An economist's view from Iraq · The impact of defense spending on New England

The Federal Reserve Bank of Boston

Vol. 13 No. 3 Q3, 2003

Regional Review

(ACCIDENTS WILL HAPPEN)

Paying attention to workplace safety: what factors matter?

this issue

PROTECTING OURSELVES and our loved ones is instinctive. But keeping out of harm's way also has economic implications—for individuals and for the nation.

In **Accidents Will Happen**, Carrie Conaway looks at the drivers of safety in the workplace. She chronicles the improvements and pitfalls in safety and finds that legislation and regulation, insurance, economic change, and company culture all play a part in ensuring a safe working environment.

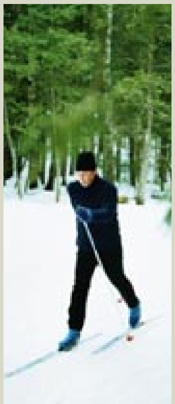
Security took on a new meaning in the United States after the September 11 terrorist attacks. Brown University Professor Peter Andreas explores the resulting tension between public safety and international trade in **Border Security in the Age of Globalization**. He argues that in improving border protection, we should take care to recognize the impediments to economic integration and the benefits that this integration brings.

Another consequence of September 11 is the dramatic rise in federal spending on defense. Given the region's concentration of defense contractors, Yolanda Kodrzycki and Pingkang David Yu ask whether the boost in defense outlays will translate into a windfall for New England states in **Focus on the Region**. Looking back at trends in spending, Kodrzycki and Yu determine that the impact on New England will likely be less than in previous defense buildups.

Finally, this past summer, Boston Fed economists Richard Kopcke and Chris Foote spent time working as economic advisors in Iraq. In **An Economist Reports from Baghdad,** Chris Foote mixes an analysis of the problems facing the Iraqi economy with tales of day-to-day life in a very dangerous corner of the world.

Cathy E. Minehan

CATHY E. MINEHAN
PRESIDENT, FEDERAL RESERVE BANK OF BOSTON



COVER ILLUSTRATION BY SETH

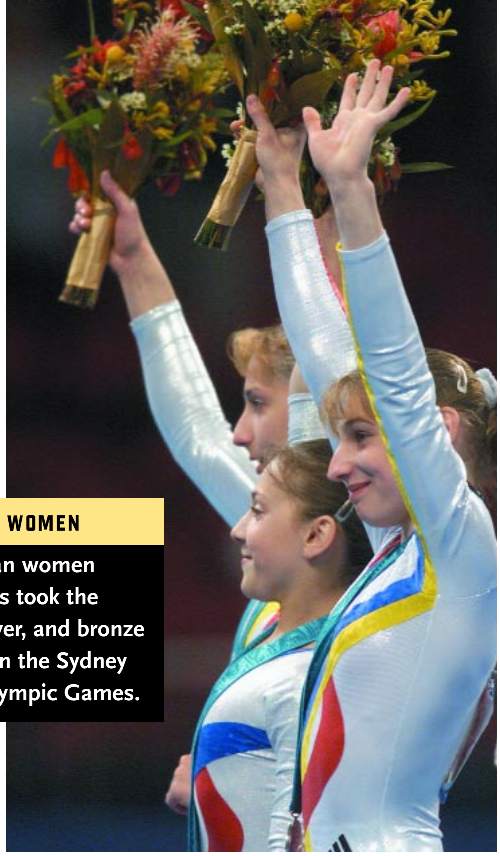
observations

Bringing home the gold

QUICK—WHAT DO Romania and Australia have in common?

Here's one answer: Female competitors from both countries brought home roughly the same number of medals in the 2000 Olympic Games in Sydney (at 19 and 22 respectively). But that's not all. Women's labor participation rate in both countries is about 76 percent of men's, a ratio higher than roughly three-quarters of all competing nations'.

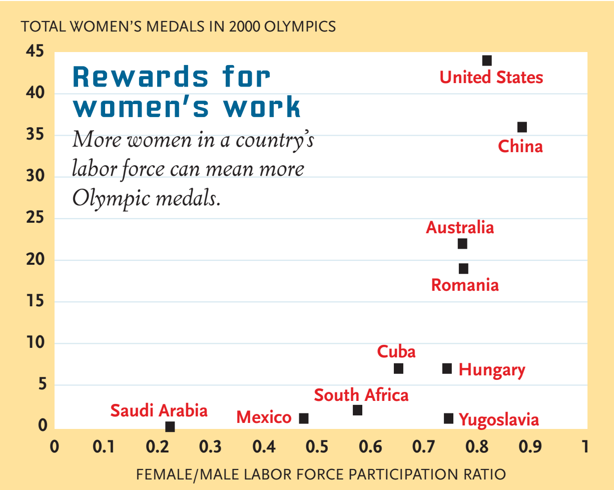
And it's no coincidence, either. Research by Tufts University economist Michael Klein shows a significant positive relationship between the performance of a country's women in international athletic competition and women's relative participation in that country's labor market. Controlling for the fact that richer countries produce healthier people and can devote more resources to leisure activities like sports—as well as for population, the country's commitment to Olympic sports, and other factors—Klein finds that women from nations with female-to-male labor ratios in the top quartile brought home 2.17 more medals on average than their bottom-quartile counterparts in the Olympic Games of 2000.



GRIGORY DUKOR/REUTERS NEWMEDIA INC./CORBIS

WINNING WOMEN

Romanian women gymnasts took the gold, silver, and bronze medals in the Sydney 2000 Olympic Games.



SOURCES: CBS Sportsline.com Medaltracker 2000, World Development Indicators CD 2001

So why is high labor force participation by women correlated with athletic prowess? Sociologists Judith Treas and Eric Widmer point out that as women's labor force participation has increased in industrial countries, so has societal approval of nontraditional roles for women. Countries whose women are integrated into the working world are less likely to view female athletes as having overstepped their feminine boundaries and are more likely to give women permission to embrace more traditionally masculine roles in both business and athletics. Sociologist Martha Brady has even suggested that the reverse might be also true—that women's economic conditions might be enhanced by their participating in sports, which would improve their self-esteem and sense of control over their lives. Whether the causal arrow points in one direction or both, it seems that countries whose women enjoy broad opportunities to work outside the home can bring home the gold—in more ways than one.

—Ashley Simonsen

A bill of (mental) health

Start with rapidly rising treatment costs for depression. Toss in a mandate for better mental health coverage. Drain out the stigma associated with mental illness. Sounds like a recipe for disastrous cost increases in treating depression—that is, unless you have a few other key ingredients on hand.

Insurers were certain they would see skyrocketing costs when Congress passed the 1996 Mental Health Parity Act, a legislative milestone that equalized coverage ceilings for mental health care with those for general medical benefits. Since consumers are particularly responsive to "discounts" on mental health prices, insurers anticipated that more generous insurance packages would prompt more people to seek treatment, and they forecast increases in premiums of 2.5 to 11.5 percent.

And indeed, the number of claims did grow. Columbia psychiatrist Mark Olfson says that the number of people seeking treatment for depression has continued to >>

ILLUSTRATION BY MELINDA BECK

CONTINUED FROM PREVIOUS PAGE

<< rise since parity was implemented, although the rate of increase has slowed compared with the tripling of patients from 1987 to 1997. But most insurers saw little to no increases in overall costs, suggesting that the cost per patient actually declined. What accounts for this decrease?

Though health network mergers and increased competition may have helped, at least temporarily, managed care—which employers instituted even more aggressively in response to parity requirements—was also a critical factor. An estimated 170 million Americans are now enrolled in these plans, which aim to control costs by reducing doctors' incentives to overprescribe treatment. Managed care plans implementing parity saw less than a 1 percent increase in total health care costs, while plans that simultaneously implemented parity and managed care saw cost reductions of 30 to 50 percent.

Managed care also puts pressure on doctors to substitute cheaper treatments for more expensive ones, so doctors are increasingly treating depression with drugs rather than therapy. Although some studies suggest that counseling may actually be slightly cheaper in the long run, "talk therapy" takes much longer to produce results and requires a referral to a specialist. As a result, from 1992 to 1999, spending on psychotropic drugs increased from 22 percent to almost half of outlays on mental health care.

But before you get too cheerful, beware: the savings managed care and antidepressants have achieved may merely represent a one-time cost reduction that cannot be repeated. And the unpopularity of managed mental health care among both patients and therapists has led some companies to loosen up in paying for therapy. Even so, the new economic incentives managed care has created have been key ingredients in keeping the cost of mental health treatment from boiling over.

—Ashley Simonsen

PAYPHONE PURGE

Many payphones are being put out to pasture, but some are being reinvented.

Death of the payphone?

MISS YOUR FLIGHT? Need to call home? You might be lugging your bags a lot farther than you used to if you're looking for a payphone in the airport these days.

"People have cell phones," explains Phil Orlandella, director of media relations at Boston's Logan International Airport. Orlandella estimates that the number of payphones at Logan, which rang in at 771 in December of 1999, now stands at about 550—and that number will be "chopped significantly" in the months to come, he said.

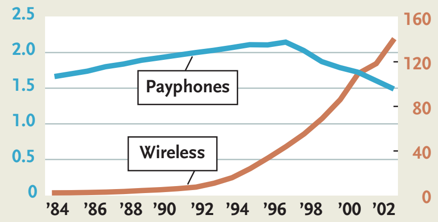
Meanwhile, airports are one of the few places left where you can even be sure to find a payphone. Since 1996, over 600,000 have been disconnected nationwide; meanwhile, cell phones have multiplied 11 times since 1993 to about 143 million today. The remaining phone booths now register only half as many calls as they did a decade ago, and payphone owners—including both the Baby Bells and independent service providers—are charging up to 50 cents per local call and $4 for just the first minute of a long distance call to compensate.

But it's not just cell phones' convenience that's driving payphones out of the market. For one, many payphone owners invested in low-quality phones that left customers frustrated by poor service. The phones are also expensive to operate. Although recent regulatory changes have reduced the discrepancy, in the past it has cost payphone providers two to three times more than wireless providers to connect into the phone system. Plus, owners aren't being compensated for more than one-third of the toll-free and long-distance calls made from their phones because of problems in tracing the calls to the correct service providers.

Can you hear me now?

Wireless phones are one reason payphones are becoming obsolete.

NUMBER OF PAYPHONES AND WIRELESS SUBSCRIBERS IN MILLIONS, 1984-2002



SOURCES: Wintergreen Research and Cellular Telecommunications & Internet Association

Payphone operators will have to do more than raise prices if they want to keep their phones profitable. To this end, Verizon recently launched an offer of 10 minutes of international call time for $1 from its payphones, connecting customers to most European countries as well as Canada, China, and Mexico City. With the market for international calling growing at 5 to 13 percent per year, Verizon hopes that these low rates will attract enough customers to make up for lost payphone profits. In Asia, phone companies are experimenting with using old phone booths as pay-per-use cell phone battery recharging stations. And Verizon is installing Wi-Fi transmitters in 1,000 of its payphones in Manhattan this year, providing its customers with wireless access within 300 feet of the transmitter. If these efforts are successful, there may yet be life after death for the payphone. *—Ashley Simonsen*

PHOTOGRAPH BY KATHLEEN DOOHER

Index overstock

THE SAFEST PATH to stock market success, investors have often been told, is to diversify—to invest in different stocks representing the whole market. But by so often choosing index funds, perhaps we are heeding that advice too well.

Unlike typical mutual funds, index funds invest in all the components of a stock index (the Dow Jones Industrials or the S&P 500, for example) and thereby closely duplicate the index's returns. Because of their inherent diversification and low administrative costs, index funds have skyrocketed in popularity since their 1976 debut.

But a recent study by Randall Morck and Fan Yang finds that stocks included in market indexes may be overvalued relative to similar excluded stocks. Index membership increases the demand for stocks in the index as fund managers and diversity-seeking investors buy more shares. Since the number of shares issued is relatively fixed, the prices of stocks in the index go up.

Index funds are popular—some think too popular. Could a sell-off be in our future?

Worse, Morck and Yang fear that the popularity of index funds caused an "indexing bubble" mirroring the "tech bubble" of the late 1990s. More than just an overvaluation, a bubble could occur if investors bought index-included stocks as much for their perceived propensity to continue increasing as for their underlying value. As the stock prices of firms included in the index increase, demand for those stocks rises, further increasing their price. The authors conclude that in 2001, the values of stocks included in the S&P 500 were as much as 90 percent above those for similarly sized companies not included in the index—a premium far in excess of what would be considered merely "overvalued."

Normally, investors sell overvalued stocks and buy their undervalued peers, eventually bringing prices back into line. But the popularity of index funds has made this almost impossible. Index funds are still attracting investors even as stock market investment overall has declined in the last three years. As a result, the premium on index funds, though diminished, has persisted. Morck and Yang point out, however, that if investors found alternative ways of diversifying and indexing became less popular, then the prices of a number of prominent stocks could fall sharply. Until then, the prices of indexed stocks will likely continue to command a premium. —*Matt Rutledge*

perspective

Border security in the age of globalization: How can we protect ourselves without losing the benefits of openness? By Peter Andreas

Photographs by Nubar Alexanian

ACCORDING TO conventional wisdom, globalization is about breaking down national borders. Indeed, it is often argued that growing economic integration and interdependence lead to more open borders and more harmonious cross-border relations. President Vicente Fox of Mexico, a leading proponent of this view, took office in December 2000 promoting a bold vision of an open U.S.-Mexico border, including the free movement of labor and the creation of a North American community. Such a proposal would further advance the process of continental integration. With the U.S.-Canada and U.S.-Mexico borders already the two busiest land crossings in the world, U.S.-Mexico trade has more than tripled and U.S.-Canada trade has nearly doubled since the start of the North American Free Trade Agreement (NAFTA) in 1994.

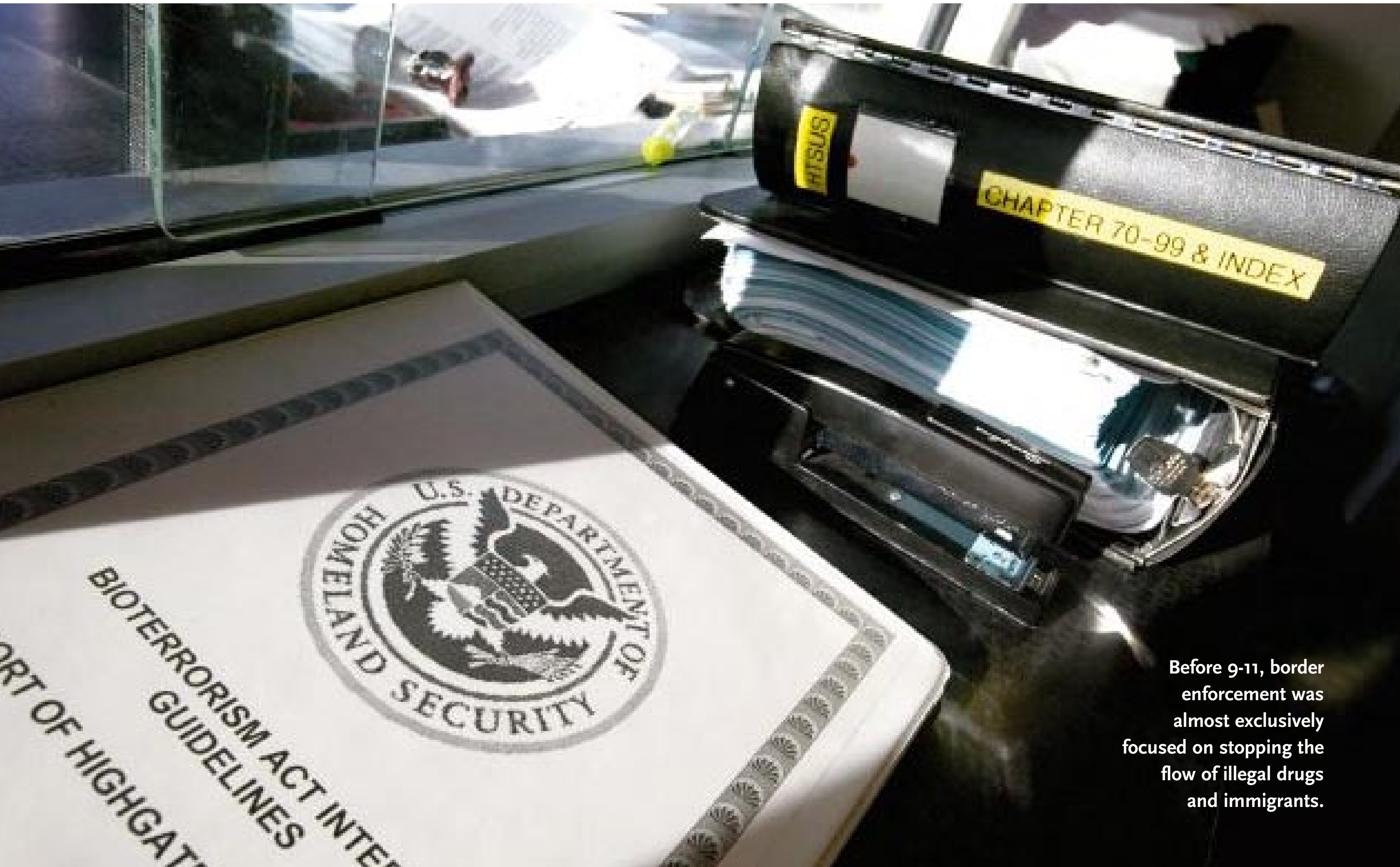
Fox's border-free vision of North America was one of the first casualties of the devastating terrorist attacks on the Twin Towers and the Pentagon on September 11, 2001. In both political debates and policy practice, the events of that day raised fears and put borders very much back in style, as the United States began a dramatic tightening of border inspections as part of its new and expanding war on terrorism. Traditional border issues, such as trade and migration, would now be inescapably evaluated through a security lens.

But the cross-border transportation and communications networks used by terrorists are also the arteries of a highly integrated and interdependent economy. Currently, about one-quarter of all U.S. production for export (2.5 percent of U.S. gross domestic product) goes to Canada and 15 percent is destined for Mexico. Constricting the arteries that facilitate this trade increases the cost of the cross-border flow of people and goods, with significant economic repercussions for ourselves and our trading partners. Similarly, the way in which border controls are implemented and managed could reduce the benefits of open borders and significantly affect the future of North American economic integration. Notes Stephen Flynn, a senior fellow at the Council on Foreign Relations, "U.S. prosperity—and much of its power—relies on its ready access to North America and global networks of transport, energy, information, finance, and labor. It [would be] self-defeating for the United States to embrace security measures that isolate it from these networks."

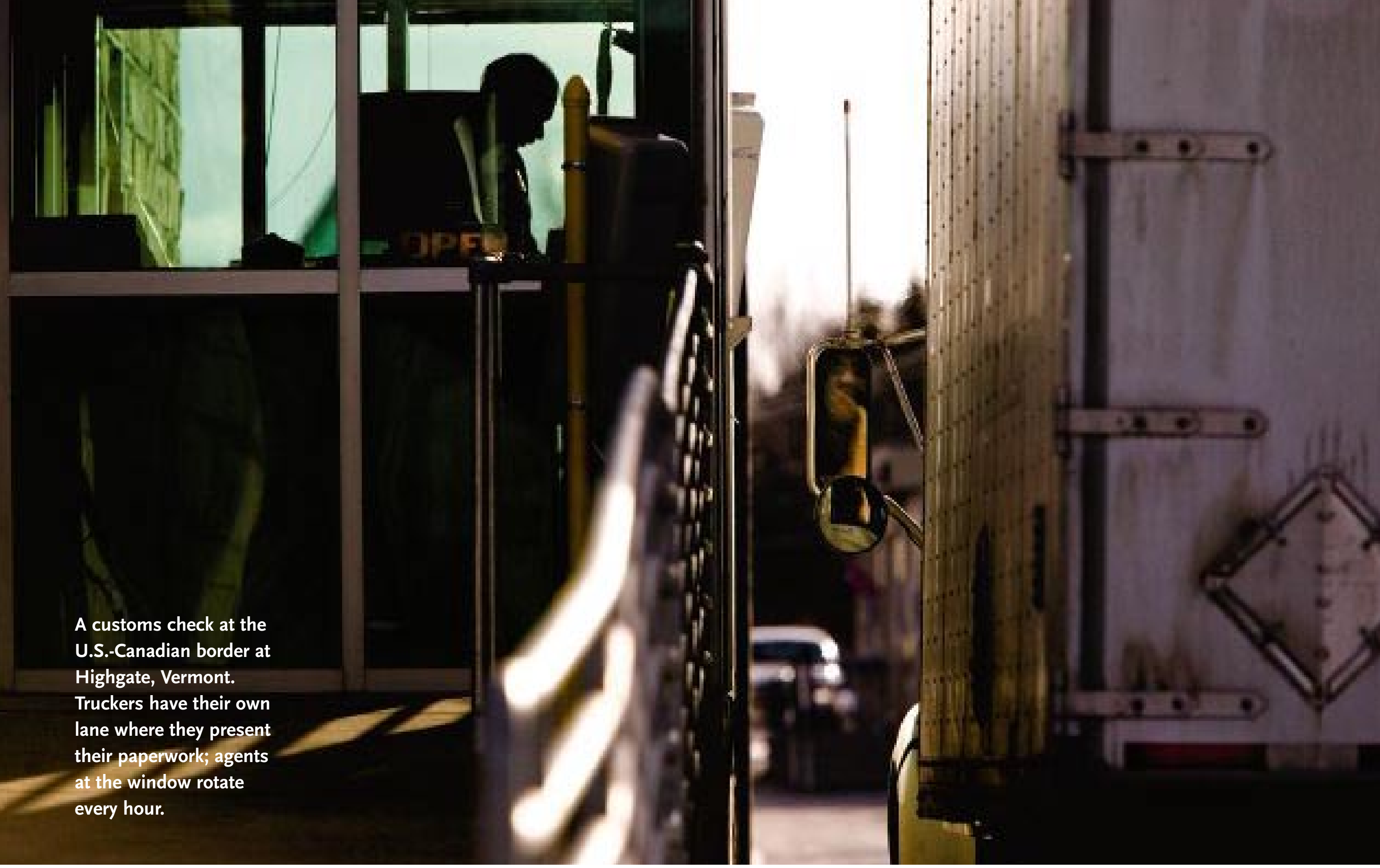
BORDER CONTROLS BEFORE AND AFTER 9-11

Before the attacks on 9-11, U.S. border enforcement overwhelmingly focused on inhibiting the flow of illegal drugs and immigrants. The enforcement apparatus of the Immigration and Naturalization Service (INS) was designed to handle millions of migrant workers entering the country in search of employment rather than to detect a few individuals who arrive to commit terrorist acts. Counterterrorism had traditionally been a low priority. Similarly, the U.S. Customs Service focused its energy on controlling the entry of illegal drugs into the country, and

Border security is back in style. But a sustained crackdown risks inhibiting legitimate trade and travel.



Before 9-11, border enforcement was almost exclusively focused on stopping the flow of illegal drugs and immigrants.



A customs check at the U.S.-Canadian border at Highgate, Vermont. Truckers have their own lane where they present their paperwork; agents at the window rotate every hour.

the Coast Guard concentrated on interdicting illegal drugs and immigrants. If the efficacy of these efforts was and continues to be controversial, perhaps one reason is that border enforcement efforts have sought to project the image of heightened security while not substantially slowing legitimate cross-border flows of people and goods.

Also, prior to 9-11 most enforcement activity centered on the U.S.-Mexico border, while the U.S.-Canada border was barely policed—only 334 agents were assigned to the 5,525-mile northern border compared with over 9,000 agents stationed at the 2,062-mile southern edge. Even during the 1990s, when the INS budget tripled and the size of the U.S. Border Patrol doubled, attention remained almost exclusively directed at the U.S.-Mexico border. On September 11, 2001, there were as many Border Patrol agents in Brownsville, Texas, as along the entire U.S.-Canada border.

The attacks on the World Trade Center and Pentagon complicated business as usual along both U.S. borders. The immediate U.S. response included increasing spending on border security and a dramatic tightening of inspections. The 2003 federal budget provided for a more than $2 billion increase in border security funds, including a 29 percent increase for the INS, a 36 percent increase in the inspections budget of the Customs Service, and the largest budget increase in the Coast Guard's history. Moreover, these agencies have now been brought together and folded into the new Department of Homeland Security—representing the largest reorganization of the federal government since the end of World War II.

One major change was an increased enforcement effort at the U.S.-Canada border. Under the Patriot Act, the number of agents deployed at the Canadian border was tripled; the Coast Guard now stops all boats crossing the Great Lakes and escorts gas and oil tankers. For its part, Canada also ordered a high state of alert at border crossings immediately after the attacks. Since then, it has enhanced the levels of security at airports, added new funding for detection technologies and personnel, initiated legislation to combat the financing of terrorism, and frozen the assets of known terrorist groups. It also introduced a fraud-resistant resident card for new immigrants, increased detention capacity and deportation activity, instituted greater security screening for refugee claimants, and tightened its visa regime—including adding a requirement that Saudi and Malaysian visitors obtain visas.

To a significant degree, these new U.S. border security measures have consisted of taking the old drug and immigration enforcement infrastructure and adapting it to counterterrorism efforts. Yet the counterterrorism mission is far more difficult than stopping the flow of illegal drugs and immigrants, and the expectation of success is much higher—indeed, the American public expects a success rate of 100 percent. And the indicators of success used for traditional border enforcement work, such as arrests and seizures, are visible and relatively easy to

Customs agents board a container vessel arriving at Boston Harbor.

use, whereas even counterterrorism "successes" can be infrequent and difficult to observe (for example, the attack that does not take place). In short, border enforcers have been given a harder job, face higher expectations, and have to rely on more difficult measures of progress.

A NEW KIND OF TRADE BARRIER?

As understandable as these border security measures may be, a sustained crackdown at U.S. land ports of entry risks a considerable impact on legitimate travel and trade. The United States and Canada conduct $1.3 billion worth of two-way trade a day, most of which is moved by truck. According to one estimate, a truck crosses this border every 2.5 seconds—amounting to 45,000 trucks and 40,000 commercial shipments every day. Immediately following 9-11 and the ensuing clampdown, the result was a dramatic slowing of cross-border traffic. Delays for trucks hauling cargo across the U.S.-Canadian border increased from 1–2 minutes to 10–15 hours, stranding shipments of parts and perishable goods. Automobile companies, many of which manufacture parts in Ontario and ship them to U.S. assembly plants on a cost-efficient, just-in-time basis, were particularly vulnerable. Ford closed an engine plant in Windsor and a vehicle plant in Michigan due to part shortages. Massive traffic jams and long delays also characterized the U.S.-Mexico border, where an estimated 300 million people, 90 million cars, and 4.3 million trucks cross the border annually.

While border delays are now not as long as immediately following the attacks, heightened security concerns can have a chilling effect on cross-border exchange. Put differently, security can become a new kind of trade barrier. Indeed, the United States' response immediately after 9-11 was the equivalent of imposing a trade embargo on itself, observes Stephen Flynn. While the long-term process of North American integration has not been reversed, it has certainly been complicated by the squeeze on the cross-border transportation arteries that provide its lifeblood.

FUTURE BORDER TRAJECTORIES

There are at least three potential future border trajectories in North America. At one extreme, one can imagine a substantial hardening of U.S. border defenses with security trumping all other considerations—the equivalent of a high tariff on the economies of both the United States and its neighbors. At the other are multilateral policy harmonization and a "pooling" of sovereignty similar to that which exists among European Union members—where common visa and asylum policies, a shared information system, and standardized border procedures essentially provide a common security perimeter. The most likely scenario for North America lies somewhere in between: a series of initiatives involving a mixture of enhanced cross-border security collaborations and partial policy convergence.

As the task of border control becomes more difficult, looking for answers beyond physical borderlines may be one way to enhance security while encouraging economic integration. For example, there are a number of innovative new cargo-tracking systems, inspection technologies, and traffic management strategies that are being promoted to extend policing beyond the ports of entry.

These "smart border" measures are designed to both ease border congestion and enhance security at the same time. For example, manufacturers and transport companies can beef up internal security measures to seal their cargo and can use new information and tracking technologies to assure the accountability of drivers and shipments. Regular business travelers can be prescreened and provided with an identification card with biometric information (such as handprint or retina information), and their vehicles can be equipped with electronic transponders. To facilitate border inspections and ease congestion, passenger information can be transmitted to border agents in advance. And for cargo, the entire inspection process could even be pushed away from the physical border into a trilateral continental inspection facility.

Balancing the twin policy objectives of border facilitation and enforcement has always been an awkward and cumbersome task. Since 9-11, the balancing act has become even more difficult as we seek ways to advance market integration while also managing our security and other public policy interests. Although it will likely be impossible to fully reconcile the twin imperatives of integration and security, how well we manage this formidable and inescapable challenge will profoundly shape the future of cross-border relations in North America. ❊

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"Smart border" measures can simultaneously enhance security and encourage economic integration.

A trucker carrying hay accidentally overshoots the checkpoint and is pulled over for inspection at Highgate, Vermont.

focus on the

Defense windfall for New England?

By Yolanda Kodrzycki and Pingkang David Yu

SPENDING ON national defense has risen substantially during the past several years. Including supplemental appropriations, the budget for national defense this year will exceed $487 billion. In inflation-adjusted terms, it will surpass its Cold War peak, reached in 1985 (all budget figures refer to fiscal years).

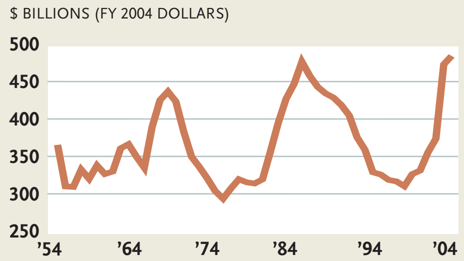
With its high concentration of defense contractors, the New England economy benefited significantly from the buildup during the Carter and Reagan administrations. Is the region likely to see a repeat? We don't think so. To be sure, large defense firms in New England are receiving some impressive, multimillion-dollar contracts. And the overall dollar amount of contracts awarded to defense contractors headquartered in New England is increasing every year. Nevertheless, there are a number of reasons the total impact of defense spending on the region's economy and jobs will probably fall considerably short of what it was in the 1980s.

Although national defense spending is high in absolute terms, its share of the total U. S. economy remains far below the Cold War peak. In the mid-1980s, national defense spending rose to 6.2 percent of GDP. This year, we estimate it will be a little over 4 percent.

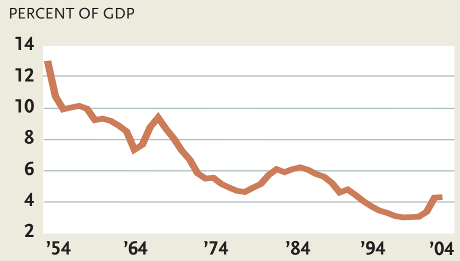
New England still gets more than its "fair share" of defense prime contract dollars—in 2002 it received 8.2 percent, even though it accounted for only 5 percent of the national population and 6 percent of national production. But the region's share of total contracts has fallen well below its 12 percent average in the 1980s. Connecticut and Massachusetts ranked ninth and tenth in defense contracts in 2002. They were fourth and fifth in 1980. Had New England defense firms continued to grow in line with the national trend, they would be taking in nearly $17 billion a year, as opposed to the $11 billion they have averaged since 2000.

New England contractors' sharp loss of share since the 1980s stems from two broad causes: product mix and geographic change. The national composition of defense spending is shifting away from hard goods like missiles, ships, and tanks to other supplies and services like fuel, construction, data processing, and administration and management support. This is significant because New England's defense contractors have tended to specialize in hard goods. Comparing New England defense

Defense spending has risen in real dollars...



...but has fallen as a share of GDP

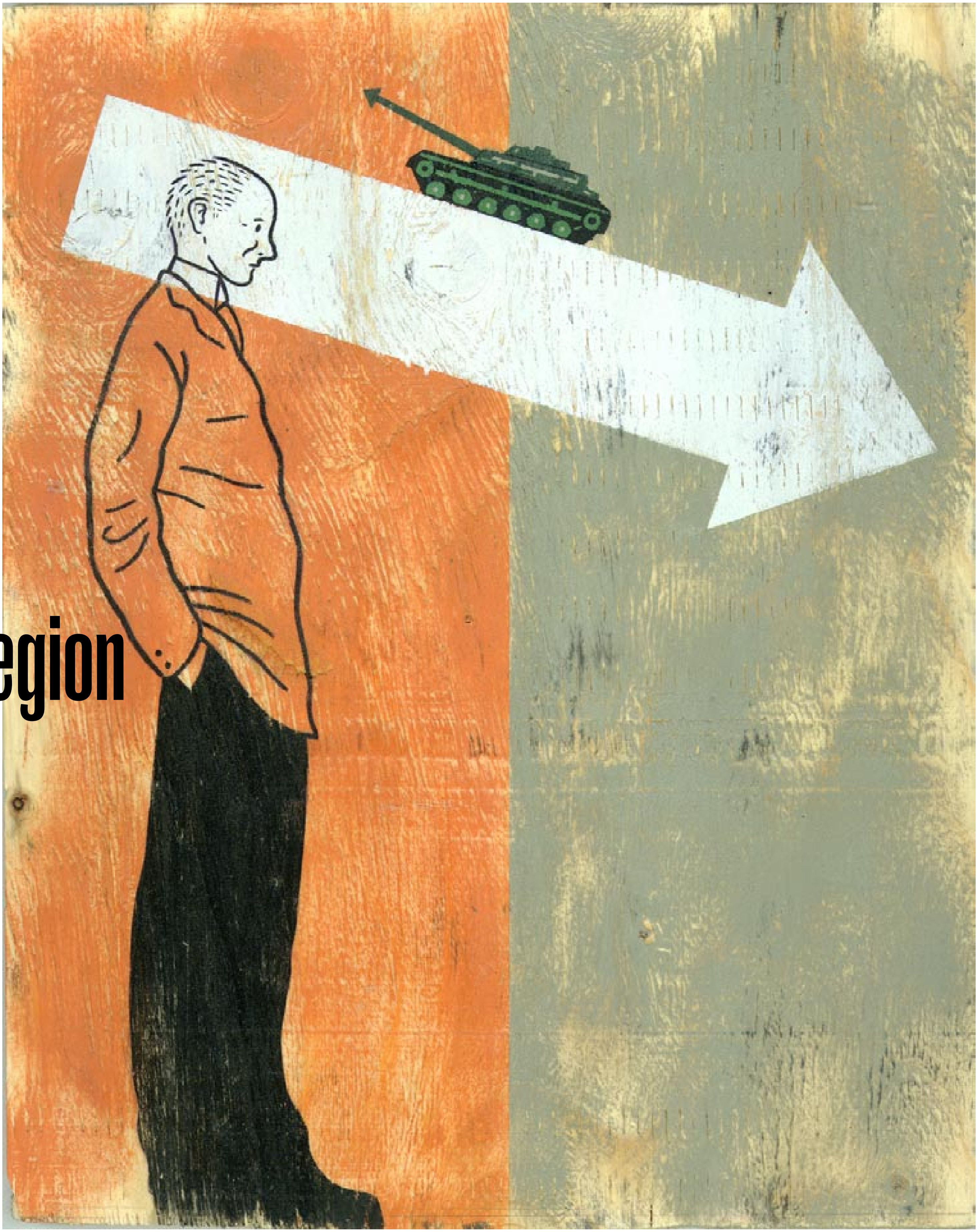


NOTES: Defense spending in real dollars is fiscal year budget authority (allocated money), including supplemental appropriations.

Defense spending as a share of GDP is actual fiscal year outlays (money spent); 2003 and 2004 figures are authors' estimates.

GDP value for fiscal year 2004 is based on CBO estimates; all other values are actual fiscal year GDP.

SOURCES: OMB, CBO, and DoD data reported by the Center for Strategic and Budgetary Assessments; GDP data reported by Haver Analytics



region

illustration by dan page

prime contracts in 2000–02 with 1988–90, this shift in the product mix has caused the region a $3.3 billion loss in hard goods contracts while yielding only a $1.6 billion increase in services contracts. Within hard goods, the changes in product mix since the Cold War have favored only New England's aircraft sector.

Then there is the shifting geography of defense spending. Within most product categories, contracts are increasingly being awarded to firms in other parts of the country. This has cost the region $4.1 billion in defense contracts relative to what it received in the late 1980s, with the largest losses in aircraft, missiles, ships, and the "other supplies and services" category. The shift away from New England might have resulted from a number of different factors—changes in military technology, costs of production, mergers among defense firms, or the loss of political clout useful in obtaining military contracts—although our calculations cannot determine the role that each factor might have played. Overall, about 30 percent of New England defense contractors' loss of prime contracts since the late 1980s is due to the changing product mix of national defense spending, and the remaining 70 percent to the changing geography of purchases.

In the end, New Englanders probably care more about the effect on local employment and incomes than on prime contract dollars—which, after all, partially end up flowing to subcontractors and vendors located elsewhere. It is difficult to calculate this impact. But it is clear that the region's defense contractors are subject to the same forces as other local manufacturing and services employers. Defense firms are reducing costs through restructuring their operations, adopting labor-saving technologies, and shifting jobs to lower-cost locations, including foreign countries.

Looking ahead for the next year or so, defense spending will likely continue to increase—but mostly because of postwar operations in the Middle East and the continuing overseas war on terrorism rather than because of any increases in military procurement that might bring additional jobs to the region. And while federal government spending on homeland security offers another source of stimulus, the total homeland security budget is less than one-tenth the size of the defense budget and is not slated to grow as rapidly in percentage terms. Thus, additional increases in defense and related spending are likely to have only a muted impact on the New England economy for the foreseeable future.✻

YOLANDA KODRZYCKI IS AN ASSISTANT VICE PRESIDENT AND ECONOMIST AND PINGKANG DAVID YU IS AN ECONOMIC POLICY ANALYST AT THE BOSTON FED.

PRIME CONTRACT **awards (measured in dollars) are the most commonly used data for analyzing how defense purchases from business firms and research establishments affect state and regional economies. But they also have well-known limitations. Prime contracts convey the location of only the final stages of production; they do not include the value of work performed by subcontractors and other vendors. For example, an aircraft assembly plant in the Midwest may use prototypes developed in California and instruments produced in New England, but the prime contract dollars will all be attributed to the Midwest. In addition, prime contracts can sometimes be allotted to a company's primary facility rather than to its actual production sites. In New England, for example, General Dynamics Electric Boat contracts are allocated exclusively to Connecticut, even though the company also operates a large submarine fabrication facility in Rhode Island.**

The Pentagon has sponsored an alternative modeling approach to measuring and forecasting the geographic allocation of military spending. This model traces defense purchases from various industries—including the industries that supply inputs—and then figures the share of national production of these industries located in each state. Using this approach, we calculate that New England's overall share of defense industry purchases drops a little, and individual state rankings for 2002 differ: Massachusetts moves up from tenth to ninth place; Connecticut drops from ninth place to twentieth.

US DoD Prime Cuts

Although national defense spending is on the rise, changes in product mix and geographic location have left New England with a leaner stake.

($ billions)	Annual average 2000–2002	CHANGE FROM 1988–1990 AVERAGE DUE TO: All factors	Trend in national defense spending	Changing mix of defense spending	Geographic shift
Total New England Defense Prime Contracts	**11.0**	**-3.8**	**2.0**	**-1.7**	**-4.1**
Major Hard Goods	**7.9**	**-4.5**	**1.7**	**-3.3**	**-2.9**
Aircraft	**3.2**	**-0.3**	**0.5**	**0.4**	**-1.2**
Missile and space systems	**0.5**	**-2.3**	**0.4**	**-1.8**	**-1.0**
Ships	**2.1**	**-0.3**	**0.3**	**-0.5**	**-0.1**
Tank-automotive	**0.0**	**-0.5**	**0.1**	**-0.2**	**-0.4**
Weapons	**0.1**	**-0.2**	**0.0**	**0.0**	**-0.3**
Ammunition	**0.3**	**0.3**	**0.0**	**-0.1**	**0.3**
Electronics and communications equipment	**1.6**	**-1.2**	**0.4**	**-1.2**	**-0.4**
Other Supplies and Services*	**3.1**	**0.7**	**0.3**	**1.6**	**-1.2**

*Includes items such as fuel, construction and building supplies, data processing, and other services.
NOTES: (1) Factors may not sum exactly due to rounding. (2) All figures in current dollars; an analysis with constant dollar values produced qualitatively similar results.
SOURCE: U.S. Department of Defense, Prime Contract Awards by Region and State

ACCIDENTS WILL HAPPEN

By Carrie Conaway

Illustrations by Seth

There's more to ensuring workplace safety than installing antiskid mats and keyboard drawers.

So what improves workplace safety?

IN EARLY January of 2003, an ugly truth was finally brought to light. McWane Inc., a manufacturer of cast iron sewer and water pipe based in Birmingham, Alabama, made headlines as one of the most dangerous places to work in North America, following a nine-month investigation by the *New York Times*, *Frontline*, and the Canadian Broadcasting Corporation's *The Fifth Estate*. The company, employing 5,000 people, had more than 4,600 documented worker injuries since 1995, including nine deaths, and had been cited by the Occupational Safety and Health Administration for over 400 violations of workplace safety regulations.

Pipe manufacturing is a notoriously dangerous industry to begin with, but McWane's injury rates were far above industry averages. Employees routinely worked 16-hour shifts without breaks in a super-heated workplace where temperatures sometimes reached over 130 degrees, with dust, dirt, and grime thickening the air and coating every surface. Safety guards were removed from machinery to speed their operation. Broken machines were kept in action. Managers even went so far as to cut costs by rationing crushed ice for workers' drinks.

The very fact that the McWane story is so shocking is testimony to the fact that we now expect our workplaces to be clean, quiet, and safe. While McWane is surely not unique, it comes across more as a recalcitrant employer of a bygone era than as a typical modern business. But the McWane experience tells us more than just that times have changed. It also highlights the important role of the work environment—workplace regulations, economic conditions, insurance incentives, and organizational culture—in encouraging firms to embrace safety. And these same environmental factors reveal a great deal about workplace safety in society as a whole.

"For a McWane manager...taking time for a safety or environmental problem holds few attractions. It means slowing production to fix equipment. It means more safety training, less time to make pipe."
—*New York Times* January 9, 2003

WORKPLACE SAFETY IN THE INDUSTRIAL ERA

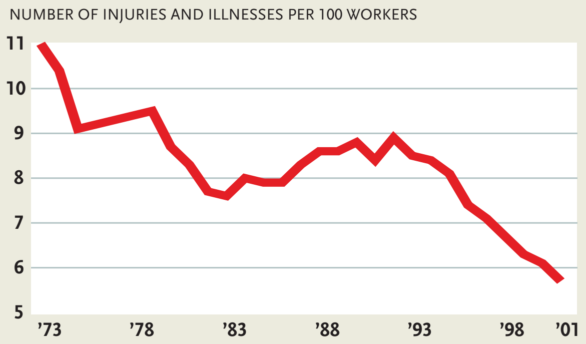
The history of the early years of industrialization abounds with stories of the injuries, illnesses, and premature deaths associated with factory and farm work. Inspections of New England textile mills in the 1870s found poor ventilation, high levels of dust, noise, heat, and humidity, and frequent injuries. Many other common occupations of the era, such as making matches, tending tannery vats, and handling wool, also resulted in injuries and disease. While no consistent statistics on workplace safety were collected at that time, accounts from the era indicate that workplaces were dangerous indeed.

But these dangers did not go unnoticed. Organizations concerned with working conditions started investigating the problems of workplace safety and health as early as the 1830s, not long after industrialization began. And beginning in 1869, when Massachusetts established the first state bureau of labor statistics, state agencies began collecting data and conducting inspections of workplaces to document both health and safety hazards and safe work practices. About a decade later, states also began to pass "factory acts" establishing regulations and inspections to ensure that workplaces had adequate ventilation, emergency exits, procedures for safe machinery repair, and so forth. Later on, Workers' Compensation legislation spread quickly once it was first adopted in Wisconsin in 1911; 43 states had passed Workers' Compensation laws by 1921. Even so, egregious behavior on the part of employers was not uncommon. Perhaps the best-known example is the Triangle Waist Company in New York City, where in March 1911, a fire broke out and 146 workers were trapped and killed because the exit doors were locked. But at the same time, historical research from the Bureau of Labor Statistics shows that there was less resistance from employers to the regulations than one might have expected—perhaps because making all employers comply eliminated any competitive disadvantage to improving safety.

The lack of reliable data on injuries and illnesses made it difficult to track the state of the nation's safety record until 1970, when Congress passed the Occupational Safety and Health Act. In 1973, the first year for which reliable data are available, 11 out of every 100 workers were injured on the job (see chart at left). Since then, the road to a safer workplace has not been an entirely smooth one. The injury and illness rate declined from the early 1970s through the mid-1980s. Some of these gains were lost in the 1980s, with injury rates jumping 13 percent in only six years. In 1992, however, injuries turned the corner, declining to historic lows by 2001. In that year, less than 6 percent of workers were injured on the job—the lowest rate since data collection began.

A Picture of Health

Workplace injuries and illnesses have declined since OSHA was created in 1970, but the road to safety has been bumpy because of changes in regulations, insurance, and the economy.



SOURCE: Bureau of Labor Statistics

FEDERAL REGULATORS STEP IN

Until 1970, safety was primarily considered a concern of businesses and state governments—not a matter for the federal government. But workplace injury rates started to creep up in the 1960s, and there were also

States regulated workplace safety for years, but there were no federal rules until 1970

some highly visible workplace accidents at that time (most notably, a major mine explosion in Farmington, West Virginia, that killed 78 workers). Further, states were beginning to complain about the lack of consistent federal standards, as regulation discrepancies meant that employers could threaten to move to other states with more lenient and less costly Workers' Compensation regulations. Likewise, unions and worker advocates were concerned that employees' compensation for the same injury could vary dramatically from state to state.

These concerns led Congress to take the first federal-level action on workplace safety, establishing the Occupational Safety and Health Administration (OSHA) in 1970. OSHA's primary mission is to enact and enforce federal safety regulations. It takes both a carrot and a stick approach, offering technical assistance and information on best practices as well as inspecting firms and issuing citations and fines to offending employers. It also compiles statistics to track the country's safety record.

All these activities should help reduce workplace accidents. But since its inception, OSHA's ability to actually influence accident rates has been questioned by employers and economists alike. It is probably true that the initial drop in injuries and illnesses in the early 1970s is related to OSHA, but it is not clear whether this was a direct impact of the agency's regulatory efforts or whether it occurred because of increased employer awareness of work- >>16

Sprains and strains, the most common type of on-the-job mishap, accounted for nearly 45 percent of workplace injuries and illnesses in 2001.

Why did injuries rise in the 1980s?

In the mid-to-late 1980s, the U.S. experienced its only sustained increase in workplace injuries since OSHA started keeping records in 1973. The injury rate increased from 7.6 injuries per 100 workers in 1983 to 8.9 per 100 in 1992, while the number of workers reporting injuries increased from 4.8 million to 6.8 million. What happened?

Much of the increase derived from increased attention to a newly identified workplace injury—**ergonomic, or musculoskeletal, disorders.** Up until then, most workers viewed the ganglions, tendinitis, and carpal tunnel syndrome they acquired after years of work on factory lines or in offices as a natural part of having a job. These problems were rarely reported to OSHA and therefore comprised only a small portion of reported injuries and illnesses. But in the 1980s, OSHA started levying citations and fines against major manufacturers like Hanes Knitware and Samsonite for ergonomic hazards in their workplaces, and workers and employers alike started taking ergonomic injuries more seriously. Nearly 750,000 people reported a musculoskeletal disorder due to their work environment in 1992.

A second important factor: **Health care costs** of all kinds were on the rise. In the traditional health insurance market, these trends precipitated a shift toward managed care programs that tried to curb costs by restricting access to specialists and expensive treatments. But Workers' Compensation insurers could not quickly adopt the same techniques because major changes in Workers' Compensation benefits and premiums required state legislative action. And since Workers' Compensation allowed for more flexibility and choice in treatment, more illnesses and injuries were treated under Workers' Compensation than otherwise might have been.

Insurer of last resort

The number of employers who could not obtain traditional Workers' Compensation insurance spiked in the late 1980s as insurers, faced with high costs, refused to cover many firms.

NOTE: 2002 figure is preliminary.
SOURCE: National Council on Compensation Insurance

But there was also another more subtle and complicated cause for the increase. Workers' Compensation insurers now faced unexpectedly high claims because of the increase in ergonomic injuries and cost-shifting into the Workers' Compensation system. Because of regulations, however, in the short run insurers could neither increase premiums nor cut back on the types of injuries that were covered. (Prices eventually did rise—indeed, employers were paying nearly double the premiums in 1994 that they were in 1986—but costs were still increasing faster than premiums.) Insurers began to refuse to cover any companies that they expected to generate significant claims.

As a result, the **residual risk pool**—the group of employers denied traditional Workers' Compensation coverage and covered instead by the state-established insurer of last resort—grew enormously. (See chart at left.) Nationwide, the share of employers in the residual risk pool increased from about 5 percent in 1984 to nearly 30 percent in 1993, though these rates varied widely by state. (Over 90 percent of employers in Rhode Island in 1989 were in the residual risk pool.)

Though the premiums paid by employers in the residual risk pool are obviously higher than traditional Workers' Compensation rates, they are often also partially subsidized by the state and incompletely experience rated—decreasing the incentive for these already more dangerous employers to reduce their workplace risks. Furthermore, residual-market insurers themselves are less likely to encourage safe work practices since they are typically compensated by a formula that doesn't take into consideration any safety improvements they promote. Though the impact of all this on the nation's safety record might be negligible when the pool is small, it multiplies considerably when large proportions of employers are covered by the insurer of last resort.

Thus in the 1980s, injuries increased not because Workers' Compensation insurance was inherently flawed, but because the world it operated in had changed. Its regulatory structure wasn't flexible enough to handle the double whammy of increasing reported injuries and growing numbers of employers in the residual risk pool, and the nation's safety record deteriorated as a result. It's difficult to say how much these factors contributed to the increase in injuries and illnesses at that time, and other factors such as economic growth probably also played a role. But everything else in the work environment would have predicted a decline in injuries during that period, not an increase—and the trend only reversed itself once state legislatures began reforming their Workers' Compensation statutes to allow for higher premiums, reduced benefits, and more flexibility.

Falls are the third leading cause of injury and the fourth leading cause of death in the workplace.

Workers are much more likely to be injured on the job than to get sick. Acute and chronic work-related diseases, such as silicosis, hepatitis, and repetitive stress disorder, comprise only 5 percent of reported injuries and illnesses.

place safety issues. A classic study by Harvard economist Kip Viscusi examining the impact of OSHA inspections and penalties in the agency's first few years showed no effects on either injury rates or company investments in safety. Several other researchers, using both industry-wide and firm- or industry-specific data, have also found little or no measurable effect of OSHA. But this is not a universally agreed-upon result. One study shows that going through an OSHA inspection reduces the number of citations on subsequent inspections by about one-half, without accounting for any additional improvements in safety due purely to the possibility of being inspected. And a study of manufacturing plants in the early 1980s found that if an inspection led to a penalty, injuries would decline at the inspected plant by over 20 percent during the next few years.

One reason for these mixed results is measurement problems. The increased awareness that comes with new regulations leads initially to increased reporting of injuries that previously would have gone uncounted—so that the reported injury rate may be going up at the same time that the actual number of injuries may be constant or even decreasing. This makes it hard to know what proportion of any change in injuries, whether positive or negative, to attribute to regulatory efforts. Also, during most of the 1980s the agency followed a "records check" procedure whereby firms with high prior violations were more likely to be inspected again—giving employers an incentive to underreport workplace injuries and further confusing the relationship between reported and actual injuries.

A second reason for these results is the constraints under which OSHA operates. OSHA inspects just a small number of employers—in 2002, only about 100,000 out of the approximately 8 million workplace establishments in the U.S. And when it does find violations, the fines are often quite small. The fine for a typical, nonegregious violation cannot exceed $7,000, and overall the agency meted out a total of only $73 million in penalties in 2002. Finally, it does not have regulations for all the potential causes of workplace injuries; for example, there is no OSHA standard for ergonomic or musculoskeletal injuries, which account for one-third of all injuries on the job. It is difficult for the agency to have a large impact under these circumstances.

On the other hand, compliance appears to be better than one might expect given the small probability of actually being inspected, a result that economist David Weil attributes in part to employers making compliance decisions "on the basis of potential, rather than actual, penalties" and in part to employers learning about the cost savings they can reap by following OSHA regulations. Nonetheless, it seems clear that while OSHA may help improve safety, the agency cannot be solely responsible for the overall decline in injuries since the 1970s. Though the story of the trend in workplace safety may begin with OSHA, it cannot end there.

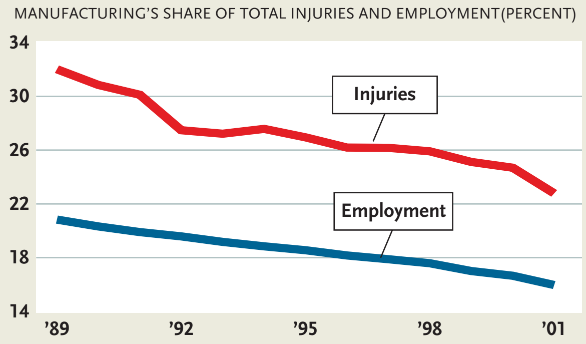
THE CHANGING ECONOMY

Another element in the story is the state of the economy. Historically, economists have thought that workplace injuries are more likely to happen in periods of fast employment growth, when workers are often either less experienced or working harder than usual. This may have been part of the problem at McWane in the 1990s; the *New York Times* reported that some McWane plants' worker turnover rates exceeded 100 percent per year. Inexperience may also have been a factor in the overall increase in injuries in the late 1980s, an era of economic expansion that drew many new workers into the labor market. But the next expansionary period, the mid-to-late 1990s, saw declines in injuries and illnesses even as the economy grew; so the relationship between growth and injuries is now less clear. Whether other factors trumped the pro-cyclical effects of the economy or whether growth no longer affects safety has not yet been determined.

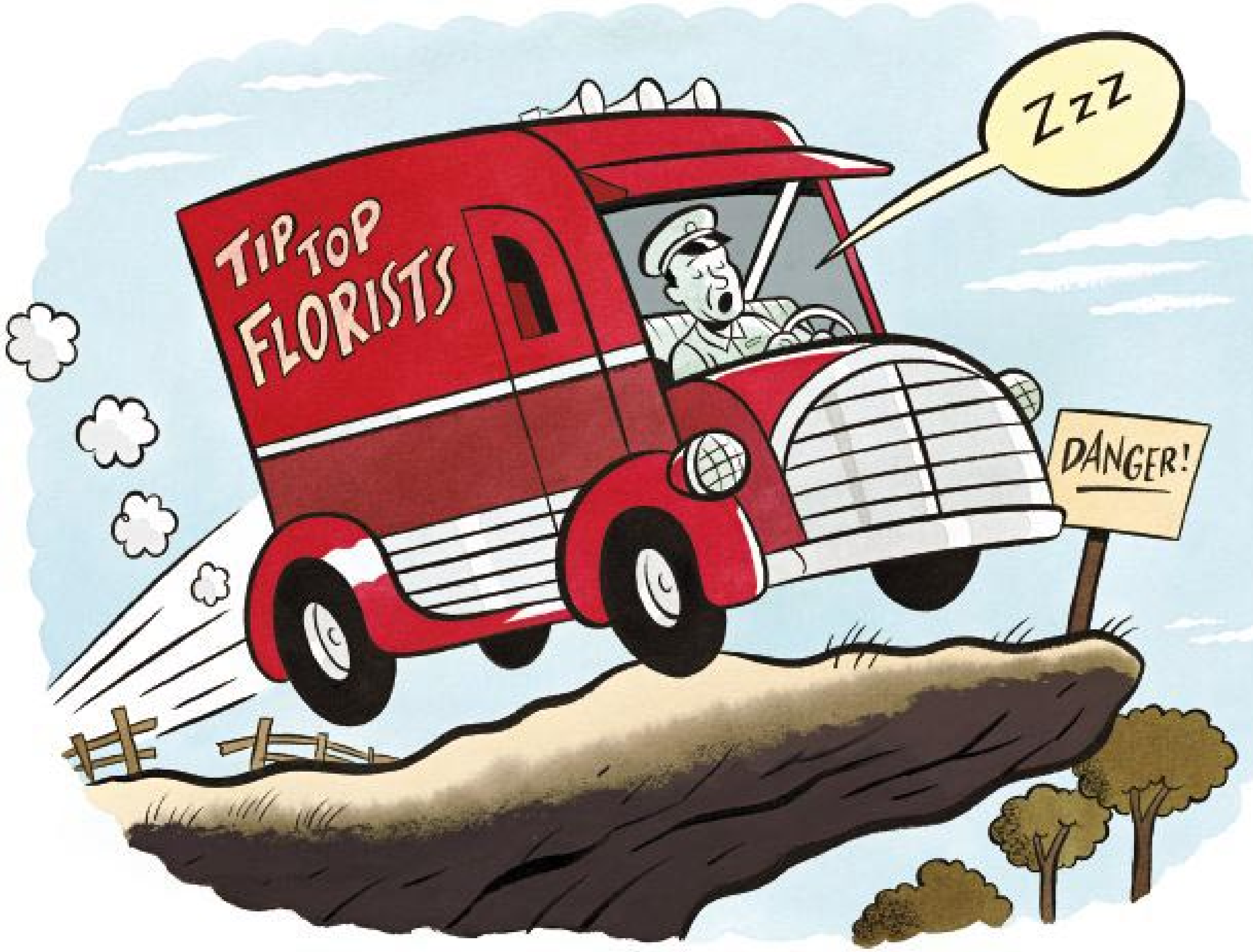
A more important economic factor is shifts in the mix of jobs in the economy, since the most hazardous occupations and industries are far less common in the United States than they were a generation ago. Though some dangerous jobs, like truck driving and nursing, continue

Fewer but safer jobs in manufacturing

The drops in manufacturing's share of employment and injuries have spurred improvements in the nation's safety record.



SOURCE: Bureau of Labor Statistics



Jobs today are safer, and fewer people work in the most dangerous occupations

to be well represented, many of the most unsafe jobs (like timber cutting and deep-sea fishing) have become less so. Meanwhile, employment in safer occupations such as computer specialist and desktop publisher is expected to grow faster than average. Indeed, if the industry mix in the U.S. had not changed since 1973, there would have been about 10 percent more workplace injuries in 2001 than actually occurred.

Employment shifts out of manufacturing are a particularly important driver of this trend. Manufacturing is one of the most dangerous ways to earn a living in the U.S.; more than 8 out of every 100 manufacturing workers were injured on the job in 2001. But manufacturing's share of overall employment has declined from 30 percent to 16 percent since 1973 (see chart on page 16). So one would expect the overall injury rate to be declining also. And in fact, rough calculations show that shifts out of manufacturing jobs account for at least half of the 10 percent decline in injuries resulting from the changing industry mix.

New Englanders are just as likely to be injured on the job as workers in other regions, but our fatality rate is one of the lowest in the nation.

THE INSURANCE INCENTIVE

For the most part, changes in regulations and the economy have improved the nation's safety record.

What is the deadliest job in America?

The U.S. Bureau of Labor Statistics reported 5,524 fatalities in civilian workplaces in 2002. But which jobs are the deadliest? By number of deaths, commercial truck driving is the deadliest occupation. 808 truck drivers (out of 3.2 million total) were killed on the job last year—80 percent of them on the road. Many other common occupations also experience a large number of deaths: for example, farm workers, construction laborers, police and detectives, and electricians. Measuring the number of deaths is particularly useful for regulators and insurers who want to cut overall fatalities; a small improvement in safety for an occupation with a large number of workers can have a major bottom-line effect.

Which occupation had the highest fatality rate? The fatality rate, calculated as deaths per 100,000 people, accounts for the fact that some occupations are much more common than others. For example, 162 store owners and managers were killed on the job in 2002, making it the fifth most deadly occupation as measured by number of deaths. But since nearly 5 million people work as sales supervisors, only 3.4 store supervisors per 100,000 died on the job—a rate better than the national average.

CORBIS

Selected occupations with the highest number of fatalities

OCCUPATION	FATALITIES	FATALITY RATE
Truck drivers	808	25.0
Farm occupations	519	28.0
Construction laborers	302	27.7
Non-construction laborers	181	14.3
Store owners and managers	162	3.4
Groundskeepers and gardeners	146	15.0
Police and detectives	140	11.6
Retail sales workers	132	1.9
Electricians	116	13.5
Vehicle mechanics	115	6.3
Top ten (17.5 percent of workforce)	2,621	10.9
All occupations	5,524	4.0

Selected occupations with the highest fatality rates

OCCUPATION	FATALITIES	FATALITY RATE
Timber cutters and loggers	72	133.3
Fishers	33	73.3
Airplane pilots and navigators	90	69.8
Structural metalworkers	39	58.2
Drilling and mining workers	58	50.4
Sailors and ship officers	27	46.6
Driver-sales workers	58	37.9
Roofers	87	37.0
Electrical power installers & repairers	41	32.5
Farm occupations	519	28.0
Top ten (2.1 percent of workforce)	1,024	36.1
All occupations	5,524	4.0

NOTE: Data are for 2002 SOURCE: Bureau of Labor Statistics

Fatality rates are preferable when trying to compare the risk of death across occupations. By this measure, truck driving and construction are still deadly, but they no longer top the list. Instead, timber cutters lead the index, with a fatality rate more than 30 times the national average. Last year about one out of every 750 lumberjacks died on the job, a staggering figure. Many of the occupations that people think of as hazardous have lower rates. Construction workers are eleventh on the list (28 deaths per 100,000 workers), firefighters are thirteenth (20 per 100,000), and police are eighteenth (12 per 100,000). But the jobs with the highest fatality rates account for a very small fraction of workers nationwide. Only one—farm occupations—employs more than 0.2 percent of the labor force, while teachers, for comparison, clock in at 4.1 percent.

On the flip side, what is the safest occupation? It is difficult to say, but a major contender is: economist. None has died on the job since the government started keeping records. —*Brad Hershbein*

But Workers' Compensation has had mixed results. Workers' Compensation was the nation's first social insurance program. Before it was instituted, reparation for workplace injuries and deaths was based on establishing legal liability for the accident. Injured workers had to demonstrate in court that their employers were the sole cause of their injury. This led to unpredictable and capricious legal outcomes for both sides. Workers rarely won, but when they did, they typically received large settlements.

To solve this problem, states began enacting Workers' Compensation statutes based on the principles of the German system of compensation, which had been established several decades prior. Neither side had to establish liability for a workplace injury. Instead, employers were required to carry insurance to cover all injuries in the workplace, regardless of fault. Insurance premiums were "experience rated" so that more dangerous firms and industries paid higher rates.

The safety incentives that Workers' Compensation creates are complicated. On the one hand, insurance provides employers with a clear reason to reduce safety hazards; their premiums should decrease when they implement safer work practices. On the other hand, it may discourage workers from working safely, since they are guaranteed at least some replacement of their wages if they are injured on the job. As a result, the early years after Workers' Compensation was implemented were spent working out kinks in the system that had led, for example, to increased injury rates in the mining industry. (A guarantee of income meant that miners, paid by the ton rather than by the hour, had less incentive to spend time on safety precautions.) Most industries, however, experienced injury declines.

Nearly a century later, several studies by economist Richard Butler and colleagues indicate that as Workers' Compensation benefits rise, workers are likely both to take more risks while working and to report claims on injuries that they might have let go at a lower benefit rate. To combat some of these effects, state legislatures have tweaked their Workers' Compensation statutes in recent years. States have introduced changes like increased deductibles for employers, increased waiting times before benefits kick in, increased penalties for fraud, and greater incentives to return employees to work as quickly as possible after an injury. But in the end, the incentives that Workers' Compensation insurance creates today are not much different than they were nearly 100 years ago.

What has become more complicated in recent years, however, is how those incentives interact with events outside the insurance system and how those interactions affect workplace safety. In the 1980s, for instance, a spike in reported injury rates led to increasing insurance costs, which led to more employers being covered by the state insurer of last resort—both of which ultimately resulted in the only sustained increase in workplace injuries since OSHA began keeping records. (See sidebar on page 14.) Market forces caused these changes, not Workers' Compensation—but the economic structure of Workers' Compensation compounded their effects.

INSIDE THE ORGANIZATION

In the end, though, these factors affect safety because of the policies and procedures of particular organizations. Safety-conscious employers may, for example, follow OSHA's recommendations by organizing health and safety committees: groups of employees who work together to ferret out and eliminate safety risks in the workplace. Others may get involved with OSHA programs that outline best practices for their industry, or they may help develop voluntary compliance programs aimed at improving safety.

Likewise, employers in a period of industry or firm growth may reduce risks by providing more safety training to their workers or hiring a new safety manager. Or they may adapt to the pressures of Workers' Compensation by installing antiskid mats in restaurants, ergonomically designed keyboards and chairs for typists, or safety guards on production machinery—all of which can help to cut claims costs. While employers may be making these changes partially due to the incentives they face—the carrot of reduced Workers' Compensation premiums or the stick of potential OSHA citations—these incentives also create an environment in which promoting safety is the easy, economically rational thing to do.

What's more, many employers enact stricter safety protocols than what is statutorily required of them. One example is McWane's cross-town rival, the American Cast Iron Pipe Company (ACIPCO). ACIPCO faces the same regulations, economic conditions, and insurance restrictions as McWane. But rather than making headlines as one of the nation's most unsafe employers, ACIPCO instead has made *Fortune*'s list of the best employers in the country. And the *New York Times* reports that ACIPCO has one-fortieth the number of OSHA citations as McWane. ACIPCO has apparently found a better way to do business, perhaps in part because it is worker owned (the company was willed to its workers in 1924 by its original owner) or perhaps for other reasons. In any case, they have been able to do what McWane has not—operate within the constraints of their environment to create a workplace that is both productive and healthy. ❋

FOR MORE INFORMATION

Occupational Safety and Health Administration
www.osha.gov

Bureau of Labor Statistics
www.bls.gov

National Safety Council
www.nsc.org

National Council on Compensation Insurance
www.ncci.com

Iraqis change 10,000-dinar notes for smaller denominations last summer in an exhange set up to shorten long bank lines. New currency was introduced in October.

The Iraqi Central Bank building after it was looted and burned following the collapse of the Baathist regime.

BENJAMIN LOWY/CORBIS; RIGHT, TOP: LYNSEY ADDARIO/CORBIS; BOTTOM: TERU KUWAYAMA/CORBIS

BY CHRIS FOOTE

Reviving the Iraqi economy in the aftermath of war

It's a pitch-black midsummer night in Baghdad, and I'm standing outside the Republican Palace, hoping for a ride back to my hotel. Four giant busts of Saddam Hussein sit atop the palace roof and look down on me as I wait. In the darkness, I hear occasional bursts of gunfire, but I know the shots are not fired in anger. Hours earlier, up in Mosul, Saddam's sadistic sons, Uday and Qusay, met their ends in a hail of American bullets. Just moments ago, standing in the palace, I saw the American military commander arrive to confirm news of their deaths. (His smile was so bright it cut through the darkness of the dimly-lit rotunda.) Residents of Baghdad are so ecstatic to learn that Uday and Qusay will not be around to terrorize them anymore that they celebrate in their favorite way—by blasting gunfire into the air. Unfortunately, what goes up must come down, and the bus drivers who shuttle coalition workers back and forth between the palace and the Al-Rasheed Hotel worry that some bullets will come down on them. They've suspended the shuttle service for the evening, which has stranded me, after midnight, without a ride home.

I could walk back to the hotel if I wanted. The area between the palace and the hotel lies within the "green zone," completely protected by the U.S. Army. But it's a long walk—about 1.5 miles—and it's still hot outside. (July temperatures in Baghdad range from 80 to 110 degrees.) Also, the walk takes me uncomfortably near Iraq's Tomb of the Unknown Soldier and the "crossed swords" monument where Saddam used to review his troops. I decide to take my chances hitching a ride on an Army Humvee passing on the road in front of the palace. But it's been about 15 minutes, and no luck. So I wait.

Talking with people now about my summer stint as an economist in Baghdad is not easy. Everyone wants to know: "What was it like over there?" Sometimes I'm tempted to answer, "I don't know, what was it like back here?" Every big place—the United States, Iraq, Boston—has millions of stories, millions of people embedding their private lives amid the wider world around them. I can't hope to summarize "what's going on" in Iraq with a few sentences. I can only talk about my own experiences.

People are often surprised to learn that I rarely felt in danger during the entire three months I was there. My feeling of safety came partly from the fact that I spent most of my time ensconced on the second floor of the Republican Palace, which by July had become one of the best-fortified bits of real estate in Asia. It also may have stemmed from my native Midwestern trust: I'm an economist, not a soldier. I came to help Iraq's economy get moving. Why would anyone want to hurt me?

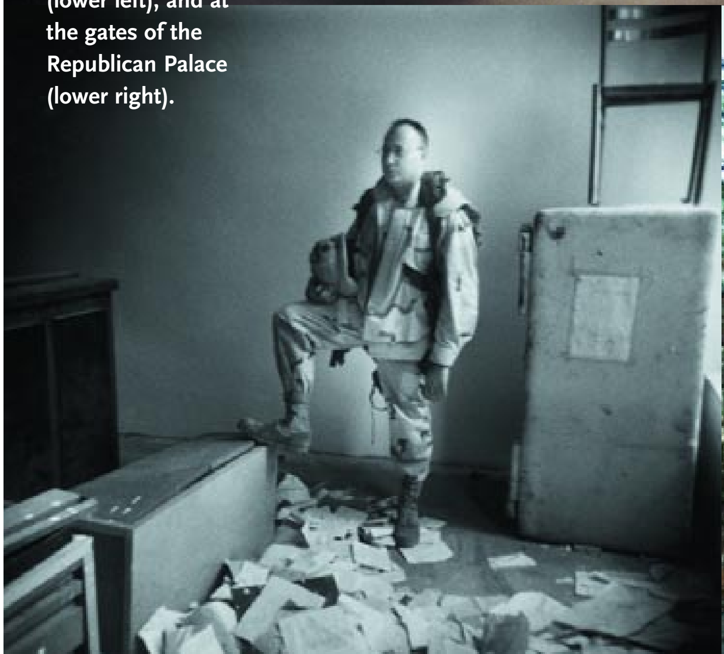
My typical workday starts at 8:00 a.m. and lasts until 11:00 p.m. (Everyone in the palace works long hours.) My job is to help Peter McPherson, the coalition's director of economic policy, answer macroeconomic questions. In many ways, the job is similar to the one I held at the Council of Economic Advisers (CEA) before coming to Iraq. There the economic questions changed from day to day, sometimes from hour to hour. Baghdad is the same. What is the best way to fix Iraq's currency? How could foreign investment help Iraq? What tariff regime should we recommend? The questions are all over the map, so I draw more from my experience teaching macroeconomics to undergraduates, and less from my own specialized research.

The macroeconomic model I take with me to Iraq is simple: In the long run, markets and prices allocate resources efficiently, so it's best to keep government interventions in the market to a minimum. But in the short run, prices don't adjust to changing circumstances right away, leading to temporary problems like recessions. Because the U.S. economy is set up well, the problems at the CEA were usually of the short-run variety. Iraq is different. Under Saddam, Iraq's economy was riddled with corruption, inefficiency, and waste. The looting and sabotage to the country's infrastructure immediately after the war made things worse. The job of the economists I work with is to stabilize the economy from the immediate effects of the war, then help to put the country on a solid long-run foundation.

One of the toughest problems Iraq faces is what to do about its state-owned industries. After the British-installed monarchy was overthrown in 1958, successive Iraqi governments tried to diversify the economy by building state-run factories. Because these factories were owned by the government and not by pri-

>>>>EVERYONE WANTS TO KNOW: "WHAT WAS IT LIKE OVER THERE?" SOMETIMES I'M TEMP

TOP AND BOTTOM LEFT: TERU KUWAYAMA/CORBIS; BOTTOM RIGHT: REUTERS/CHRIS HELGREN/CORBIS



Soldiers stand guard at an Iraqi bank (above); at the Central Bank (lower left); and at the gates of the Republican Palace (lower right).

TED TO ANSWER, "I DON'T KNOW, WHAT WAS IT LIKE BACK HERE?"

vate investors, many of them became models of inefficiency, surviving only through government subsidies. An important part of economic reform will be to reduce these subsidies and divert government revenue to more productive uses, such as investments in education, transportation, and the oil industry. But reducing subsidies too quickly or too much would force many state-run factories out of business, worsening the unemployment problem.

Cutting the subsidies to consumers may prove even more difficult. Iraq's oil exports were prohibited by the United Nations after its 1990 invasion of Kuwait. Since 1996, Iraq has been able to export specified amounts of oil under an "oil-for-food" program run by the United Nations. Iraq's government distributed the food and other goods it purchased through this program at prices far below their market values. A nominal fee of 250 dinars (about 15 cents) buys a month's food ration. Subsidies also extend to goods produced inside Iraq—four cents gets a gallon of gas. In the long run, these prices will have to rise if the economy is to have the right market incentives, but price increases will also have to come about as part of an overall program that maintains Iraqis' living standards.

Like doctors performing triage, we leave these reforms for later. More pressing concerns include restarting the banking system, which is crucial for resuscitating the country's private sector. Postwar looting damaged many of the 300+ bank branches. To reopen them, we move cash around the country under military guard. Figuring out which banks can open, and when, takes up countless meetings for several weeks.

Early on, I visit Iraq's Central Bank, which was also destroyed by looters. Our mission is to check on the Treasure of Nimrud, a collection of ancient Assyrian jewelry that was stored in the bank's vault for safekeeping in the early 1990s. The bank's basement was flooded with sewage water during the looting and has only recently been drained. Our group trudges down the unlit, still slimy stairs, careful not to slip. When we reach the bottom, I see that the corner of one of the vault doors has been peeled away, as if by a giant can opener. I am told that during the postwar chaos, someone tried to open this door with a rocket-propelled grenade, incinerating himself in the process. (The lock in the door held.) The deputy head of the Central Bank jiggles a number of keys and opens another door nearby. We are happy to learn that the treasures are intact.

Another financial problem we face concerns Iraq's currency. Only two denominations of the "Saddam dinar" circulate widely—one worth about $5, another worth about 15 cents. Some of the plates and paper to make the larger note have been stolen, so everyone worries about counterfeits. This fear has caused the larger bill to trade at a discount to the smaller one, making it impossible to pay government salaries in the local currency and forcing Iraqis to carry bags of the smaller bills whenever they go shopping. We decide to start printing the smaller bills in an effort to raise their supply and thereby cut the discount. Yet the discount remains stubbornly positive, making our jobs that much harder.

CHRIS FOOTE

Author Chris Foote (center with hat) stands with residents of Mosul at a stopover during his flight to Baghdad in late May.

>>>> UNDER SADDAM, IRAQ'S ECONOMY WAS RIDDLED WITH CORRUPTION, INEFFICIENCY, AND WASTE. LOO


Postwar looting damaged the Central Bank (pictured here) and many bank branches. Figuring out which ones could reopen took several weeks.

THOMAS HARTWELL/CORBIS SABA

TING AND SABOTAGE TO THE INFRASTRUCTURE AFTER THE WAR ONLY MADE THINGS WORSE.

SORTING OUT THESE PROBLEMS often leaves us frustrated. At our daily meetings, tempers can be short. Our frustrations stem from the workload, from the 6,000 miles that separate us from our families and friends, and from the oppressive Baghdad heat. We sweat over laptops and gulp down bottles of water until the palace's air conditioner is fixed at the end of June. But the Iraqis we work with go home to much worse conditions.

I come to appreciate my room back at the Al-Rasheed Hotel a great deal by the time the summer ends. Coalition workers fill the hotel, which (like the palace) is heavily guarded. My room is on the ninth floor, and from my window, I have a great view of Baghdad. I love to look out the window, whenever the hotel's electricity goes out—which happens every few days—to see how much of the city is dark. During the day, I can see a number of smoke-damaged buildings, including one that looks like a bombed-out ziggurat. Straight down, I see the wing of the Al-Rasheed that houses a number of restaurants and shops. The roof is covered with eight-pointed stars, the symbol of the Baath party.

In the hotel coffee shop one day, a woman who grew up in the Kurdish part of Iraq spends two hours telling me of life under the Baathists. When she was a girl, her father had to flee for his life, and his family hid from Saddam's men for months in their own house. They later escaped by foot over the mountains to Iran. She also tells me of a 16-year-old boy she knew. At school one day, the boy made a single, offhand comment disparaging the regime. After he got home, policemen visited his house, called him outside, shot him dead, and threw a piece of paper on his body—an order to his family not to give him a proper Islamic burial. His father disobeyed and buried his son with the appropriate ceremony. The men came back later and shot the father.

Over lunch in the palace cafeteria, two young Iraqi women working as translators tell me that they never talked politics in the old days. You didn't know if someone would turn you in for what you said. "I'm even a little nervous talking about this now," one of them said as she ate her lunch alongside dozens of U.S. troops.

While many Baghdad residents grow frustrated with the pace of the reconstruction during the summer, ending Saddam's regime has earned the coalition a great deal of goodwill. Children—Iraq's least political residents—seem to appreciate us the most. When I end a visit to the Central Bank or Ministry of Planning to go back to the palace, I typically see my military escorts hanging out with curious kids from the city. The children seem fascinated with all things American—especially Army paraphernalia—and they peer at me through a backseat window as my SUV inches its way down Baghdad's crowded streets. One of the best pictures I took in Iraq shows two boys, each about 11 or 12 years old, pressing their faces up to my window, as if I am a strange goldfish in a bowl.

I often wish I could hop out of my fish bowl and learn more about Iraq's economy by talking with people in the streets. Much of what I learn comes from the Iraqi economists with whom I work. We share a similar language and way of thinking, even though their English is sometimes halting and my Arabic is nonexistent. As economists, they speak with special sadness about the economic tragedies of the past. One Central Bank official told me of not being able to give his children the same standard of living his father gave him. "I was in kindergarten in the 1950s, but now I can't send my children to kindergarten," he said. "It costs too much money." Another, who holds a Ph.D. from a British university, recounts the time he wanted to figure the nation's balance-of-payments accounts using accurate methods. His bosses said no—they didn't want to publish bad news.

It amazes me that a sliver of Iraq's population wants to see those days return. Although I personally felt safe, security concerns were quite serious. Two economists with whom I worked, one from the International Monetary Fund and another from the British government, were injured in separate incidents. I know the British economist, Jacob Nell, the best. He is the type of person you would want rebuilding your country, with smarts, energy, common sense, and a cowboy-style straw hat that looks funny on someone who went to Oxford. On October 26, a rocket went through Jacob's window in the Al Rasheed, flew over his bed, and exploded in his bathroom. As I write this, Jacob is back in Britain, recuperating from injuries to his leg.

I EVENTUALLY FIND a ride home to the hotel on the night that Uday and Qusay are killed. A truck comes by driven by a soldier named Tony, who, in an astounding coincidence, is also detailed to the economics unit. I hop in the front seat, thank him profusely for the ride, and ask him how his day went.

"Not that good," Tony replies. He tells me of the trip he took with former prisoners of the regime, each of whom had a hand amputated while in jail. The men had heard a rumor that their hands had been buried under a tree near the prison. So Tony drove them to the prison, they dug up the dirt around the tree—and found nothing. The prisoners rode home discouraged.

After about five minutes, we arrive at the Al-Rasheed. As I hold up my identification badge to the troops guarding the hotel's front gate, I look forward to getting back to my bed. I need to sleep. Tomorrow is likely to be another long day. ☼

CHRIS FOOTE IS AN ECONOMIST AT THE BOSTON FED. HE WORKED IN IRAQ FROM LATE JUNE TO EARLY SEPTEMBER.

Building a trail in the forest isn't as easy as it seems

By Rebecca Zicarelli

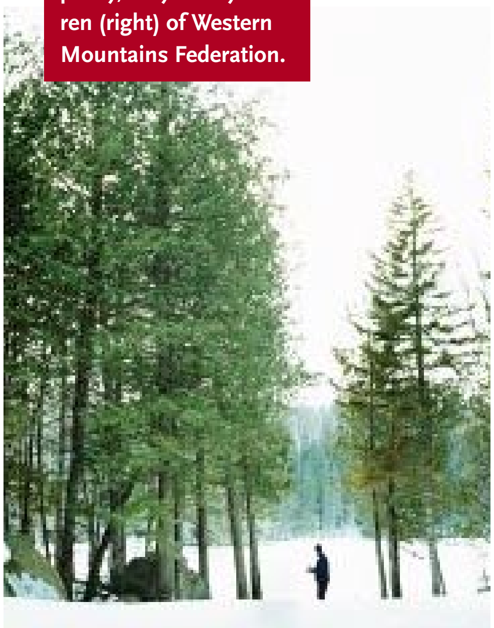
letter from carrabassett valley, maine

Western Maine's forests are common ground. Though some tracts are owned by corporations, others by individual landowners or the state, these distinctions are largely invisible to the recreational travelers who pass through the woods. They can hike, backpack, snowshoe, or canoe the forests and rivers with a freedom unknown in most other states. Yet these shared lands and wild areas have been largely inaccessible except to those rugged adventurers versed in backcountry survival techniques.

Larry Warren, president of Western Mountains Foundation, a community development nonprofit in Carrabassett Valley, proposes to change that. He envisions a 180-

UNWRITTEN COVENANT

"No one ever told me I couldn't go fishing or hunting someplace—there was an open land policy," says Larry Warren (right) of Western Mountains Federation.



PHOTOGRAPHS BY KATHLEEN DOOHER

mile-long path through the woods, tended and groomed, for extended journeys from Bethel to Moosehead Lake. Modeled on the Appalachian Mountain Club huts in New Hampshire and the 10th Division huts in Colorado, the trail would feature rustic lodges spaced a day's journey apart, each with beds, saunas, and home-cooked meals for up to 40 travelers.

Putting a trail through these woods will not be easy, however, since the distinction between private and public use in the Maine forests is far from simple. In other states, such a trail would likely traverse publicly owned lands. But more than three-quarters of Maine—16 million acres—is working forest. Half the state, an area larger then Massachusetts, Connecticut, and Rhode Island combined, is an industrial woodland owned by corporations, complete with roads, pulp trucks, and loggers armed with chainsaws.

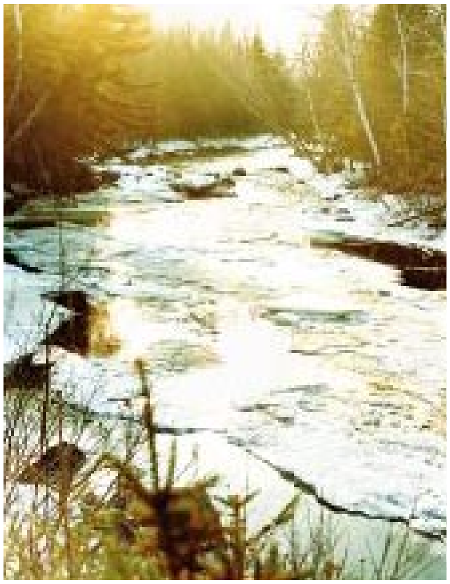
MAKING IT HAPPEN

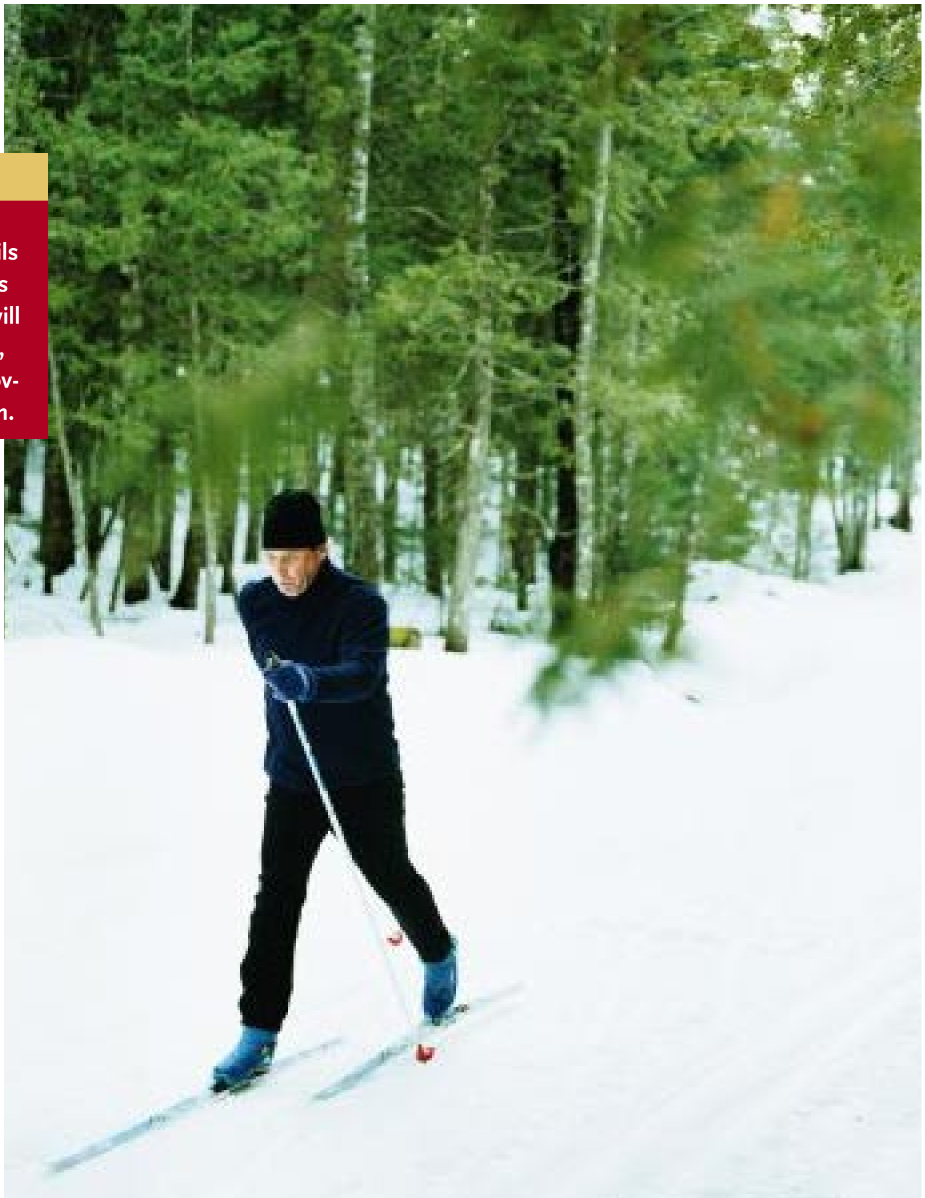
Clearing the way for Maine Huts and Trails will take hiking boots and scythes, but it will also take easements, negotiations, and government intervention.

Although they may not own this vast forest, Mainers have a long history of using it, particularly for recreation. "Nobody ever told me I couldn't go fishing or hunting someplace—there was an open land policy," says Warren. Maine's private land owners have maintained a rarely formalized and highly unusual tradition of open lands. In exchange, they expected stable public policy for forestry management. It was an unwritten covenant between Maine's industrial landowners and the public, a tradition of nearly 200 years.

But by the end of the twentieth century, the covenant had begun to unravel.

Maine residents began to worry about their ability to use the land as huge parcels were bought and sold at an increasingly rapid rate. One-quarter of the industrial forest—2,500,000 acres—changed hands in 1998. Often the new owners were large companies headquartered in the Pacific Northwest or Canada, without ties to the unusual traditions of the Maine woods. Would they gate the roads, people worried? Post No Trespassing signs? Charge access fees for hunting and fishing? Prevent snowmobiling on their roads in the winter? Subdivide favorite scenic places into house lots?





These longstanding arrangements were further threatened in the mid-1990s when environmental groups, to the great concern of property owners, started questioning how the working forest was managed. Fears mounted that industrial landowners were harvesting more timber each year than the forests could replenish. Sustainable forestry—management methods that don't deplete forest resources—became a buzzword. Landowners began to worry that they would no longer be able to earn a return on their forest land investments.

At the same time, recreational use of the Maine woods was growing and changing. Hunting, fishing, and camping were still popular, but a new breed of tourists—ATV riders, rock climbers, paddlers, and mountain bikers—took to the woods in record numbers. Often this meant increasing damage to the landowners' properties and increasing conflict between loggers and tourists. With concerns escalating from landowners, environmentalists, and recreational users alike, Maine needed to rethink the balance between public and private use of the forest.

Maine needs new ways to balance public and private uses of the forest

Warren's hut and trail system is one approach. He proposes to solve the easier part of the problem, increasing public access to private land, by using easements to compensate landowners for allowing the public to use their lands—which would also legalize long-term public access and protect coveted areas from development. Landowners like easements because they increase the economic return from river edges and ridge lines, areas that are desirable for recreation and that, by regulation, cannot be heavily harvested. The plan would also funnel adventurers into clearly defined areas where their play wouldn't interfere with the business of timber harvesting. Most important, the plan would protect landowners' rights to continue managing their land. Though negotiating these arrangements can be a long process, Warren has encountered little resistance from landowners thus far.

The thornier problem has been ensuring the private use of public land. Eight miles of Maine Huts and Trails were slated to pass through the state-owned Bigelow Preserve in Dead River Township. Nestled on the south side of Flagstaff Lake, the preserve is the only plot of Maine's forest specifically set aside by voters; it was created by a 1976 referendum to prevent its development into a ski resort and protect its unspoiled environment. The Bigelow Act also permitted traditional private uses such as timber harvesting, hunting, camping, cross-country skiing, and snowmobiling. No other mechanized traffic is allowed.

As Warren's plan moved forward, controversy erupted over whether groomed cross-country ski trails—an amenity that Warren wants to include and that skiers have come to expect—would be permissible under the Bigelow Act. Many agree with Richard Barringer, head of the Department of Conservation at the time the act passed, that groomed trails would be acceptable and that the act "clearly contemplated economic activity."

But the Friends of Bigelow, the grass-roots environmental organization that spearheaded the Preserve's creation, is opposed. "This development would not be consistent with the spirit of the Bigelow vote, which prevented a giant downhill ski resort from being built on the mountain," argues Richard Fecteau, president of the group. It contends that a trail wide enough to accommodate grooming equipment would be a new road, not only clearly banned by the Bigelow Act but also an invitation to off-road vehicles and ATVs.

In May, the state stepped in to resolve the conflict. Warren's organization agreed to actively search for a route around the preserve through neighboring land owned by the Penobscot Nation. The Friends of Bigelow agreed not to oppose the hut and trail system. And the State of Maine agreed to help Warren negotiate the easements, thus becoming an active partner in the effort to make Maine Huts and Trails a reality.

It may take some time to work out the details, but in the end the trail could have a big impact: Warren expects that within five years the trail will draw 30,000 user-days per year to a part of the state that is desperate for new economic activity. More important, it will serve as a living example of a new way to balance public and private land use in western Maine so that everyone can benefit: the owners, the users, and the forest itself. ✻

Rebecca Zicarelli is a freelance writer from Bethel, Maine, who writes on the forest products industry, land use, tourism, and the economy of western Maine.

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The *Regional Review* (ISSN:1062-1865) is published by the Federal Reserve Bank of Boston.

PHOTOGRAPH BY NUBAR ALEXANIAN

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