A SPECIAL SUPPLEMENT TO *NATIONAL JOURNAL*

the Next Economy

WINTER 2010 A JOINT PROJECT WITH *THE ATLANTIC*

BACK TO THE FUTURE

IS THERE A SECOND ACT FOR U.S. MANUFACTURING?

BY BRUCE STOKES

PLUS:
WHITE-COLLAR EXPORTS

ARTICLES BY
JAMES FALLOWS and RONALD BROWNSTEIN

Every day an average of 11 teens die in car crashes.
On November 10, 2009, Alex Brown was one of them.

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WINTER 2010

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A SPECIAL SUPPLEMENT AND JOINT PROJECT OF *THE ATLANTIC* AND *NATIONAL JOURNAL*

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PATRICE GILBERT

From the Editors

THIS ISN'T YOUR GRANDFATHER'S ECONOMY. We used to make stuff; now we shuffle paper (and electrons). The American economy keeps evolving in unpredictable ways. So what is it turning into? The third in a series of quarterly supplements jointly presented by *The Atlantic* and *National Journal* explores the future of U.S. manufacturing and white-collar services in a global marketplace. And the picture isn't as grim as you might guess.

Maybe the best place to start in trying to understand the economy's tectonic shifts is by examining the historical graphs on pp. 14-15, which show how U.S. manufacturing has collapsed—and been transformed—since World War II while white-collar services have gained preeminence. This analysis offers a useful context for the cover article, which asks: Is there a second act for American manufacturing? Bruce Stokes, who traveled to western Pennsylvania, finds that the next wave of manufacturing may bear a passing resemblance to the first. In place of the humongous steel mills left empty by foreign competition, specialty mills—smaller and smarter—are thriving, each surrounded by a cluster of businesses that form a sort of industrial ecosystem.

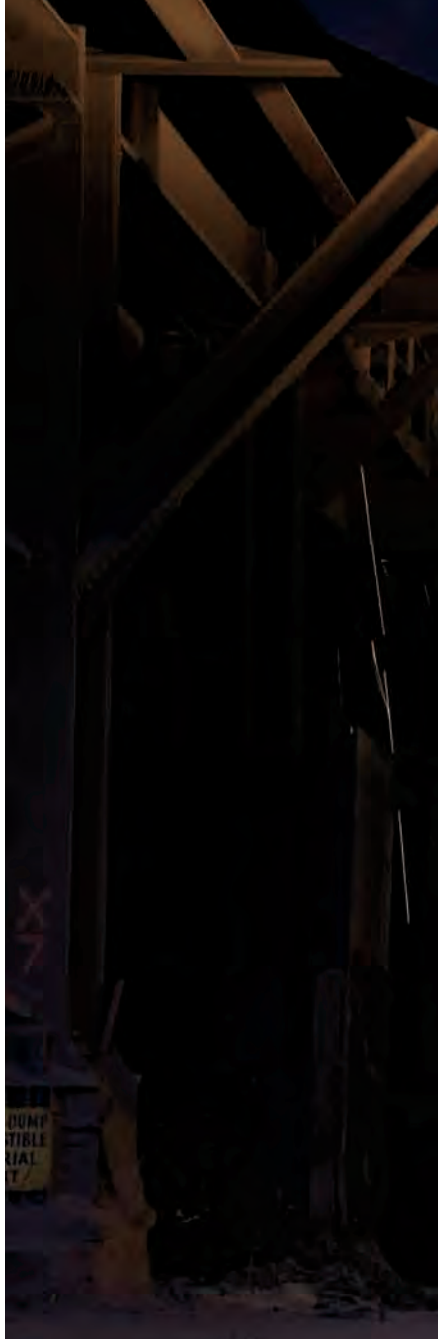
Where this future will happen may come as a surprise. Ronald Brownstein traces the geography of U.S. cities that manufacture goods for export and finds places that you might not expect. Derek Thompson looks at two domestic manufacturers—a biggie and a small fry—that have learned how to sell their wares abroad. The global marketplace, of course, trades more than manufactured goods. T.A. Frank delves into the success of U.S. white-collar businesses in selling their services overseas, whether by peddling financial advice or licensing Care Bears.

There are other reasons not to despair. On a personal level, Alina Tugend offers some pointers on finding a job that you'll like even if the economy zigs while you would rather zag. On the back page, James Fallows offers the most comfort of all, in describing the structural strengths that the U.S. economy continues to wield against its competitors. This is a resilient country, after all, and it has survived the jolt of economic transitions before. Why not again?

COVER: PATRICE GILBERT

Cover Story

SAY BYE-BYE TO THE LIKES *of River Rouge, and hello to smaller, smarter factories surrounded by industrial ecosystems that nourish innovation. But the next wave of manufacturing may require government's helping hand.*



Act II for American Manufacturing?

By BRUCE STOKES

LYNDORA, Pa.—Is American manufacturing dead? Those who think so point to manufacturing's plummeting share of the national economy as a predictor of its eventual demise. But they likely have never been to Butler County. Here, north of Pittsburgh, in the heart of western Pennsylvania, basic manufacturing still drives the local economy. It has survived around here—indeed, thrived—suggesting that America, too, has an industrial future.

Butler County's economy has long depended on making steel and fashioning it into precision tools, industries that most Americans think have largely fled overseas. To survive, companies here have successfully adapted, using flexible manufacturing techniques that marry computers with a skilled workforce to craft products for international markets. And in the wake of the worst economic downturn since the Great Depression, the unemployment rate in Butler County stood at just 6.8 percent in September, far lower than the national average.

The Obama administration's hopes for a second act for U.S. manufacturing center on high-tech, future-oriented products such as solar panels and biotechnology. There is reason to think these goods will play a big role. Their track record has been impressive, and their cutting-edge nature inspires public imagination. The wind-energy industry, for instance, is roughly a $20 billion business and is growing by leaps and bounds. Still, these technologies' contributions to the overall economy are statistically insignificant. Jobs in renewable energy, broadly defined (including wind, solar, and hydroelectricity), accounted for just 0.1 percent of total employment in the United States in 2007, according to Moody's Analytics. The makers of steel, aluminum, and other primary metals employed three times as many people.

"When it comes to new industries, it takes a while for them to grow," said Sophia Koropeckyj, a managing director at Moody's Analytics. So, for the foreseeable future, they'll be dwarfed in economic significance by existing manufacturing. Despite the near-disappearance of the American textile, apparel, and shoe industries, and the recent troubles of the auto industry, the United States remains—if tenuously so—the world's leading manufacturer, led by industries that rely more on technological precision and brainpower than on low-skilled labor—aircraft, sophisticated machinery, medical devices, and the like. But manufacturing's staying power is also thanks to old dogs, such as high-end steelmakers, that have learned new tricks.

An unlikely testing ground for the second act in American manufacturing is in western Pennsylvania, where the first act had its heyday. To the untrained eye, the two eras look much the same. Showers of sparks and unspeakable heat still mark the pouring of steel. But Andrew Carnegie would not recognize this steelmaking. To compete in an increasingly competitive world market, even traditional manufacturers must operate on the technological

■ To the untrained eye, the new-wave manufacturing at AK Steel's Lyndora plant looks a lot like the old.

frontier. In its Lyndora plant, AK Steel operates the world's fastest and most productive coating and final annealing process, which chemically aligns grains on the surface of electrical steel so that—when it is used in a transformer that generates electricity—the electrons pass over it more quickly.

This is the future of American manufacturing, according to Sherle Schwenninger, who directs the economic growth program at the New America Foundation in Washington. "We need a broad-based manufacturing economy to provide jobs in the United States," he said. And it can be done, he believes, because America's competitive advantage in the world market lies in "sophisticated and higher-value-added, fundamental manufacturing—things such as earth-moving equipment and safer mining and drilling technologies—that can meet the needs of emerging economies."

"This is manufacturing's moment," said John Engler, president of the National Association of Manufacturers, "precisely the right time for manufacturing to have a comeback." A broad-based manufacturing economy, however, may well depend on the right policy environment: lower taxes, smart regulation, a weaker dollar, better training for workers, and the preservation of local industrial clusters of large and small firms that feed off one another. That, in turn, requires the public's recognition that manufacturing has a meaningful role to play in America's future and a government-guided plan to make it happen. "Without a plan," warned Leo Gerard, president of United Steelworkers International, "American manufacturing will continue to atrophy."

SECRET TO SURVIVAL

The departures from the first act in American manufacturing may be more than technological. The geography will change, as will its configuration. Huge facilities with tens of thousands of workers are out. Factories won't look like the gigantic River

PATRICE GILBERT

Rouge auto-making complex that Henry Ford built in Dearborn, Mich., in the 1920s. Compact plants surrounded by clusters of small firms that service them will likely populate tomorrow's manufacturing landscape. Many of the factories will be in the South, where lower wages may help establish a new industrial heartland.

Manufacturing can also survive in the Rust Belt. AK Steel, for example, isn't merely surviving; it's flourishing. With more than 1,300 employees, it is Butler County's largest industrial employer. The company specializes in producing electrical steel (used in power transmission and distribution) and exports half of that. AK Steel is in the midst of a $135 million capital-expansion program, replacing three 1960s-era furnaces with a single, technologically advanced furnace. This will increase the plant's production capacity by 40 percent while improving productivity and quality. It will also give AK Steel the flexibility to make various steels, depending on customer demand.

PATRICE GILBERT

Technologically advanced steelmaking has sustained western Pennsylvania's economy.

A few miles away, in downtown Butler, Wise Machine is helping AK Steel become more productive. Workers at Wise are adapting one of AK Steel's continuous casters to resolve routine maintenance problems in hours, rather than days. Wise's two-dozen workers are traditional machinists who may soon be outfitted with iPads to boost their productivity.

In the nearby town of Cabot, Pa., more than 500 machinists at Penn United Technologies turn out a variety of precision parts, some for instruments used by orthopedic surgeons, others for the armature that reads computer hard drives. Thanks to automation, one person—instead of four—now operates four machines that load, monitor, and spot-check the quality of each machine tool to produce more widgets, with no defects, for customers worldwide.

The secret to Butler County's manufacturing success is not only a willingness to adapt but also the presence of an industrial ecosystem of sorts: a local network of companies and resources that help one another survive. At its core is AK Steel, which stayed in business while countless other steel mills in the Rust Belt succumbed to foreign competition. As a result, smaller businesses—such as Wise—that build parts and perform repairs for AK Steel have also survived. These companies are hothouses of innovation, spawning entrepreneurs who spin off to form their own firms. This, in turn, has preserved a skilled, local workforce.

Industrial ecosystems are important both in preserving traditional manufacturing and in developing cutting-edge, renewable-energy technologies, such as solar and wind. "Renewables have the benefit of being the new kid on the block," said Bruce Sohn, president of First Solar in Tempe, Ariz., the world's largest manufacturer of thin-film solar modules. "But finding the ability to compete and manufacture in the United States will be an ongoing challenge even for us, unless we make significant changes in our public policy."

NO. 1, BUT …

Measured as an engine for employment or as a chunk of the economy, American manufacturing has been retreating for two generations. The economy has shifted steadily from generating wealth by making things to counting on finance, insurance, real estate, and other white-collar activities to fuel growth. In 1947, manufacturing accounted for more than 25 percent of the nation's gross domestic product, while finance, insurance, and real estate produced less than 11 percent. *(See graphs on p. 14.)* By 2009, manufacturing had shrunk to 11 percent of the economy, while those other activities' share had doubled to 21 percent.

Moreover, the profile of American manufacturing has been transformed. Labor-intensive, low-value-added production has all but disappeared. The textile, leather, and apparel industries, which in 1977 accounted for nearly 7 percent of all manufacturing activity, shrank to less than 2 percent by 2008.

Increasingly, U.S. manufacturers have focused on producing capital-intensive goods: computers, electronic products, chemicals, and, soon, energy technologies. "The nuclear business has come alive again," said Eric Garrard, president of Wise Machine, whose shop is making coils for a nuclear reactor. "[It] may be the saving grace for a lot of the manufacturing firms."

But the new American manufacturing sector employs far fewer workers. Only 11 million people now make things in the United States, the lowest number since World War II.

Before the recent recession, however, the value of U.S. manufacturing output had reached an all-time high. The United States still hosts the world's mightiest manufacturing economy, producing 21 percent of all goods made globally. Japan is a distant second, at 13 percent. China, at 12 percent, ranks third.

The reason that the United States has remained the world's manufacturing leader while in relative decline is, in a word, productivity. U.S. manufacturers are the most efficient in the world. AK Steel, for instance, produces more steel today than in the 1970s, with a third of the workforce. This productivity has also helped fuel the rest of the economy. For every dollar that manufacturers spend directly, they foster another $1.40 in economic activity—a multiplier larger than for any other sector.

Manufacturing remains critical to American economic success. Exports of goods account for three-fifths of all U.S. sales abroad, paying the bill for imports of consumer products and oil. Without them, the U.S. trade deficit—at record levels before the recession—would be even worse.

Despite the recent boom in exports of goods, the nation's share of the world's manufacturing trade has been shrinking. China is predicted to overtake the United States next year as the world's leading producer of manufactured items measured by value. And the future looks bleak. From 1989 to 2001, the United States recorded a trade surplus in advanced-technology

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The STANDUP Act is the Safe Teen And Novice Driver Uniform Protection Act (H.R. 1895, S. 3269). Source: Insurance Institute for Highway Safety Fatality Facts 2008.

products, including biotech. Those are the same capital-intensive goods that economists have long argued would naturally be Americans' domain, as the production of labor-intensive wares, such as apparel, moved overseas. Since 2002, however, the U.S. has run a deficit in advanced-technology trade.

Other hindrances may lie ahead. Workers can produce only as much as their plant and equipment permit, and until recently, U.S. industrial production capacity had grown robustly—through good times and bad. In the past decade, however, companies have shown a reluctance to invest in new capacity, which has grown at a third of its 1990s pace. When the economy eventually rebounds, this may limit U.S. manufacturers in satisfying domestic and foreign demand.

Manufacturers are also an important source of innovation, accounting for more than two-thirds of all research and development conducted in the United States. Since 1999, however, American manufacturers have increased their research-and-development investments outside the United States three times as fast as at home.

Manufacturing wages also bolster the economy. Manufacturing workers get higher pay and more generous benefits—20 percent higher in 2007—than Americans in nonmanufacturing jobs, although wages have recently been growing slowly, if at all.

"If you give up on manufacturing," New America's Schweninger cautioned, "you give up lots of future productivity gains—and gains in the standard of living."

HOW TO INNOVATE

The conventional wisdom is that the United States can thrive simply as a place for research and development—that the country no longer needs to actually make things. But this assumes that new products spring full-blown from the minds of laboratory scientists. The reality is that in most industries, the manufacturing process itself is a critical factor in developing radically new products.

In Butler County, the presence of multiple manufacturers has been self-reinforcing. "People don't understand how much manufacturers feed off each other," said Diane Sheets, the business-development manager of the Butler County Community Development Corp. That symbiotic relationship is vital, she said, in prompting innovation and an entrepreneurial spirit.

For one thing, creating and sustaining a network of competitive manufacturing entails day-to-day interaction between suppliers and customers, which allows each to learn from the

How to Succeed in Exports ...

By Derek Thompson

THERE WAS NO WAY that Mark Rice could have known that the next e-mail he opened would change his business and his life. It was 2003, and somehow the world's largest shipbuilder (based in South Korea) had discovered Rice's small ship-manufacturing firm (based in South Baltimore) over the Internet. Hyundai Heavy Industries wanted his 30-person company—Maritime Applied Physics Corp., or MAPC for short—to build a specialized rudder that would instantly double his business.

Rice was honored. He was also, by his own admission, "wandering around in the dark trying to find trees." He didn't understand international business customs when he arrived in Korea on a typhoon-delayed flight. When he prepared the bid, Rice didn't understand licensing rules and inadvertently violated U.S. export law. Then, with the deal nearly complete, his bank said that the project was too risky and demanded that the company immediately repay its credit line.

Even with the best rudder in the world, MAPC still faced daunting hurdles that nearly killed the multimillion-dollar deal. Once you understand where Rice went wrong—at the bidding level, the finance level, and the export-control level—you also begin to understand some of the barriers that U.S. exporters face. The nation's trade challenge is not merely an issue of high domestic wages and voracious American consumers—although those matter, too. It is a question of commercial culture. The United States exports less than Germany while it manufactures more. The U.S. government offers less financial support for exports than Canada's does, despite greater exports of goods. And Washington applies byzantine rules to monitor specialized products, even though the nation's competitive edge lies precisely in those specialized wares that only Americans have designed and built.

AN UNDERDOG OVERCOMES

The obstacle course for exports looks daunting for small, inexperienced companies such as MAPC, but it isn't prohibitive. Rice ultimately found a bank, secured financing, won the bid, and doubled his business.

The Korean deal changed MAPC. It also changed Mark Rice. He became passionate about overseas trade and the promise it held for other small firms around Baltimore. With the help of Bill Burwell at the Commerce Department's Export Assistance Center, he designed a seminar to teach tech-savvy companies to follow in his footsteps—without mimicking his mistakes.

"Mark had the intellectual foresight to see a teaching opportunity," said Burwell, director of the center's Baltimore office. "Based on his experience, he helped us craft the first offering of ExporTech," a three-day seminar for executives on how to write an export business plan. In Maryland, it was an instant hit. Today, ExporTech has been replicated in at least 19 states and has assisted more than 300 clients. Even the federal government took notice, authorizing $11 million for the program in small-business legislation enacted in September.

"We made every mistake you could make in Korea, and we didn't want other companies to do the same," Rice explained in his office by a wind-whipped Baltimore pier that once bustled with shipbuilders. "I guess we succeeded because we were naive."

"But we were successful," interjected Jim Chafe, MAPC vice president.

other. "The knowledge underlying emerging technologies requires person-to-person contact among manufacturing industries and between manufacturing and services," said Gregory Tassey, a senior economist at the National Institute of Standards and Technology. That interaction is harder when a company's supply chain stretches around the world.

New manufacturers also rarely emerge in a vacuum. They typically morph from existing businesses, when coworkers who think they can build a better gadget than their current employer go out on their own. In the 1970s, the founders of Penn United did just that, spinning off from Oberg Industries, another precision-tool firm down the road. This was history repeating itself: Oberg Industries, too, got its start when its founder left a larger local company in the late 1940s. If U.S. manufacturers move abroad, foreign entrepreneurs create these start-ups.

Consider what happened when the U.S.-based manufacturing of semiconductors and flat-panel displays for computers and televisions moved to China more than a decade ago, as Harvard Business School professors Gary Pisano and Willy Shih have recounted. At first, American economists saw no cause for concern, arguing that these weren't part of the core manufacturing capability that the United States needed. The experience that the Chinese gained in making computer chips and screens, however, taught them how to process ultrapure, crystalline silicon into wafers and to apply thin films of the silicon onto large glass sheets. By so doing, they created a solar panel industry that has become a major international player.

"The United States cannot continue to rely on outdated economic-growth strategies that fail to understand the complexity of industrial technology and the synergies among supply chains," economist Tassey said.

MEANS OF REVIVAL

During the past couple of years, a national preoccupation with Wall Street's meltdown and the ensuing recession has crowded out any serious debate about how to revive American manufacturing. So has the customary aversion to government-directed industrial policy, often demeaned as "picking winners and losers."

These attitudes, however, may be changing. Despite the distrust of government that Americans displayed in the November congressional elections, four of five Americans support a national manufacturing strategy, according to a poll that the Alliance for

(Continued on p. 12)

... By Really, Really Trying

"That's the difference between naiveté and gumption."

HEAVY INDUSTRY, HEAVY RULES

A company that won't need help from ExporTech is Bucyrus International, a mining-equipment manufacturer in South Milwaukee, Wis. A century after producing three out of every four of the steam shovels used to build the Panama Canal, the *Fortune* 700 company has become one of the world's largest designers and builders of 30-foot, 500,000-pound steel contraptions that dig into the earth.

It's boom times for international mining, now that the world's fastest-growing countries—Brazil, China, India, Indonesia—are simultaneously experiencing urban industrial revolutions. "You have billions of people demanding not only new buildings and cars, but new water heaters, cell phones, and air-conditioner units," Bucyrus CEO Tim Sullivan said. "To make these things, you need iron ore, manganese, coking coal, copper." Bucyrus makes the machines that unearth those commodities.

Once a purely domestic juggernaut, Bucyrus is doing a flourishing business overseas. Like MAPC, it faced challenges that showcase the ways U.S. export rules can work for and against American companies. Last summer, Bucyrus reached out to the Export-Import Bank, a federal agency that helps to finance overseas sales for U.S. companies. Ex-Im Bank objected to Bucyrus's $600 million deal to sell equipment to a power plant in India on the grounds that it violated the agency's strict environmental standards. The decision caused a to-do at Bucyrus, until all-night negotiations and pressure from Congress persuaded the bank to accede.

However, with mining bids pending in India and South Africa, Bucyrus is still at the mercy of the agency's environmental standards and its slow processing of loan applications.

"I have no problem with establishing environmental benchmarks in lending policies, but those policies should not disenfranchise U.S. manufacturers," Sullivan said. "I don't know the internal mechanics of [Ex-Im Bank's] underwriting process, but it takes them two to three times longer to process loan applications in comparison to their foreign competition." The wait, he said, can take up to six months.

BANKING ON EXPORTS

That's not just bitterness talking. A wide range of experts, from business executives to think-tank analysts, say the same thing: Ex-Im needs to do more, faster. Frank Vargo, a vice president at the National Association of Manufacturers, noted that the agency guaranteed $21 billion of U.S. exports in 2009, a fraction of its Canadian counterpart's $80 billion in a smaller economy. "The Japanese," he said, "did well over $100 billion."

Ex-Im Bank's role is crucial in lending money to importers overseas and in helping firms on both ends of the deal secure cheaper loans. Charles Tansey, senior vice president at Ex-Im Bank, acknowledged that the agency's limited staff hurts its ability to process applications quickly. Caution is also necessary, he said, to protect American taxpayers from heavy losses. Still, more government-backed financing would mean more U.S.-made goods sold overseas.

"We need the financing process to be quicker," Bucyrus's Sullivan said. "It's this simple. We need to be faster too if we want to be more competitive."

The author is an associate editor at The Atlantic.

By Ronald Brownstein

It's probably no surprise that Seattle and its surrounding cities have developed an innovative and comprehensive program to encourage local businesses to increase their exports. After all, Seattle is coastal and cosmopolitan, Asia-facing and technology-embracing, home to world-girdling brands such as Microsoft, Boeing, and Starbucks. The tradition of trading abroad is as deep as the city's spectacular port.

It's a bit more unexpected to find northeast Ohio pursuing opportunities in Europe, Asia, and the developing world. In popular imagination, Cleveland and nearby cities such as Youngstown are victims of globalization stranded in a blasted Bruce Springsteenesque landscape of deserted steel mills and rusted cars. In all of these communities, the scars of America's manufacturing decline are etched in lost jobs and abandoned factories—hulking relics of the nation's industrial might that are now, as Springsteen recorded in his piercing ode to Youngstown, "just scrap and rubble."

Yet from that stony ground, renewal is sprouting. Companies that produce cutting-edge medical devices, thin-film polymers for display monitors, sophisticated heat-trapping components critical to cell phones, and dozens of other advanced products are expanding production across northeastern Ohio, hiring workers—and selling to markets around the world. "There is this pervasive sense that globalization hasn't been good to us," said Brad Whitehead, president of the Fund for Our Economic Future, a Cleveland-based nonprofit that underwrites economic development work. "But perception has not caught up to the fact that the industrial Midwest can be, and increasingly is, competitive in global markets."

Overall, the United States still imports more than it exports, and the list of products that were formerly made in America remains daunting. Opinion polls show that the public is increasingly souring on free trade. But the familiar narrative of decline and retreat before a tide of low-cost imports doesn't capture the full ledger of America's place in the global economy. Exports now equal about 11 percent of total U.S. economic output, about double the level of 1970. And more cities are benefiting from that rising tide of foreign sales than most Americans recognize—often, even in those cities themselves. Access to international markets is already central to the prosperity of many places where protectionism is often a winning political argument.

The Brookings Institution, in an illuminating study last summer, found that exports already account for at least 10 percent of the total economic output in 58 of the 100 largest U.S. metropolitan areas. Across those 100 communities, the study found, exports provide for more than 8 percent of total employment—7.7 million jobs. Fully 40 metropolitan areas have increased their exports by at least 10 percent annually since 2003, after adjusting for inflation. President Obama has set the ambitious goal of doubling American exports over the next five years. But "we already are more export-oriented than we think we are," said Bruce Katz, director of Brookings' Metropolitan Policy Program, which conducted the study.

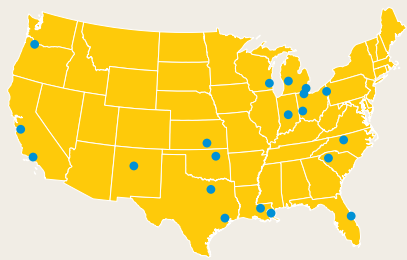
Perhaps the study's most striking conclusion was the breadth of export activity. The 20 cities that most rely on export-related jobs include, not surprisingly, San Jose, Calif., Seattle, and Portland, Ore.—Asia-oriented hubs of high-technology innovation filled with young professionals, bike paths, and coffee bars that offer options of Euclidean complexity. But the list also includes places where the morning coffee run is more likely to McDonald's or Dunkin' Donuts: Hartford, Conn.; Rochester, N.Y.; Milwaukee; Greensboro, N.C.; and Toledo and Youngstown in Ohio. Only San Jose (at 22.7 percent) generated a larger share of its employment from exports than did Wichita, Kan. (22.3 percent), where a vibrant global-sales network has developed around civil-aviation powers such as Cessna and Hawker Beechcraft.

Yet in many, if not most, American cities, the importance of exports to the local economy is a mystery, Katz said. "When the president gets up and says, 'Let's double exports,' many local

The Other Global Cities

The metropolitan areas where exports' share of total economic output is greatest are mostly inland, and their exports are growing.

Top metro areas by export intensity



Metro area	Export intensity*	Growth, 2003-08
Wichita, Kan.	28%	+112%
Portland, Ore.	21	+101
San Jose, Calif.	20	+27
Baton Rouge, La.	19	+83
New Orleans, La.	18	+101
Youngstown, Ohio	18	+40
Greensboro, N.C.	17	+35
Toledo, Ohio	16	+29
Indianapolis, Ind.	15	+30
Grand Rapids, Mich.	15	+12
Oxnard, Calif.	15	+39
Detroit, Mich.	15	0
Houston, Texas	15	+100
Greenville, S.C.	14	-11
Tulsa, Okla.	14	+78
Dayton, Ohio	14	+18
Milwaukee, Wis.	14	+36
Palm Bay, Fla.	14	+63
Dallas, Texas	13	+65
Albuquerque, N.M.	13	+27

*Exports as share of total metro economic output, 2008.
Source: Brookings Institution

Yet in many, if not most, American cities, the importance of exports to the local economy is a mystery, Katz said. "When the president gets up and says, 'Let's double exports,' many local government, civic, and economic officials don't see themselves in that narrative." Most cities, Katz said, still define economic development as building stadiums or attracting "10,000 people to live downtown." Few have constructed a strategy to create jobs by systematically encouraging their businesses to sell into the global market. Formulating such a plan, he lamented, "is an unnatural act in most American metros."

Bill Stafford agrees. For two decades, he has headed the Trade Development Alliance of Greater Seattle, a pathbreaking effort to expand the region's opportunities in the international economy. Over that period, he said, the alliance's efforts "have been copied more overseas almost than in the United States."

The Seattle trade alliance shows what cities and regions can do when they recognize that they are competing in a global race. Launched in 1991, it organizes an annual "study mission" to learn from the economic strategies of major cities around the world (recent targets have included Abu Dhabi, in the United Arab Emirates; Helsinki, Finland; and Melbourne, Australia) as well as an annual trade mission that pursues market opportunities in such countries as China, India, Taiwan, and Vietnam. It assembles delegations that combine representatives of smaller companies and executives from Microsoft, Boeing, and other titans. "We use the big guys to open doors," Stafford said unapologetically.

At home, the alliance has organized workshops that provide technical assistance on every aspect of exporting, built a database that allows foreign economic officials to find local suppliers, and systematically marketed Washington state colleges and universities to foreign students—partly in the hope of attracting future entrepreneurs who will start local businesses. "It's an integrated approach," Stafford said. "The game is played so differently around the world. This country and, for that matter, our state and our region have been able to ignore [that]. We've been smug."

GETTY IMAGES/RON WURZER

Seattle's deep, profitable port.

Smugness isn't a problem in northeast Ohio. Since the 1970s, the region has been battered by plant closings and population decline. Youngstown has lost about a quarter of its residents just since 1990. The region's challenges today remain formidable: In Youngstown's Mahoning County, unemployment approaches 11 percent.

But the city and the region no longer feel that they are in free fall. Local governments and nonprofit organizations have developed an array of programs to nurture new manufacturing firms, and amid all the challenges of the Great Recession, those efforts are producing green shoots. "We have a growing segment of advanced-technology companies," said Jay Williams, Youngstown's dynamic young black mayor. "These are all fairly small, not the steel mills of the old days with thousands of employees, but they are skilled and are seeing growth even in this economy." Central to that growth strategy, Williams said, is "expanding into exports and other markets."

Nationally, Brookings reports, only about one in every 100 U.S. businesses exports to foreign markets. As part of the strategy to promote export growth, northeast Ohio has systematically worked to broaden that circle. "The really interesting piece of this is how the exporting economy is becoming increasingly critical to the midsized manufacturers and even many of the startups," said Cleveland's Whitehead. "Companies are going into foreign markets earlier and as a more fundamental part of their strategy than they might have a decade ago."

One program helping Ohio companies take that leap is the Manufacturing Advocacy and Growth Network. For five years, it has operated a global-services program that provides practical guidance to businesses on how to enter foreign markets; just since July, about 500 companies have attended its programs. Dan Berry, MAGNET's president, said that the group is further expanding its assistance for small and midsized enterprises because all manufacturers will need "some level of competency working with international markets looking ahead."

Far too few urban officials are moving as systematically to help local businesses crack foreign markets and overcome obstacles that range from language barriers to intellectual-property theft. Brookings's Katz argued that the United States is unlikely to double its exports unless cities and counties set goals of their own—and establish concrete plans to meet them. "This really is a challenge to the current generation of city and metro officials to up their game," he said.

Stafford, in Seattle, similarly argues that the United States needs the equivalent of a "political campaign" to focus local officials and business executives on both the opportunity and imperative of selling more to nations whose economies are growing faster than ours. "It's going to take a major effort to get this country to look at exports and international competitiveness as a major thing we're going to need to do," Stafford said. "We're probably going to keep grinding along at 1 to 2 percent growth if we don't start exporting."

The author is the editorial director of National Journal. NJ researcher Scott Bland contributed to this report.

(Continued from p. 9)

American Manufacturing conducted last spring. Proponents of a government-led strategy say that it needs to be comprehensive, with tax cuts, helpful regulations, and interrelated efforts to preserve and rebuild core industries, the small companies that cluster around them, and their skilled managers and workers.

So far, the specter of such a strategy hasn't raised the tea party's hackles or provoked a political furor over government's proper role. Indeed, political antagonists have found points of agreement. Recommendations issued in November by a bipartisan budget commission suggest growing sentiment that the corporate tax rate—among the highest in the world—ought to be reduced to encourage companies to base their operations in the United States.

R&D alone won't assure a future for **American manufacturing.**

Similarly, Democrats as well as Republicans support a tax credit for research and development, which lapsed a year ago for the 14th time in the past three decades. The United States accounts for about a third of the world's R&D spending, far more than the second-place Europeans. Still, relative to the size of its economy, America's spending on research and development ranks eighth among major industrial economies.

But R&D isn't enough. "An R&D policy should not be confused with a manufacturing policy," First Solar's Sohn warned. "The worst thing would be for us to tap into the ingenuity of our engineers and come up with products and manufacturing processes, and then go and put [them] overseas because that is the only place that it makes sense to make things."

Manufacturers gravitate to societies that show they want them, said Sohn, whose company operates factories in Germany, Malaysia, and Perrysburg, Ohio. "We were attracted to Malaysia," he noted, "because of their focus on manufacturing. It starts with a tone in the country. Politicians and businessmen there have acknowledged the utility and value of having manufacturing as a base, and they have established a set of policies that were attractive," including lowering taxes and providing access to low-cost capital.

Subsidies can dry up, of course, and tax benefits can be withdrawn. Manufacturers also look for stable—preferably growing—domestic demand. That's one reason First Solar built a factory in Germany and is expanding it. German utilities are required to buy electricity produced by consumers' roof-top solar panels at a price set high enough to enable them to pay for its installation. Giving every consumer a chance to earn money as an electricity producer has sent German demand for solar panels skyrocketing.

A vibrant American market for manufactured goods will be harder to achieve, given the likelihood of continual slow growth. The 2009 economic-stimulus package sought to encourage the market by requiring that projects it funded include substantial U.S.-made content. Many economists and foreign governments decried the provision as inefficient and jingoistic. Yet it enabled United Streetcar in Clackamas, Ore., to begin the first production of streetcars in America in more than half a century. "The buy-America provision took the risk factor out, so we could make the start-up investment," said Chandra Brown, United Streetcar's president.

Foreigners, too, can be lured into making in the United States more of what they sell to Americans and to the rest of the world. Because of the recent decline in the dollar and the slow growth in American wages, it's become cheaper in many cases to manufacture in the United States than in Germany or Japan. As a result, Volkswagen is building a plant in Tennessee, and BMW's factory in South Carolina has become the largest exporter of U.S.-built cars. The federal government might also attract and keep manufacturers by matching the investment subsidies and tax breaks that China and Singapore offer.

Lowering the value of the dollar would preserve and expand the U.S. manufacturing base by making homemade goods a better buy for Americans and foreigners. The dollar is estimated to be overvalued against the Chinese renminbi by at least 20 percent. Reducing that to zero, according to the Peterson Institute for International Economics in Washington, would create about a half-million well-paying American jobs, mainly in manufacturing.

THE SKILL, THE DESIRE

But something more is needed to assure a vibrant future for American manufacturing: a skilled workforce. That's a scarce commodity these days, even in Butler County. "Every kid who grows up here wants to go to college and work on Wall Street," said Wise Machine's Garrard, "not follow their fathers into AK Steel."

Butler High School has a highly regarded vocational education program that teaches the latest in manufacturing techniques. Almost all of its graduates find jobs. But there are only 43 participants—more students choose training to become beauticians than machinists. "If we want to replicate the highly skilled German workforce," said Scott Paul, executive director of the Alliance for American Manufacturing, "we need a seamless four-year program that starts in high school and goes through community college or technical schools that prepare students for manufacturing jobs."

That proposal costs money. Butler County Community College conducts extensive training programs for local manufacturers, but demand is down, partly because of cuts in the state funding that picked up much of the cost. Nationally, only 0.17 percent of America's GDP is invested in worker training. Germany spends nearly five times as much.

If skills are an obstacle, more money can help. But if it's desire that's lacking, all bets are off. In the past few decades, as manufacturing's share of the American economy and workforce has slipped precipitously, the perception has grown that U.S. manufacturing has no future. No doubt this has contributed, in turn, to the Butler County youths' tepid desire to pursue a manufacturing career.

Yet in Butler County, where the surviving manufacturers are showing some spunk, these fears seem premature. "There will always be a manufacturing sector in the United States—there has to be one," said Frank Vargo, NAM's vice president for international economic affairs. "The question is what kind of manufacturing. And that is a matter for policymakers to shape."

In any event, there is reason to hope. "The future is still in our hands," said Kent Hughes, director of the program on America and the global economy at the Woodrow Wilson International Center for Scholars in Washington, "if we don't sit on them." ■

The author, a senior fellow at the German Marshall Fund, is a contributing editor to National Journal.

Every day an average of 11 teens die in car crashes.
On July 25, 2009, Eric Okerblom was one of them.

Pass the STANDUP Act now (H.R. 1895, S. 3269). Visit facebook.com/save11.

save11
BACK THE STANDUP ACT

Allstate.

The STANDUP Act is the Safe Teen And Novice Driver Uniform Protection Act (H.R. 1895, S. 3269). Source: Insurance Institute for Highway Safety Fatality Facts 2008.

The Big Picture

From Factories to Cubicles

An American economy that used to be built on making stuff is now built on shuffling paper instead. From 1947 to 2009, manufacturing shrank from more than a quarter of the gross domestic product to just a ninth of it. Meanwhile, white-collar work grew from less than a fifth of GDP to nearly half of it (counting finance, insurance, real estate, professional and business services, information, education, and health care).

Government's hand has barely grown heavier. The share of GDP accounted for by government at all levels peaked at 15.3 percent in 1971, though it's been growing slowly again since 2006.

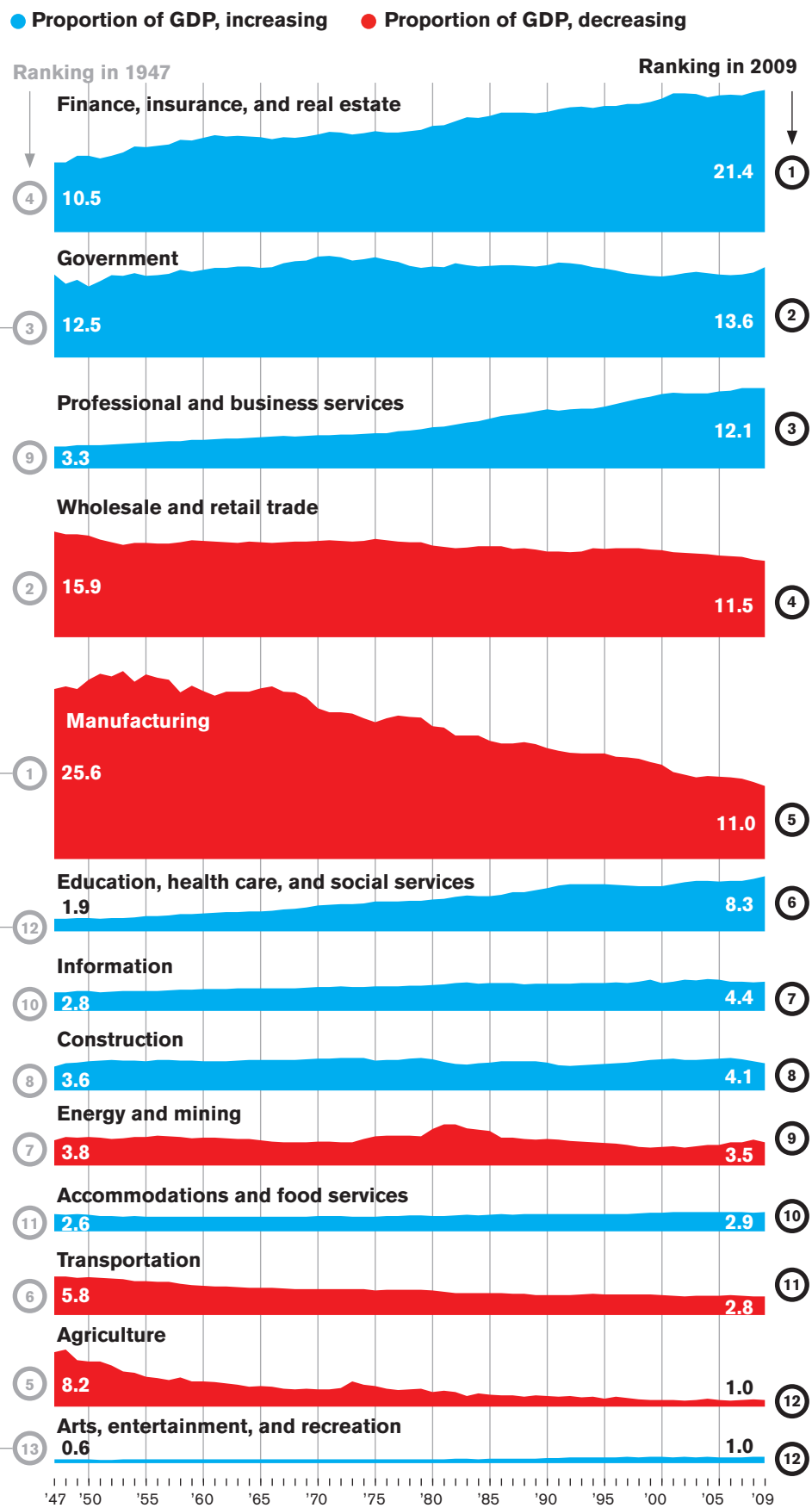
Manufacturing's role in the economy crested in 1953, when factories contributed 28.3 percent of GDP. Since 1977, its share has declined every year except 1988 and 2004.

Education's share of the economy has nearly quadrupled (to 1.1 percent). **Health care and social services**' share has nearly quintupled (to 7.3 percent) as a proportion of GDP.

Arts, entertainment, and recreation began a slow-though-steady rise during a former Screen Actors Guild president's presidency, but have stagnated at about 1 percent of GDP since the mid-1990s.

Value Added to the U.S. Economy by Industry

(Percentage of total gross domestic product, 1947 to 2009)



Graphic by BRIAN McGILL
Research by PETER BELL
Sources: Bureau of Economic Analysis; Bureau of Labor Statistics

Gains

Plastics and rubber products **4.3** (3.7)

Printing **2.6** (2.3)

Machinery **7.8** (10.6)

Fabricated metal (bolts, beams) **7.8** (8.8)

Planes, trains, and motorcycles **6.0** (4.6)

Miscellaneous **4.3** (2.3)

Food, beverage, and tobacco **11.2** (11.1)

Chemical products **12.9** (9.3)

Losses

Motor vehicles **5.2** (9.3)

Paper products **3.4** (4.2)

Primary metals **3.4** (7.4)

Electrical equipment and appliances **2.6** (4.2)

Nonmetallic mineral products **2.6** (3.2)

Furniture **1.7** (1.9)

Wood products **1.7** (2.3)

'Made in America'

As the U.S. manufacturing base has shrunk, its mix has shifted. Electronics and petrochemicals are playing an ever-larger role, while the old reliables—metals, wood, and motor vehicles—have collapsed. The domestic textile and apparel industries are zombies. In 2008, 98.7 percent of footwear sold in the United States was made abroad, mostly in China.

Subsector's percentage of overall manufacturing in 2008 → **2.6** (4.2) ← Subsector's percentage of overall manufacturing in 1977

Biggest Gains

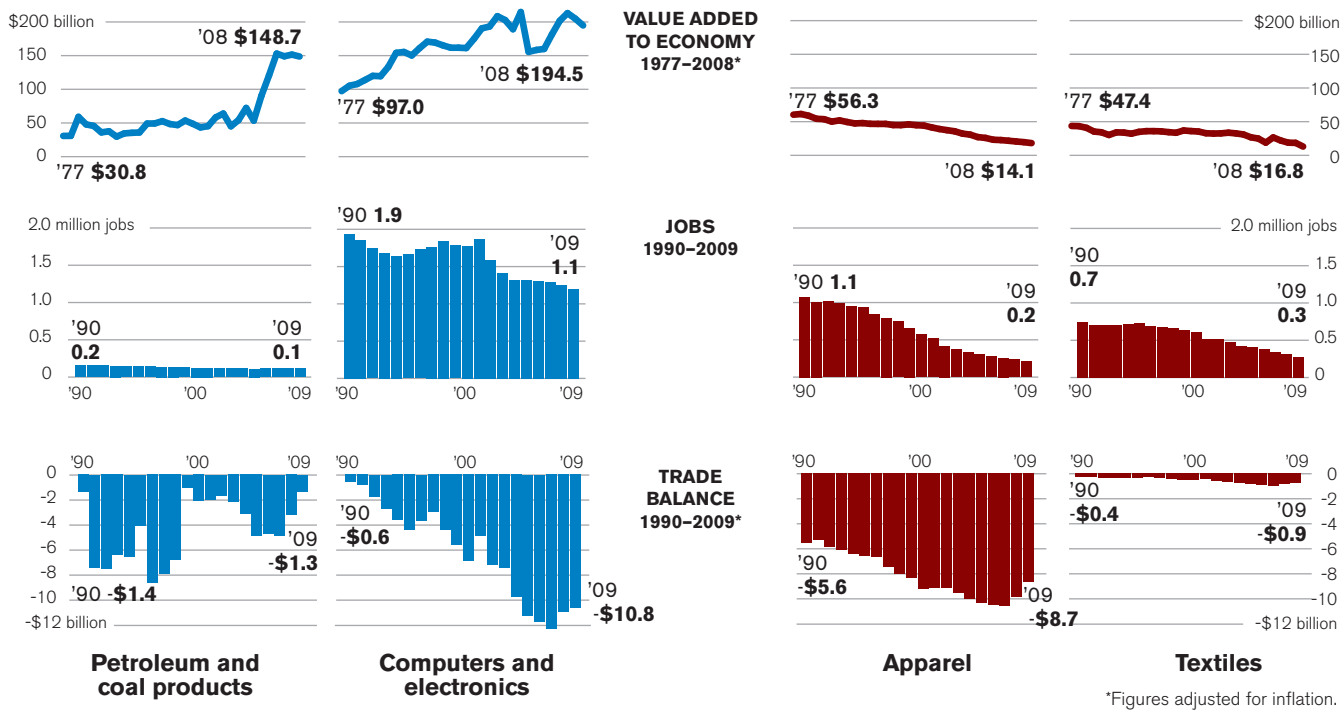
Petroleum and coal products **8.6** (1.9)

Computers and electronics **12.1** (6.5)

Biggest Losses

Apparel **0.9** (3.7)

Textiles **0.9** (3.2)



*Figures adjusted for inflation.

Essay

MARK HARMEL

Architect Scott Johnson: His firm's exportable brainwork includes plans for a mixed-use tower in Osaka, Japan.

White-Collar Outgo

Don't worry about those call centers in India. The United States is hawking more white-collar services to foreigners than they're snatching from us. For now.

By T.A. FRANK

LOS ANGELES—Scott Johnson, cofounder of the firm Johnson Fain, is a trim gentleman who sports a white plastic wristwatch and eyewear with oversized clear frames. His company employs 50 workers in a former Chrysler showroom just north of Chinatown, an upmarket presence in a neighborhood where nearby garment factories still scrape by on quick-turnaround sewing and embroidery jobs.

Johnson Fain contributes to the construction of objects as gigantic as office towers in China, but what the company sells isn't so tangible. "We are purveyors of intellectual content," Johnson said of his architectural firm. "We don't build the buildings; we don't supply the nails or the concrete. People make buildings from our drawings."

In an airy workroom where young architects labor amid miniature cityscapes and building models, Johnson examined a small replica of central Dallas and then moved on to rows of glossy printouts affixed to a wall. "This

is some of our presentation in Taipei last week," he said, pointing to five versions of a pair of 45-story residential towers slated for construction in Taichung, a city in central Taiwan. "This building is like a kind of jewel—it's faceted," he explained, singling out one version. "This is actually the one we're proposing and studying. It would have a beveled-glass system, and it would reflect light."

Johnson Fain has worked with international clients for more than 20 years, outrunning a succession of economic upheavals: the collapse of Japan's property market in the early 1990s; the Asian financial crisis of 1997; and the continuing housing slump in the United States. But the firm's expansion abroad has been steady. When it won a commission to draw up a master plan for the central business district of Beijing 10 years ago, an estimated 6 percent of its revenue came from work overseas. Today, thanks to an expansion of international business—especially in China—the proportion has quadrupled to about 25 percent.

The architectural firm's business is the archetype of white-collar service: brainwork that can fetch a high price from customers both at home and abroad. If more U.S. companies resembled Johnson Fain, the service-economy dream—in which globalization enriches us all so that fancier and nicer workplaces can replace the U.S. tube-sock mills already lost to lower-wage countries—might come true. It's a vision that would also help the nation meet President Obama's stated goal of doubling U.S. exports over the next five years.

But how realistic is this vision?

Undeniably, the United States has been losing countless jobs to other countries—notably, to China and India—not only in manufacturing but increasingly in the service sector as well. Precise estimates of outsourced service jobs are hard to come by (unlike goods, services don't pass through a physical port of entry), but experts figure that a few million have left American shores for cheaper locations. And no wonder. In India, call-center employees and software programmers cost, at most, half as much to hire.

However, we still sell more services abroad than we import, thanks largely to U.S. exports of higher-end, white-collar services. The balance of trade in manufacturing has been awful for decades; last year, the United States imported $507 billion more in goods than it sold abroad. For services, the opposite is true; the U.S. trade surplus is well in the black—and growing.

According to the Commerce Department's Bureau of Economic Analysis, the United States exported $132 billion more in services than it imported in 2009, up from $80 billion in 2006. Judging by the first half of 2010, the United States will record its largest surplus ever this year, exceeding $140 billion. Most of this surplus is presumed to be in high-end, white-collar services—knowledge-based, easily portable brainwork (architectural blueprints, for instance) rather than fixed-location handiwork (such as computer repair or massage therapy). In the upper echelons of the service sector, the future looks especially agreeable.

WHAT FOREIGNERS WANT

These trends have left many trade enthusiasts bullish. "Exporting high-end services is definitely one of our comparative advantages, and it's a part of our export mix that has unlimited upside," said Dan Griswold, director of trade-policy studies at the libertarian Cato Institute. "As the global middle class grows, their appetite for U.S. services is just going to grow and grow."

To anticipate what foreign customers may want, it's useful to look at what they've bought so far. In 2009, travel ($94 billion) and passenger fares ($26 billion) accounted for a quarter of this country's service exports. Not all of that was white-collar, given the many low-skill services that tourists require. Still, this inflow can be expected to continue as long as the dollar remains weak—say, whenever a Belgian flies to Seattle on Delta, stays at a Marriott, buys breakfast at the Pike Place Market, and flies home.

Customers abroad also paid a tidy sum (about $90 billion, nearly a fifth of service exports) in U.S. royalties and license fees in 2009. Those fees paid to holders of American patents, trademarks, and copyrights enabled foreigners to watch our movies, use our inventions, and produce our pills.

Intellectual property comes in many forms. Some wouldn't consider the Care Bears, devised in the 1980s by American Greetings, a high-end service, but foreign license-holders of the franchise might disagree. Every time a Care Bear card is printed overseas or a stuffed Care Bear is manufactured, American Greetings makes money—more than $2.6 billion in global sales since 2001. And more than a third of the company's revenues come from overseas. That's why consumers in Japan

AFP/GETTY IMAGES/MIKE CLARKE

Citibank in Hong Kong: Bailed out at home, expanding abroad.

will soon be introduced to an Asian version of the Care Bear. That would be the Sweet Sakura Bear, which American Greetings describes as "a shy and modest bear that delivers a unique message created specially to reflect the values and symbols of Japan," among them the "importance of savoring and appreciating the splendor of every passing moment."

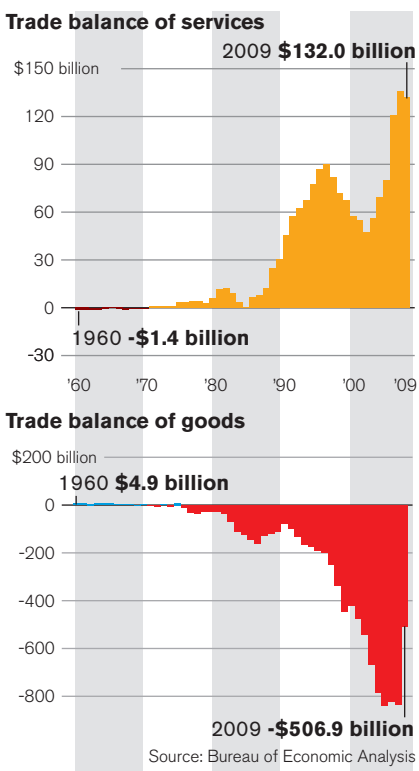
Meanwhile, the Johnson Fain architectural firm represents what the Commerce Department's statisticians classify as "other private services." The value of these services comes from brainpower honed over many years of study and experience in fields such as accounting, education, advertising, legal counsel, medical care, and telecommunications. Many of these services rank among the fastest-growing U.S. exports.

For all of its faults, American culture can be a selling point—all the more so if, say, a foreign entity is hoping to make Americans less angry about the flight of jobs overseas. That's why the Chinese government hired a subsidiary of a New York City-based advertising agency, DDB, to plan an advertising campaign called "Made in China. Made with the world." The result was a series of 30-second spots on cable television that featured, for example, a runner lacing up his sneakers and the catchphrase, "Made in China with American sports technology."

These "other private services" include one that has had its troubles of late: financial services. An industry that was exposed as having urged clients to buy toxic assets has nearly found forgiveness overseas. U.S. exports of financial services dipped from $61 billion in 2008 to $55 billion in 2009, but they are expected to rebound a little to $56 billion in 2010. Even bailed-out Wall Street investment banks are eagerly expanding into Asia, hoping to tap into the wealth of the developing continent's newly rich. Although American taxpayers still own a third of its stock, Citigroup has been hiring staff and expanding local branches in Hong Kong, India, and Singapore. Morgan Stanley has involved itself in bigger deals than any of its competitors as an adviser on mergers and acquisitions in Asia.

Hallelujah, Services!

The nation's trade balance has been negative—lopsidedly so—for decades because of the surge in imports of manufactured goods from overseas. In contrast, exports of U.S. services have been steadily rising, faster than domestic-based services have moved abroad. But the positive trade balance in services remains far too modest to offset the overall imbalance of trade.



Source: Bureau of Economic Analysis

EDUCATION ÜBER ALLES

Across this array of exportable white-collar services, a key to competitiveness has been the quality of American universities. "The majority of the world's top universities are in the United States," said Jonathan Rothwell, a senior research analyst at the Brookings Institution. When foreign students pay tuition to U.S. schools, the university educations themselves count as white-collar exports. And many of the graduates, Rothwell noted, start architectural, R&D, and engineering firms that are penetrating foreign markets and bolstering U.S. exports.

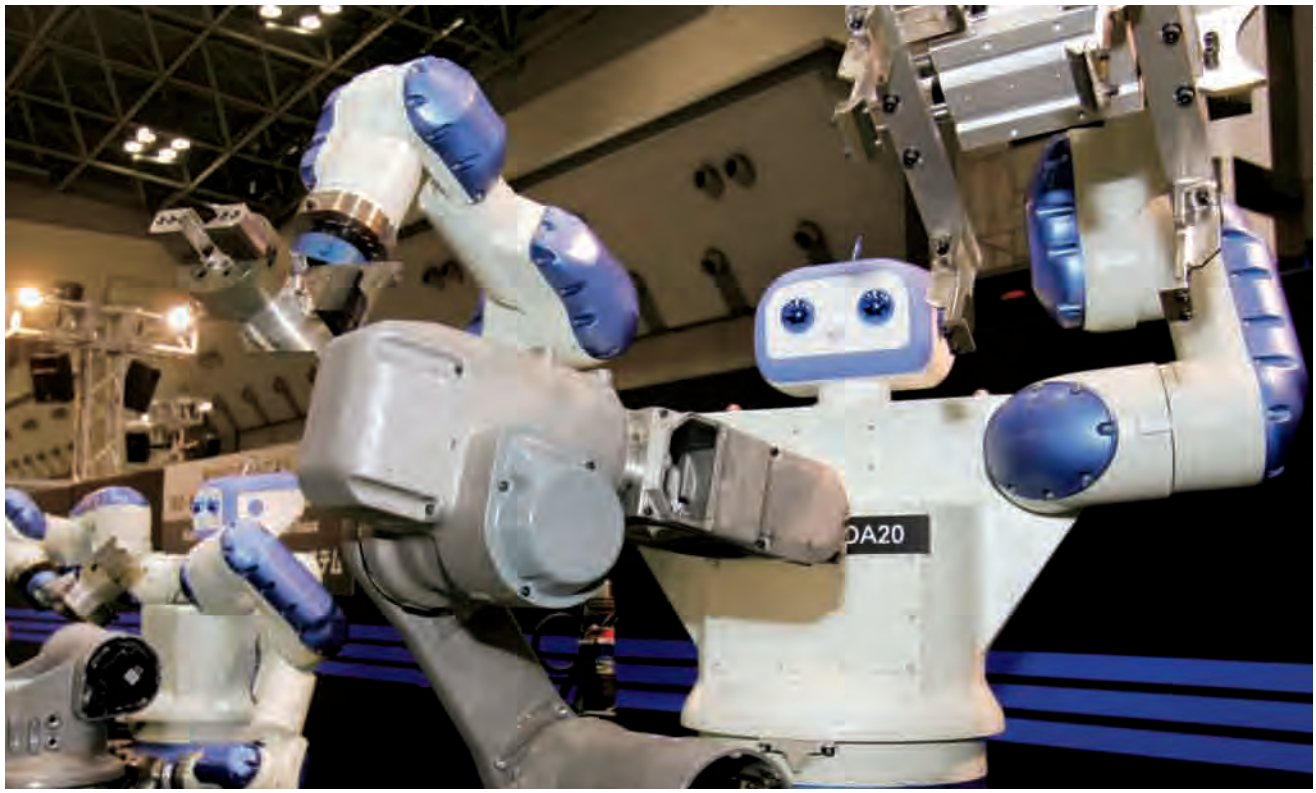
It's way too soon, however, for the purveyors of U.S. white-collar exports to break out the champagne. Even high-end services can be vulnerable to reversals in the flow of international trade.

Dean Baker, codirector of the Center for Economic and Policy Research in Washington, observed that a lack of competition from immigrants and outsourcing has granted many white-collar professionals in the United States—doctors and lawyers, notably—a large measure of protection. But that could end someday. Suppose you need expensive surgery. Your health insurer, instead of shelling out $150,000 to a nearby hospital, might urge you to try a first-rate hospital in Bangkok. Baker imagined a sales pitch: "We'll pay your airfare. You can take your spouse, take a kid, stay there two weeks, three weeks, or however long it takes you to recuperate, and we'll give you $10,000 on top." The insurer and insured might stand to gain, but at the expense of American doctors and other well-paid practitioners in the domestic medical industry.

Sustaining vigorous growth in white-collar services also requires maintaining a generous supply of highly skilled entrepreneurs and employees. This can be done by students getting better results from American public schools and by recruiting the most-skilled immigrants possible. However, the troubles of our public school systems are hardly news, and our approach to immigration has been unhelpful. Even as lax border enforcement has effectively invited a great number of unskilled laborers into the country, complicated visa rules and labyrinthine regulations have kept skilled foreign workers out.

Looking at the trade picture overall, it seems that white-collar services, for all of their promise, still have a long way to go before they can make up for the U.S. manufacturing business that has been lost. America's $132 billion surplus in the international trade of services last year plugged barely a quarter of the half-trillion-dollar deficit in the trade of goods. To bring the U.S. trade back into balance, in other words, exports of services would need to increase by nearly 300 percent. Architectural blueprints alone aren't likely to cover the gap. In the meantime, Sweet Sakura Bear has her work cut out for her. ■

The author is a writer in Los Angeles and an editor at the Washington Monthly.



REUTERS/YURIKO NAKAO

Hard World, Dream Jobs

A few tricks for finding work that you want in a marketplace with a mind of its own.

By ALINA TUGEND

Job hunters are often faced with two bits of common, but potentially contradictory, advice. The first: Find your passion. The second: Enter a field that's growing, not shrinking.

So, you sit down and see that the experts are projecting hot careers of the future in computer-systems design, management, scientific and technical consulting, and health care. But none of those thrills you. As a college student, a recent graduate, or someone planning a mid-career change, how can you position yourself to take advantage of the most promising arenas while still doing something you like?

"A savvy job seeker has to assess both their self-interests and the current and future needs of the marketplace," said Cheryl Heisler, president and founder of Lawternatives, which helps lawyers choose alternative careers. "One without the other—especially in a tight job market—is a doomed philosophy."

The good news is that a lot of information exists. A useful place to start is the Bureau of Labor Statistics (*bls.gov*). Every two years, the agency publishes its Occupational Outlook Handbook, which examines the anticipated size and composition of the labor force over the next decade and predicts which fields will expand and which will contract. Within a given field, it describes the different sorts of jobs and typical salaries. The most recent edition, published a year ago, offers projections up to 2018.

But what does one do with this wealth of projections on job growth? Consider, for example, a field that, according to BLS, will grow by 45 percent during the next eight years: the design of computer systems and related services. Interested? Suppose, however, that you don't want to pursue a computer-related career. Look elsewhere? Maybe.

Or better yet, give the field a closer look. Bobby Schnable, the dean of

Indiana University's School of Informatics and Computing, points out that the category of computer-systems design includes disparate components. "Twenty years ago, the field was about the innards of computing," he said. "These days, the big majority will be about computing related to health care, marketing, and social networks." At his institution, Schnable noted, students have applied their work in computing to fields such as business, art, and psychology.

What is true for computing is also the case for other careers. If you're attracted to a particular field, investigate the options. For careers in technology, for example, Advanced Technological Education Television (*atetv.org*) offers online videos about numerous job opportunities and educational programs. Another source of information about occupations is *onetcenter.org*.

Nancy Collamer, a career coach in Old Greenwich, Conn., gives her clients the same advice she offers her daughter, a college sophomore. Her daughter started at George Washington University's School of Media and Public Affairs, but her focus shifted to public health. Rather than switch majors, she plans to combine both interests by pursuing communications work in public health.

"I told her, you need some hard skills—how to produce a video, how to write well, how to use social media," Collamer said. "I say follow your passion, but get good, strong skills. Find out what is meaningful and use it as a core, guiding mission, but know that there are a lot of different avenues."

Finding different avenues is exactly what Heisler was contemplating when she started Lawternatives (*lawternatives.com*) as a business. "I knew a lot of lawyers who were unhappy," she said, so she looked for ways that they could retrain for another career without investing a lot of money and time.

"You need to be able to see alternatives and options," Heisler said. "It's like if you're into food. There's more than being a chef at a restaurant. You can be a food stylist, do institutional cooking, or a lot of other things." A good lawyer, she said, knows how to negotiate, communicate, persuade, and write—skills that are useful in running a business, working at a nonprofit, or succeeding in myriad other vocations. "You have to be willing to do the homework for what you love."

Doing her homework was key for Elizabeth Dempsey, 25, of Summit, N.J., who recently graduated from college and was researching job prospects and salaries. Interested in marketing, she applied to a few local firms. While job hunting, she brushed up on her computer skills through Web sites such as *lynda.com*, where a monthly fee of about $25 pays for online tutorials in Adobe, Outlook, Photoshop, and other computer programs. Dempsey's strategy worked. A financial public-relations firm offered her an unpaid internship in September and, a few weeks later, a salaried position.

Or try a low-tech but time-honored way to assess whether the career of your dreams is on the upswing or losing ground: Check out who is advertising jobs. Leslie Coplin, 45, of Larchmont, N.Y., worked in television production before taking time off to raise a family. When looking to reenter the workforce, "I did something that's not scientific, but something my mother always said to me and her mother said to her—look at the 'help wanted' ads," she said.

Assess both your self-interests **and the needs of the marketplace**—and make a match.

For a year, Coplin combed through the classifieds in *The New York Times* while keeping her possible interests, such as physical therapy and nursing, in mind. "I kept setting my grid—my own personal interests overlapping with what's actually out there," she said. Coplin paid attention to the requirements for experience and accreditation, and she looked for offers of part-time work, which is what she wanted. "I also know I didn't want to dabble," she said. "I wanted a career, not a job."

In the end, Coplin chose social work, and she started pursuing a master's degree this year. "It's something I wouldn't have thought about in my 20s, before I had dealt with marriage, children, and the elderly," she said. "But it's now desirable, based on my age and life experience. I wanted something I could do into my 70s—something that I would become better at, the more lines I have on my face and the more years I have under my belt." The BLS data confirm the wisdom of Coplin's decision: The number of jobs in social work is expected to increase by 16 percent during the next eight years.

The information from BLS and other sources can help in choosing a career, whether you're new to the workforce or pondering a midlife change. But beware of becoming fixated on statistical predictions. They're nothing more than "one idea of how the future is going to look," said David Passmore, a professor of education at Pennsylvania State University and the director of its Institute for Research in Training and Development. Job projections are based on assumptions about business decisions and growth, he noted, but "you can't predict crises, disasters, and political foolishness." Besides, the statistics represent macroeconomic expectations that individuals must translate for their personal circumstances.

Passmore offered another piece of advice: No matter which career path you choose, whether it's as an engineer, cosmetologist, or car mechanic, be sure to learn what the job really entails. Do doctors spend an inordinate amount of their time filling out paperwork? (Yes.) Do astronomers actually spend most of their day gazing through telescopes? (No.) Passmore isn't alone in concluding that too many college students have only a vague idea about the career they wish to pursue, and that idea is based more on television and movies than on reality.

Rose Baker, director of Penn State's Center for Regional Economic and Workforce Analysis, suggests a way to infuse more realism into the process: requiring college students to shadow workers who already hold the jobs they covet. This might help job seekers, especially young ones, not only narrow down their career interests but also focus their educational plans. They may find, Passmore said, that a vocational-training program or a two-year degree will prove more useful than a costly four-year degree.

"You have to look at how the world works," he explained. "As has been said, good work involves what you can do best and finding out what the world wants—and making a match." ■

The author writes the ShortCuts column for The New York Times. Her book, Better by Mistake, is due out in March. She's at twitter.com/atugend.

Q&A

RICHARD A. BLOOM

Uncle Sam Inc.

The Obama administration's pitchman is bullish on manufacturing and hopeful about exports.

By JIM TANKERSLEY

COMMERCE SECRETARY Gary Locke has made himself the de facto international pitchman for American manufacturing, and with good reason: Locke believes that the future of the nation's factories is directly linked to increased exports—led by clean energy, advanced medical devices, aerospace, and other high-skilled fields. In an interview, he declared that America's "manufacturing future is bright," and touted his department's work in helping Boeing sell jumbo jets in Russia and Harley-Davidson peddle motorcycles in India.

■ *We've seen some signs of life in manufacturing in the last couple of months. Why? What can we expect in the near future?*

LOCKE: Manufacturing is an important element of the economic recovery. Retail sales are up. Consumer confidence is rebounding. Factory orders are up. That will spill over into the manufacturing sector. Quite frankly, the areas in which we excel, from high tech to medical devices to aviation, exports of those items are up. The more U.S. companies export, the more they produce. The more they produce, the more people they hire. So much of what Americans make is highly desired around the world. With the economy recovering around the world, with a growing middle class in Asia and China, they want these products.

■ *How competitive are American manufacturers on cost right now?*

LOCKE: You're actually seeing a lot of manufacturers come back to the United States. Look at all the foreign auto companies that are building plants here ... some of which is actually for export. The BMW, the 300 series that's being built in South Carolina, is not all for domestic consumption. Some of that [output] will actually be exported. You're finding that the cost of labor, the cost advantage elsewhere, is not as sharp anymore. [Factoring in] the requirements of just-in-time delivery, transportation costs, a whole series of questions about delivery, and even the fact that the cost of labor is no longer such a major component of the final cost of the project—many companies are now looking more favorably to manufacturing in the United States.

■ *What are our advantages?*

LOCKE: A highly skilled workforce. A very predictable, stable political and economic climate. Safety of investment. You'll find that there are a lot of new entrepreneurs and wealthy individuals all around the world, and as they gain their wealth, they're looking for a safe place for their investment and their income.

■ *Is there opportunity in companies from emerging countries—India, China—opening manufacturing facilities in the U.S.?*

LOCKE: I think you're seeing a lot more of that. You're seeing a lot more interest from the emerging countries wanting to bring their families here, and to take advantage of the knowledge base here, and the R&D that occurs here.

■ *Is the character of U.S. manufacturing changing?*

LOCKE: Our strength is going to be in high technology, advanced manufacturing, things like advanced medical devices, aviation, clean energy, energy-efficiency devices, semiconductors.

■ *China is building up its higher-education system. More of our foreign college students are returning to their home countries after graduation. Are you worried that we're losing ground in the knowledge base needed for advanced manufacturing?*

LOCKE: That's why the president has also been focusing on the education system, and why I constantly tell the business community that its agenda must include education. We have to ensure that we also have visa policies that encourage the best and the brightest not only to come to the United States for advanced degrees but also allow them to stay here.

■ *How much will the European debt crisis affect American manufacturers?*

LOCKE: Obviously, it's a factor, but when you look at even the emerging countries, from China to Brazil, India to Russia, there's enormous potential there—absolutely enormous potential there. We're really focusing on breaking down a lot of [trade] barriers that American firms face. ■

The author is economics correspondent for National Journal.

Trump Cards

The American economy hasn't lost its structural advantages over foreign competitors.

By James Fallows

I HAVE SPENT MUCH of the past quarter-century among people in other countries who want America's best jobs.

In the 1980s, I met the designers and industrial engineers in Japan who dreamed that someday Toyota would overtake General Motors as the world's No. 1 carmaker—as it now has done. In the 1990s, I interviewed computer and mobile-phone makers in Singapore, South Korea, and Taiwan who aspired to move from their role as subcontractors to develop their own premium brands—which the likes of Samsung and LG have achieved. Over the past four years, I have visited companies in China that make everything from electric cars to electric airplanes and hope to create the high-paying, high-skill job opportunities that come with future technologies and industries. And then there's India ...

How can Americans respond? We have a serious structural handicap. But we also have some offsetting advantages that, if properly understood, could open significant possibilities.

The United States' primary disadvantage is in misunderstanding the origins of today's best-paying, high-tech industries. Many an enterprise arose from a foundation laid by public-private research partnerships: Apple, Google, and their competitors in the info-tech and Internet businesses; Genentech, Pfizer, and others in the biotech, genomics, and pharmaceutical fields; America's leading exporter, Boeing, and others in the aerospace and geo-information industries. Federal funding—mainly from the Pentagon and the National Institutes of Health—helped to create the basic technologies upon which entrepreneurs later started new businesses. Led by China, competitors around the world are now applying this same model in the race to build clean-energy, nanotech, and health care industries and other industries of the future. U.S. research funding, by contrast, has become sporadic and stop-start, and is likely to suffer under acute budget pressures.

But the United States has even more important structural advantages. Three stand out, particularly in contrast with China. The public and private research-university network, apart from producing an educated, high-end workforce and drawing talent from around the world, has been the incubator for most high-value technologies. U.S. universities are under intense economic pressure, but the gap between the best of them and those in the rest of the world is still enormous. Unless we thoughtlessly dissipate this asset, it should remain a significant wealth generator.

U.S. universities, immigration, and the rule of law **are saving graces.**

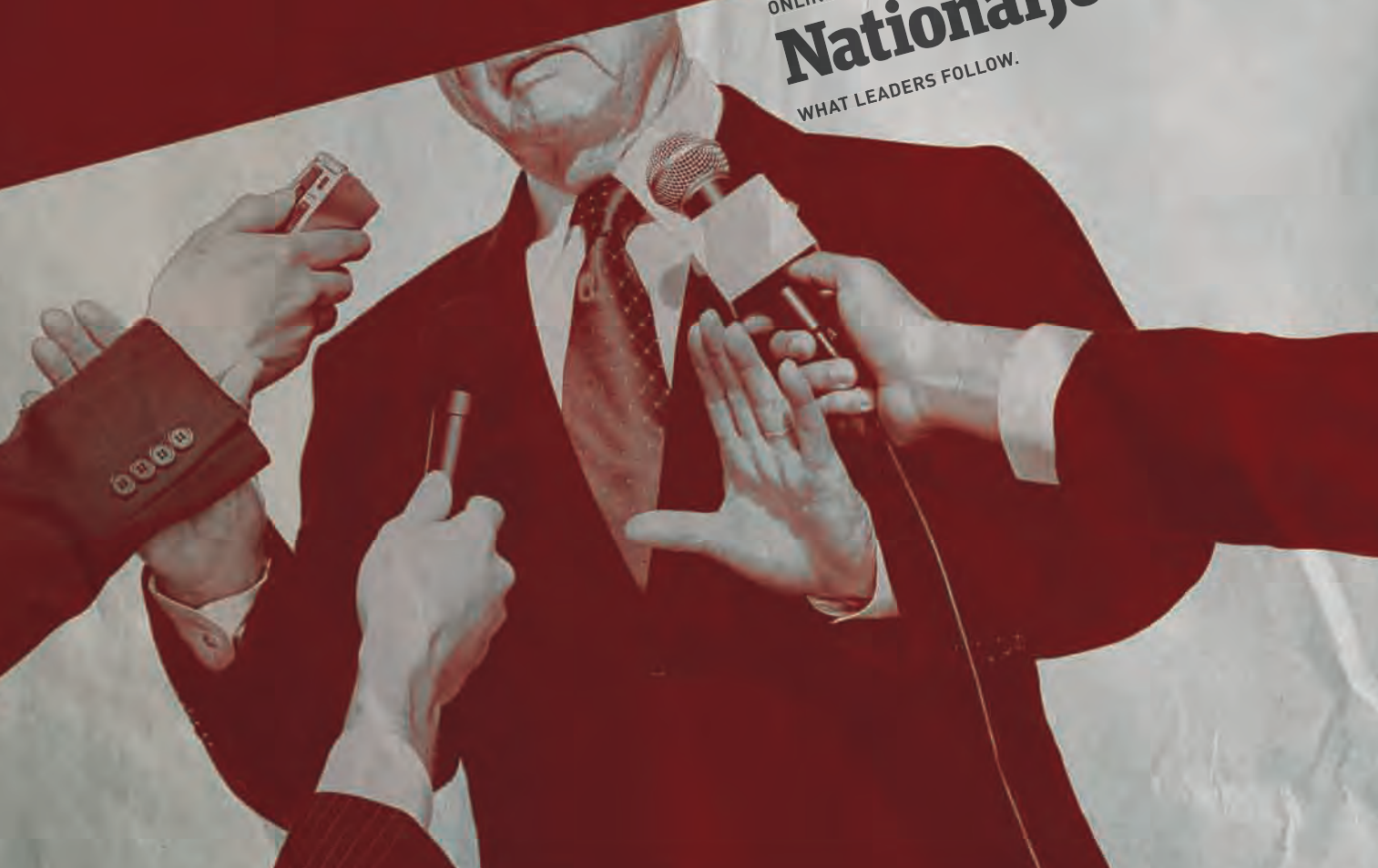
Another advantage is the continued attractiveness of the United States to people who believe that their energies, education, and ambition will go further here than anywhere else. Throughout American history, immigration has always been controversial and socially disruptive; by historical standards, it is less disturbing now than it was in the 1850s (Germans and Irish on the East Coast, Chinese on the West), the 1910s (Italians and Greeks, as well as Poles and other Eastern Europeans), and many other times, too.

Because 95 percent of the world's population lives outside U.S. borders, the majority of the world's talent will also start out residing abroad. But immigration has brought in a disproportionate share of the nation's creative talent. Half of the members of the National Academy of Sciences are foreign-born. America benefits from attracting more than our "fair" share. China has never won a Nobel Prize in the sciences; the Chinese-born scientists who received prizes were honored for work they did overseas, largely in the United States.

The third U.S. structural advantage is our much-maligned legal and financial framework, which fosters the creation of new enterprises that can put discoveries to productive use. Like the United States of the mid-19th century, China of the early 21st century has taken a shortcut to development through lax intellectual-property laws that permit the copying of others' ideas. Many other countries have done so to a less flagrant extent. But that puts a low ceiling on a country's ability to develop its own high-value industries. I have interviewed Chinese entrepreneurs who plan to incorporate their companies in California's Silicon Valley for fear of intellectual-property theft if they were based in their own country.

Identifying these advantages does not solve America's competitive problems, match individuals with jobs, or offset the increasing polarization of the U.S. economy. But it suggests the landscape for opportunity. ■

The author is a national correspondent for The Atlantic.



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