can he make more money without driving himself mad in the city's supersonic rat race.?

Before settling in Shanghai, Shershow worked in Hollywood. He moved to China to join the production teams of Western film projects that came to China to shoot. Shershow has a knack for getting Chinese and American crews to work together and on schedule, and he has worked on several big television series and fdms in Shanghai. For instance, he has his own team of carpenters, all from a single rural village in China, whom he can set loose to build any prop or set. He swears they are as good as any in Hollywood, and of course, cost nothing near the price of tradesmen in California. Film work, however, is far from steady. After the SARS outbreak in 2003, it dried up altogether. But in China, where new businesses are just an idea and few dollars away, Shershow came up with an alternate plan to tide him over. He started his own small Internet sales business.

Joining a friend in Los Angeles, Shershow picked out several items from the Shanghai markets and offered them on eBay.* Those that tested well included traditional baskets, army uniforms, and Chinese versions of Tin Tin comic books (unauthorized versions from the 1970s and 1980s, completely rewritten by the Communists to remake Tin Tin, the

•The name of Shershow's firm on eBay is Yellow Mountain Imports, and its eBay screen name is ymimports.

bourgeois Belgian boy detective, into an agent for class struggle). Chinese editions of The Art of War, unsurprisingly, do very well, too.

The export business grew into a microenterprise that mirrors the Chinese economy. Shershow now employs a local manager, a Chinese friend who coordinates bulk buys and shipping prices, and he even has hired a migrant worker who comes in every day and packs up goods for bulk shipment to Los Angeles, where another friend ships them out to customers who buy the goods on eBay. The migrant worker, a twentyyear-old farm boy, is so thrilled with the opportunity to learn how to use a PC that he will gladly perform any task.

Shershow's manager convinced him to list for sale tea thermoses made in the manager's hometown. The thermoses, common in China, are handsome, painted acrylic jars that have screens in their lids so they can be filled with tea leaves and replenished with hot water all day. The leaves stay put and the tea flows through the top. American stores carry nothing like them. On eBay they caught fire, and Shershow's operation now fills whole shipping containers with tea thermoses and other items for American buyers.

Lately, however, Shershow has noticed that the shopkeepers in the Dongtai Market are also trying their luck on eBay. "They're all over the eBay site now," Shershow says.' "If you walk down the street you can see the shop owners packing goods into Styrofoam boxes all labeled for mailing to eBay buyers." In an ad hoc inventory of eBay sellers, and possible competitors, Shershow found 56,000 items offered by sellers in China, with 31,000 of them in the category loosely defined as antiques. Thousands of Chinese sellers also offer computers, electronic components, musical instruments, cars, cheap DVDs, look-alike watches, and even real estate.

The new sellers are something of a problem for Shershow's business. Like the world's makers of auto parts and microchips that face constant poaching, Shershow finds enterprising competitors passing themselves off as his operation. On eBay, it is difficult to keep success a secret from other sellers. If his venture finds a product that sells well, the Chinese sellers post the same items in their listing and lift wholesale the language Shershow has carefully crafted to pique interest in his items.

Often too, Chinese sellers hawk inferior versions, but do not flag them as such.

Nevertheless, Shershow believes his crew can easily stay ahead of the imitators by choosing better items that are more in keeping with Americans' tastes, especially their quirky demand for offbeat collectibles. No Chinese sellers have yet caught on to the Tin Tin market.

For that reason, when Shershow is asked by a Dongtai seller about how to conduct business on eBay, he often obliges, both to keep his friendships on the street strong and to get a look at what the sellers are up to.

It was just such a request that led him to the cramped upstairs room where Zhai Ming, the twenty-four-year-old son of the Zhai family, runs the family's international operations. The slight Zhai Ming greets Shershow in a sweater and tie, his hair pomaded and neatly combed back. He talks in a faint, nervous tone as if the American were a doctor making a bedside call.

Shershow eyes the setup, which to an uninitiated American would look something like a Mississippi mud shack stuffed full with scavenged office equipment. Shershow, however, sees more. The Zhai apartment is not a humble beginning, but a huge step up from a much humbler beginning in the provinces. The family's commitment to buy computers required grave sacrifice, and they see their future riding on what Zhai Ming can do with them.

A few moments after Shershow arrives, Zhai Ming's father, Zhai Young, comes in to say hello. The father arrived in Shanghai in 1992 after a long military career. His fortunes might be higher had he not been caught in the political crossfire following the 1989 Tiananmen Square protests. As it happened, the older man had been a soldier assigned to serve in the detail of bodyguards for China's former premier Zhao Ziyang, who was also from Henan Province. The former premier had a distinguished career in the early years of Mao's rule but was persecuted during the Cultural Revolution. He went on to become a popular reform figure and held many government posts from which he advocated economic and political change. Policies laid out by Zhao Ziyang gready influenced China's turn toward a market economy, and the country's new wealth owes much to his vision. In a fateful decision, he advocated that the Chinese leadership enter a dialogue with the students who occupied Tiananmen Square. He lost all his posts, was placed under house arrest, and stayed under supervision until he died in early 2005.

In China, where military and political connections can offer a path to wealth and power, the former premier's fall from official grace was almost certainly a blow to the Zhai family. On hearing the outline of the former soldier's story, Shershow nods his understanding, signaling a deeper knowledge of what has been left unsaid. Though the humble Zhais do not talk about the impact of the political change in their lives, preferring to focus on their success in building up their small business, the family's will to succeed in the system that both set them back and now allows them room to prosper is strong. In China, there is also an optimism that defies the state, one in which people see their success as their own triumph despite the disappointments that official China has dealt them. China's private sector is full of people driven to prove they can overcome the reach of the state.

Now Shershow asks about the setup. The whole operation is handled on two locally built computers that are linked by Chinese-made networking gear to a broadband Internet connection. The office, which must be reached by climbing a rickety outdoor staircase and ducking past low, dripping water pipes, also doubles as the bedroom and kitchen of Zhai Ming, his wife, and their baby. Its crumbling walls use old advertising calendars as wallpaper, and the family's clothing hangs all over on lines and nails planted in the walls. As Shershow sits down on the

jumble of covers on top of the bed that acts as a bench, Zhai Ming's wife, buried unseen in a quilt, wakes and gives him a start.
"What do you think of the Internet.?" Shershow asks Zhai Ming.
The young man takes a deep breath and puts his hands in the air to signal that he is about to explain something big.
"It is a new world for me," the young man says with humble amazement. "Before my world was restricted to our family shop and our circle of friends and relatives. I did not have the opportunity to explore or to meet people from far away. Now I am communicating with people over the world." He pauses to think of how exacdy to describe the impact on him.
"It is as if the whole strange world is shrinking into this house." Zhai Ming says he spends far too many hours on the computer because he finds it too fascinating to turn off. Some of the shop's Internet customers, he says, want to become friends. A woman from Australia writes to ask him about his feelings about China and his life. He says he is reluctant

to say too much and that he is embarrassed by his hmited use of EngUsh, which relies on dictionaries and a Web site that translates both Chinese and English. He does answer her though, out of a heartfelt fear that he will hurt the woman's feelings if he is too shy.
Zhai Ming and his wife struggled with the English-Chinese dictionary and figured out how to set up an eBay seller's account and how to get paid with credit cards, which are new in China but indispensable for international online sales.
On their first night, they put ten items up for sale and sold four. Suddenly they realized that the Internet allowed them to keep their store open through the night and have access to the 60 million buyers who visit eBay every day. Only a fraction actually buy Chinese collectibles, but that small contingent is perhaps the biggest, most motivated pool of buyers in the world.
The Zhais' stumbling block is their presentation. Out of the two hundred items they now offer for sale on eBay, only one in five sell, and of buyers who commit to purchase, only two in five pay. The Zhais distrust their own descriptions, and they have asked Shershow to help.
Shershow sits at one of the Zhais' computers and pokes around.
They have all the software they need to make beautiful Web pages for their wares. That includes all the late-edition software that lives on nearly every computer, plus auction management software that keeps track of inventory and activity on eBay. Shershow shows the young man a better way to organize his sales using the software—a small but valuable technology transfer. Shershow then pulls up the description of a seemingly old Chinese oil lamp. The English is only intermittendy intelligible and even then the description is so extravagant that it would raise suspicions from nearly any buyer. The Zhais' biography also needs work. Shershow sets out to make the necessary changes.
While Shershow works, he asks Zhai Ming if he has any complaints about his computers. Zhai Ming says no, adding proudly that nearly all his technology is made in China, and most of it nearby. The price of equipment is dropping, he says. Of course, much of the equipment that Zhai Ming's customers use is also made in China, and the price for it is also dropping rapidly.
The prevalence of affordable Chinese technology is opening up the

world to amazed people in China such as Zhai Ming, shifting the way

the country spends its money and time. By conducting the family business at night while his shop is closed and by communicating with his new friends on the other side of the earth, Zhai Ming reaches beyond the China where minds are controlled and where one's family fortunes depend on its local social standing. Shershow embodies the other side. In China these days all kinds of connections pay off. In the decrepit Dongtai slum, not so far from the gleaming skyscrapers filling with Western and Chinese companies, the Zhais see a good life in the making.

It is not only China's big companies and its government's grand designs that are changing the world. Change also comes from hundreds of millions of modest enterprises that reach deep into China to make what the world wants. We might remember that America grew strong on the enterprise of its own immigrants who arrived with little and whose American dreams often began by selling goods from wagons and suitcases. Most of China's dreams also begin with modest means. Those dreams are now the most powerful force in the world.

AFTERWORD

T H E FIRST HARDCOVER EDITION OF CHINA, INC. APPEARED I N F E B - ruary 2005. Although many of the book's predictions and arguments were made with the fear that events might soon contradict them, today China's stars have ahgned to make the book's predictions look nearly deterministic. The dynamic discussed in China, Inc. continued to burgeon: through 2005, China continued its quest for world resources, especially oil, stepped up its efforts to acquire foreign companies, grew in geopolitical and financial clout, continued to pirate intellectual property ever more boldly, and sent shock waves through the business world as its manufacturing sector and knowledge economy boomed. Indeed, even after the government enacted measures meant to slow the fantastic pace of China's growth, the country's economy surged anyway, up over 9.4 percent in the first half of 2005. The fortune of good prediction, of course, brings me relief as the author of China, Inc.'s argument, but less so as one who continues to hope that China's growth will lie matched by sound, clearheaded reasoning and bold policies by the country's competitors, including the United States, that ensure that China's growth is also an engine for the rest of the world, rather than a threat.

Since the book's release, I've been invited to speak to many different groups of people focused on China's rise. Invitations have come from local communities fearful—but hopeful too—of the future that China's growing strength will bring them. Others have come from business schools where the faculty must reckon with changes affecting their students as they graduate into executive ranks or start their own businesses and ponder how to leverage China to their advantage while keeping Chinese competitors at bay.

Washington, D.C., has also been a frequent stop for me. There, leg-

islators burdened with the demands of the war in Iraq, security at home, and Social Security in the future seem to feel that China has been outplaying the United States while America focuses elsewhere. Visiting informally with the Senate leadership in July 2005,1 was struck by how urgently lawmakers feel they must get up to speed on China. I was also impressed by their willingness to take on—intellectually, at least—the issue comprehensively, balancing concerns over prices, jobs, and geopolitics and, despite some sharp rhetoric, finding middle ground. For his part, President Bush, hardly one for understatement, has measuredly said many times that the United States' relationship with China is "important" and "complicated."

Nevertheless, the Congress, the president, and the collective voices of industries, communities, and workers have not pushed the United States any closer to a comprehensive view of what in the near and long terms America must do to prosper as China grows. Nor is there a national strategy on how to counter the growing global political influence of China, which often comes at the expense of the United States, despite that for most of the countries growing closer to China, Chinese political norms would be a decided step backward. Instead there seems to be growing uncertainty in the United States about what China means for America's future.

Indeed, China's continued strength spreads such uncertainty. When I talk to groups, the questions I'm most often asked are whether China's growth is sustainable and whether the business environment is reliable. (Both questions are hard to answer. Though the former commodities trader in me insists that it is folly to predict with any certainty that China won't suffer a serious reversal sometime soon, no economist or forecaster can build a worthy model of everything China is going through.) Sometimes these questions are asked with an eye toward the Chinese people, who have, of course, had more than their share of uncertainty and would be the first to suffer if the country's economy or social order collapsed. Protests continue to grow in frequency and size in China.

That's a sign that the current order has fissures, but also that the Chinese Communist Party still has more than enough coercive power and enough ameliorative incentives to keep dissenters from linking across local borders and growing into a movement. The Party also has an unbroken record in the two decades of incredible economic growth.

In this regard, China's growth streak has proven one of the most reliable trends in the world. The country also showed that it would not significantly upset the "financial balance of terror" that it shares with the United States. When American political pressure mounted on the Chinese to revalue their currency against the dollar, the government found a way in July 2005 to make minor adjustments that looked big, and to make small promises that American leaders, particularly John Snow at the U.S. Treasury, could claim were substantive.

Nor did China pull out of the U.S. debt market, as many feared it might do. Joseph Stiglitz, the Nobel Prize-winning economist, noted that the world, America especially, breathed a sigh of relief Instead of spending hundreds of billions of dollars it possesses in foreign currency reserves—the result of its massive trade surplus with the United States—on U.S. bonds, China could have decided to spend that money inside its own economy. Stiglitz also notes that the bulk of the U.S. trade deficit is not "made in China" but in the United States, where the government and consumers overspend and overborrow.

In all, the Chinese played their international currency-market hand consistendy, conservatively, and well in 2005.

Meanwhile, other developments showed a rising Chinese corporate aggressiveness. In December 2004, Lenovo, China's number one computer maker, bought IBM's PC business for $1.75 billion, creating the world's third-largest PC seller after Dell and Hewlett-Packard. This bid was followed by an unsuccessful attempt by Haier Group, a large Chinese company, to buy Maytag, the American appliance manufacturer, for ftl.3 billion. Despite the iconic nature of Maytag and IBM in American culture, neither proposed deal caused much of a stir, perhaps because washing machines and PCs are now seen as generic consumer items, akin to DVD players and televisions.

But oil is a different matter. In the summer of 2005, the China National Offshore Oil Corporation (CNOOC), whose shares are mostly owned by the Chinese government, caused a tremor in the United States when it tried to buy Unocal, an American oil company with substandal reserves in Asia. With the |18.5-billion bid the Chinese government signaled for the first time that it would not be sticking to U.S. bonds but rather that it was willing to spend large sums on hard assets in the United States. Ultimately, political obstacles in the United States

caused CNOOC to back down, though few expect the Chinese to stay away from targeting U.S. companies. In that too the Chinese have long-term plans and are likely to stick to them.

Some of these acquisitions will be successful and some may create the same nationalistic outcry as the attempted Unocal deal. It's fair to say that the relationship between the United States and China is becoming ever more pohtically complicated. In fact, America now looks like the player that is most likely to introduce uncertainty into the Chinese economy. In 2005, Congress vigorously debated tariffs and restrictions on Chinese goods, blocking Chinese companies from entering the U.S. mergers and acquisitions game, and talked loudly about answering a future military threat from China. It is essential that the United States get the rules that American businesses need to thrive inside China and against China, and a good measure of brinkmanship will help the cause—provided it is clever brinkmanship that ultimately delivers the benefits of trade without the damage of a prolonged trade war.

The Dangers of Manufaketure

Intellectual property may be the one area in which China, Inc. has had the most influence in shaping public debate. I don't think I am overstretching in saying that the book, together with "Manufaketure," an article I wrote for the New Yorf{ Times Magazine, has fundamentally changed the way in which the deep threat posed by China's loose intellectual-property regime is regarded.

In April 2005, I participated in a public hearing on China's rapid technological ascent. The event was put together by the U.S.-China Economic and Security Review Commission, the congressionally mandated body charged with monitoring the rise of China's many growing powers, including its brainpower. Among the two dozen panelists who spoke were officials from the U.S. government's scientific and defense establishments, academics, Silicon Valley executives, and representatives from several high-tech trade associations. In all, a high-powered mix of people whose professional lives are increasingly informed by China's rising technological prowess. Listening to their descriptions and analyses, I was again struck breathless by the rapidity with which China is both

absorbing the world's best technology and priming itself to be a leader in both basic and applied science and engineering.
One of the most troubling assessments was offered by Kathleen A. Walsh, the Henry L . Stimson Center scholar whose work was invaluable to the argument of China, Inc. Walsh noted that despite China's new membership in the World Trade Organization, a group that prohibits governments from forcing private companies to transfer their precious, proprietary technologies as a condition for doing business within their borders, China continues to pressure foreign companies to collaborate with Chinese firms to develop advanced technologies. Unsurprisingly, the areas in which the pressure is most keenly felt are also areas in which global standards are still in flux, and in which early entrants have a good chance of exerting market power as the technologies find commercial acceptance. Among these, Walsh cited wireless-data encryption, computer software, and secure personal computer terminals, calling China's efforts around these technologies "disturbingly reminiscent of pre-WTO Chinese regulations." Walsh also warned the Chinese were increasingly willing to use the massive power of government agencies to procure technology to influence the Chinese market for technology in favor of Chinese firms. Her warning proved prescient. A month later, the Chinese government issued proposed standards for software it would purchase, requiring any government buying to focus on products that were made and developed in China.
According to the U.S. Department of Commerce, standards and technical regulations affect over 80 percent of global commodity trade. China's domesdc-sourcc restrictions, along with its continuing efforts to enforce technical standards of its own on a wide variety of products, acts not only as a major barrier to foreign technology, but also compels foreign companies to integrate their research into China's domestic tech establishment in order to earn a place in China's growing market.
Walsh cited a 2005 report by the American Chamber of Commerce in China that complains, "Member companies note a growing influence of standards working groups [in China] that either preclude foreign participation or attach certain technology sharing conditions. This is especially common where there is government-funded or encouraged R&D, or in sectors where strong resistance to foreign competition exists (e.g., construction and building materials)."

Not all technology flowing to China is forced to go there, though. On their own, and for their own economic reasons, foreign firms are quickening the pace at which they set up laboratories and development centers in China. The Chinese government counts two hundred new high-tech labs opened by foreign high-tech firms alone. That growth may speed up. The Economtst's Intelligence Unit polled one hundred global high-tech executives and learned that four in ten would choose China first for their expanded R&D abroad. Zero2IPO, a service firm for foreign venture-capital investors working in China that is run, in part, by Gal Dymant, the entrepreneur who is building MRI machines in China, keeps tabs on high-tech venture-capital money flowing into the country. In 2004, says Zero2IPO, some $1.3 billion in venture capital from outside China was planted in 253 start-ups.

China, Inc. 's prediction that China would make rapid progress as a computer chip design center was also correct. An August 2005 report issued by the high-tech industry-research firm iSupply noted that nearly 15 percent of the chips sold worldwide during the year will have been based on design work done in the People's Republic. The United States still leads; its designers were behind more than 40 percent of the world's chips. Japan is second, with 15.5 percent, but not for long. "By 2006, China/Hong Kong/Taiwan likely will surpass Japan and become the world's second-largest region for design-driven semiconductor sales after the United States," the iSupply report claimed, noting that China's semiconductor market chalked up $40 billion in sales last year, achieving double-digit growth while the industry as a whole was stuck in single digits.

Since 2004, the Organization for Economic Development and Trade has ranked China as the world's largest exporter of high-tech goods. Yet high tech is not the only sphere expanding research in China.

Speaking to groups about China, Inc., I often heard from audience members whose firms have recently hired Chinese scientists and engineers. In California, I learned of a start-up American pharmaceuticaltesting firm whose business plan is to farm out animal testing to China. A construction-engineering firm in Chicago now has three thousand engineers in China doing development for its American and global projects. That's up from forty just two years ago. Firms routinely find

that Chinese talent serves them well and at wages far below what they might pay in the United States and other advanced economies.

Valuable American, European, and Japanese technology also flows more freely than ever into China on the tide of piracy and counterfeiting. In one strange twist, Malcolm Bricklin, who made his name introducing Subarus and Yugos into the American car market, founded Visionary Vehicles, a company set up expressly to import into the United States cars made by China's Chery Motors. That is the same company accused by General Motors of copying, without license, an entire GM car. Chery's version of the small city car was so experdy done that when the door of the original model, made by GM in Korea, was reputedly tried in the door of the Chinese knockoff, it fit as true as one of the GM doors. Bricklin hopes to bring into the United States premium cars akin to a Toyota Camry, but appointed with leather and wood and top-grade electronics, for around $20,000. One reason for aiming at the middle of the car market is to avoid the label of "cheap and Chinese." Yet Bricklin also sees ways that his new company can benefit from Chery's and China's reputations for copycat manufacturing. Consumers, he believes, will see an expert copier as someone they would not mind buying a car from, in much the same way that fashion-savvy consumers might buy a knockoff of a Swiss watch sold by a street vendor in Manhattan.

The chief reason China, Inc.'s arguments have gained traction is that every effort to get the Chinese government to enforce rules that protect copyrighted, patented, and trademarked goods has failed. Worse yet, as China's economy grows, so do the practices that usurp the rightful intellectual property of foreign concerns. They grow in large part because the Chinese people continue to benefit from their way of doing business, but also because the international firms who are the buyers of Chinese goods also benefit.

In speaking on the issue before congressional committees and commissions and industry groups, I have asked my audiences to join in a thought experiment that places them in the frame of mind of the Chinese, struggling themselves to navigate a future regime—whether loose or rigid—for intellectual-property enforcement. Imagine, I ask, that we inhabit a country that, like China, is home to perhaps 1.6 billion people, most of them poor. Imagine that despite recent progress we still

lag far behind rich countries in technological innovation. Assume that our entertainment and publishing industries pale compared to the slick fare coming from America. Suppose, however, that we could usurp for our people patented, copyrighted, and trademarked products that can make our country healthier, smarter, richer, fiercely competitive, and happily entertained.

Imagine now that the countries—such as the United States—from which we "borrow" intellectual property complain bitterly and publicly, but in practice act as our partners in the theft. The United States does this not just by buying the goods we make that are easily spotted as knockoffs, but by leveraging our loose enforcement regime on the manufacture of goods that are legitimate to foreign buyers. It works like this: the more we run our plants with pirated software, the more we reverse-engineer advanced industrial machines and build great copies of proprietary production lines, the more foreign companies buy what we can make for them.

The experiment hopes to make clear why it has long been and will remain in China's interest to take, but not pay for, much of the world's most valuable technology. Usually when the damage is counted, foreign officials add up the prices of pirated software and DVDs and knockoff machines and designer goods. In themselves, these numbers are huge, perhaps $80 billion in lost sales to non-Chinese companies. The United States and Japan suffer most. But the numbers do not begin to describe how piracy is essential to the competitive edge that makes China such a tough competitor.

Indeed, the original argument I made in China, Inc. did not go far enough. I now believe that we must come to grips with how nearly every good turned out of Chinese factories for export benefits from the country's loose intellectual-property regime. That includes the goods that made up America's $160-biliion-plus trade deficit with China in 2004. Trade deficit numbers are scary, and we tend to see them the same way victims see the dollar costs of crimes or disasters. Yet in the case of trade between China and the United States, they are also a good, albeit indirect, measure of how well American companies—the ones that bring in Chinese goods—profit by taking advantage of China's low-cost manufacturing.

After makmg this argument at the 2005 INC 500 Conference, an event that honors the leaders of the fastest-growing entrepreneurial companies in the United States, I was approached by Ron HoUis, the CEO of Quickparts in Atlanta. Hollis's company makes custom parts

that go into other machines. He had recently returned from China, he said, where he had scouted for new business. On his factory visits he routinely asked whether any of the software in use was legitimate. Almost none was, he was told nonchalanriy, as if an admission that software was legitimate was also an admission that the factories were wasting money.

"In a U.S. factory like mine where engineers spend their days on sophisticated workstations with advanced industrial-design software, the yearly cost to run software at a single station can cost $60,000," Mollis told me. "It can add up to millions a year and be a shop's highest cost. Chinese factories pay nothing for that."

Convincing the Chinese to enforce intellectual-property protections means convincing them to give up one of the primary practices that has nourished their economic miracle. It is a hard sale. Current hopes for remedies rest on negotiation and the threat of adjudication through the mechanisms of the World Trade Organization. These allow the Chinese to buy time—possibly years—that the United States cannot afford to give. So far, the best strategy that global firms in China have come up with is the radier uncertain bet that if they move advanced research to China and file patents for products pioneered in the country, then the Chinese will come around to the view that they must have a functioning intellectualproperty enforcement regime in order to protect Chinese products. It is a big and risky bet. And, needless to say, it is hardly a near-term solution.

One better approach would be to levy a kind of technology tax on a wide variety of Chinese goods coming into the United States, based on the assumption that the low cost of nearly all Chinese goods derives in some way from stolen technology. That show of strength might quickly convince China to change its rules and enforcement.

Another approach would begin at home. The United States could insist that corporate buyers of Chinese-made goods certify that their goods were not made in factories where pirated technology runs the show. This kind of monitoring is already used by U.S. companies that inspect their suppliers in low-wage countries to make sure they are not using child labor or abusive management techniques, importing "blood diamonds" or rain-forest lumber or, in some cases, patronizing factories with dangerous environmental practices. The system is not perfect, but it has made a difference in how American companies and their suppliers do business.

I f America and other advanced economies want to continue to shed old-fashioned manufacturing and move into ever more sophisticated knowledge work, then we must find a way of keeping our "New Economy" from transferring itself to China at no cost. For a short time we still matter enough to the Chinese to push a change. The U.S. trade deficit alone with that country is nearly 15 percent of China's economy. If we don't protect our economy now, we will find we have far less economic clout after the most vital parts of our economy have been cloned in China.

A homegrown approach might also rejigger the way that Americans and others address challenges from China, shifting efforts that are rooted in blame to practical measures taken among ourselves. In nearly every way that China challenges the United States and the world, answers on how to stay competitive with the Chinese and how to prosper as that country grows will succeed far better if they do not depend on the Chinese taking action in the world's interest. Rather, China's competitors must find their own solutions. Some will involve puzzling through how to strike profitable partnerships with China, others will depend on raismg our skills so high that we forge unchallengeable advantages.

The strong response to China, Inc. has helped change the public view of China from that of a poor and weak country to one of great strength. When I speak on China, I often say that we must admire the country. Some take objection to that view, pointing out that China is still a Communist country run by an elite that cares more for power than its own people. That view blinds us to China's amazing progress and also to finding the best answers to the challenges it presents.

Another criticism of the book is that in advancing improved education as an essential answer to the China challenge, I have fallen back on a trivial solution. I take strong exception to this view. Certainly anyone who has seen how deadly serious Chinese families are about the education of their children, or who has seen how rapidly China has refashioned its best high schools and universities, would immediately grasp how nontrivial education is to the Chinese. I f China's schools and laboratories pose a challenge, the answer is better schools and laboratories.

The rest of the world will profit little by demonizing the Chinese, but might find powerful answers in studying and admiring, even grudgingly, the country's growing strengths. And, of course, its people.

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