



La Follette Policy Report

ROBERT M. LA FOLLETTE SCHOOL OF PUBLIC AFFAIRS

VOLUME 11, NUMBER 2, FALL 2000

DIRECTOR'S PERSPECTIVE

In the last issue of the *La Follette Policy Report*, we told you about our new Master of International Public Affairs degree program. This fall we enrolled our first students in that degree program—10 committed individuals who plan to apply their training in public or public-minded agencies in both the United States and abroad. Next year's enrollment promises to more than double in size.

In addition to the new MIPA program, we initiated the Capstone Graduate Certificate Program, which consists of four courses designed for staff of the Wisconsin state legislature. Once staff have completed the certificate requirements, they may apply to one of our regular degree programs. Their twelve credits will count toward the 42-credit requirement for the master's degree.

We continue to hire new faculty and are pleased to

continued on page 14

IN THIS ISSUE

Trade, the WTO, and
Globalization, 1

Social Insurance, 7

Genetically Modified
Organisms, 11

Wisconsin
Manufacturing, 15

What's so Scary About Trade, the WTO, and Globalization?

By Jeffrey R. Bernstein

Jeffrey Bernstein is assistant professor of public affairs and agricultural and applied economics at the University of Wisconsin–Madison. He specializes in international trade, industrial organization, and business history. Professor Bernstein has conducted research on topics ranging from empirical tests of trade theory to a historical case study of the convenience-store industry. In this article he examines why trade policy and the World Trade Organization have been so controversial in the United States recently.

In the not-so-distant past, trade negotiations were sleepy, backroom affairs. The negotiations for the last round of the General Agreement on Tariffs and Trade (GATT) were launched in 1986 in the Uruguayan seaside resort of Punta del Este, far from the media spotlight and, it is safe to say, little noticed by most individuals other than trade policy specialists and hard-core policy wonks. By contrast, the November 1999 Seattle ministerial meeting of the World Trade Organization (WTO), the GATT's successor, attracted thousands of demonstrators, whose ostentatious and occasionally violent protests were broadcast live throughout the world over television and the Internet, and plastered on the front pages of newspapers.

The so-called "battle in Seattle" should not be seen as an isolated incident, but as part of a broader backlash against trade liberalization that has been building in the United States over the past decade, starting with the motley coalition of activists, including labor leaders, environmentalists, left-wing consumer advocates (Ralph Nader), billionaire industrialists (Ross Perot), and

right-wing ideologues (Pat Buchanan) that came together to fight passage of the North American Free Trade Agreement (NAFTA). Though unsuccessful in forestalling NAFTA, the same forces have forced a stalemate in trade liberalization, first by blocking the approval of presidential fast-track negotiating authority on subsequent trade talks, and now by contributing to the failure of the WTO to agree on the parameters for launching a new negotiating round. (I say "contributing" because what ultimately caused the talks to break down were significant disagreements among WTO members on the negotiating agenda for the next round of talks.)

Why have trade policy and the WTO become so controversial in the United States today? The disparate nature of the anti-WTO coalition suggests a variety of motives, but underlying the many specific interests is intense anxiety about the effects of "globalization," that is, the increased integration of world commodity and financial markets. This essay focuses on a few of the main objections that have been raised with regard to trade liberalization and the WTO. Although there is certainly room

for judicious concern about the effects of increased trade flows and about some institutional features of the WTO, upon examination it turns out that much of the opposition to the WTO is founded not on carefully reasoned arguments but on exaggerated fears (what some scholars have called “globophobia”) and flawed assumptions about trade and the role of the WTO (“globaloney,” first used by Claire Booth Luce but popularized more recently by Paul Krugman).

Trade Liberalization and the Role of the WTO

Before examining some of the criticisms that have been articulated by opponents of the WTO, I briefly outline the case that, in general, trade liberalization is good for economic well-being, and that the WTO has a valuable role to play in promoting trade liberalization.

Trade Liberalization Promotes Economic Welfare

The main argument for trade liberalization rests on the principle of comparative advantage. The basic idea is that, by specializing in goods that they can produce at a relatively lower cost and trading for goods that they can produce at a relatively higher cost, a country’s citizens can obtain a higher standard of living than if they tried to produce all products domestically (see example below for a numerical illustration of this argument).

This theoretical argument can be formulated in quite general terms, and it is one of the few propositions on which virtually all mainstream economists agree.

Of course, there are exceptions to the rule that trade liberalization improves economic welfare. As a practical matter, though, economists believe that such cases are rare. The argument that trade liberalization increases economic welfare rests not just on theoretical speculation but on empirical evidence. Studies have found that the more open a country is to trade (as proxied by a variety of different measures), the higher are its level of per-capita income and its rate of economic growth. The evidence is not as incontrovertible as some scholars would like, and we still do not know enough about the precise channels through which trade openness affects growth. However, the disagreements center not so much on whether trade openness raises living standards, but on the size and significance of this effect. Even more vivid than the statistical evidence are impressionistic comparisons of similar countries or groups of countries that have adopted different trade policy regimes. A striking observation from the past half-century of development experience is that nations which adopted more outward-oriented trade and investment policies experienced more rapid economic growth than those which restricted trade through policies of import substitution. To be sure, openness to trade was not the only reason for the discrepancies in long-run economic performance,

A SIMPLE EXAMPLE OF COMPARATIVE ADVANTAGE

Suppose the United States has 200 workers and Mexico has 100, and that a U.S. worker can produce 10 shirts or 5 computers in a year, and a Mexican worker can produce 5 shirts or 1 computer in the same period. The United States can produce computers and shirts more efficiently than Mexico, but it is relatively more productive in manufacturing computers. Consequently, both the United States and Mexico can gain from trade if the United States specializes in computer production and Mexico in shirt manufacturing. To see this, assume for simplicity that initially half the workers work in each industry. Then the United States will produce 1000 shirts and 500 computers, and Mexico 250 shirts and 50 computers. Now, let 10 American workers move from making shirts to building computers, and 25 Mexican workers from computers to shirts. As the table shows, specialization will increase the global production of computers and shirts by 25 units apiece. For the two countries to engage in trade, the price of a computer in terms of shirts must be between 2 and 5, the original U.S. and Mexican prices, respectively. Suppose the price is 3 shirts per computer, and 40 computers are exchanged. As the table illustrates, both the United States and Mexico will, through specialization and trade, end up with more shirts and computers than they originally consumed.

An Illustration of Comparative Advantages and Gains from Trade

Autarky (No Trade)	Shirts	Computers
United States	100x10= 1000	100x5= 500
Mexico	50x5= 250	50x1= 50
Total	1250	550
Specialization		
United States	90x10= 900	110x5= 550
Mexico	75x5= 375	25x1= 25
Total	1275	575
Trade		
United States	900 + (40x3)= 1020	550 - 40= 510
Mexico	375 - (40x3)= 255	25 + 40= 65
Total	1275	575

Assumptions: The United States has 200 workers, each of whom can produce 10 textiles or 5 computers. Mexico has 100 workers, each of whom can produce 5 textiles or 1 computer. Originally each sector employs half the workers in a country. Under specialization, 10 U.S. workers move from shirts to computers, and 25 Mexican workers from computers to shirts. With trade, the price of computers in terms of shirts is 3, and 40 computers are exported from the United States to Mexico, in exchange for 120 shirts.

nor even necessarily the most important one, but it is hard to argue that trade made no difference whatsoever.

The WTO Has an Important Role in Promoting Trade Liberalization

Why, then, don't all countries unilaterally open their markets to foreign goods and services? The main reason is that gains and losses from trade are unevenly distributed. Although trade increases a country's total income, workers and shareholders in sectors where the country has a comparative disadvantage will be harmed. This harm is concentrated among a visible, cohesive group of individuals, while the benefits of liberalized trade accrue to a diffuse population. For instance, Stephen Marks of Pomona College has calculated that American import restrictions on sugar cost U.S. consumers around \$2.8 billion per year, but yield gains to U.S. producers of \$2 billion. Overall, there is an economic loss of \$0.8 billion, but the consumers' loss is spread across 250 million Americans and is therefore not terribly significant for each individual—about \$11.50 per person annually. The gains for producers, by contrast, accrue to only 10,000 sugar beet farms and 1,000 sugar cane farms; each beet farm benefits by more than \$50,000, and each cane farm in excess of \$500,000. Thus sugar producers have a strong incentive to lobby for import restrictions, whereas consumers have little to gain from pressing for their removal. In this manner, concentrated interests can block trade liberalization that would improve the welfare of most Americans.

At the domestic level, to overcome the possibility of trade policy being “captured” by protectionist interests, the U.S. government has adopted mechanisms that have tried to shelter the locus of trade policymaking for protectionist pressures: in effect, Congress, being more vulnerable to geographically based interest groups, has tied its hands and delegated authority to an agency of the executive branch, the U.S. Trade Representative (USTR), that is thought to be somewhat more insulated from protectionist demands. At the international level, the United States has employed what I. M. Destler has called “benign mercantilism,” bartering greater access to U.S. markets for greater access to foreign markets. The chief vehicle for this policy has been the GATT and its successor, the WTO.

Established in 1948, the GATT consisted of a series of agreements among a group of nations, establishing some basic principles of trade relations and commitments to certain agreed-upon tariff levels. Between 1948 and 1995, there were eight GATT negotiating rounds. Early rounds focused largely on tariff reductions and involved a relatively small number of countries (see table).

The success of the GATT in reducing tariffs is indisputable. In the eight rounds of negotiations since the creation of the GATT in 1948, average tariffs in industrial countries have fallen by a factor of ten, from 40 percent to 4 percent. Along with improvements in transportation and communications technologies, these reductions in

tariffs and other trade barriers have generated an increase in the volume of world trade of about twenty-fold (By comparison, world incomes have risen approximately seven times in the same period).

Later rounds—particularly the Tokyo and Uruguay Rounds—involved not only a much larger number of countries, but a negotiating agenda that was broadened in two ways. One was to include industries that had been excluded from previous consideration, especially textiles, services, and to a lesser extent, agriculture. The other was to expand the negotiations' scope to cover non-tariff impediments to market access. In part, this reflects GATT's success in reducing tariffs. Constrained by their commitments on tariffs, governments pursuing protectionist policies have resorted to using less transparent, non-tariff barriers to trade, and the trade policy agenda has had to respond to greater use of such impediments. The broader policy agenda has, however, made negotiations more contentious and longer in duration (see table). It has also provoked greater opposition to the further expansion of the WTO's mission, as the lines between purely domestic policies and trade policy have become more blurred. It is in these areas, specifically, where the threat of the WTO has been most widely perceived.

The Case Against the WTO

Trade liberalization in general, and the WTO in particular, have had to address a number of concerns, including income inequities across and within nations, issues of democracy and national sovereignty, the extent of corporate domination, workers' health and safety, and environmental issues.

The Threat to Income Equality

Many foes of trade liberalization attribute rising economic inequality in the United States to the greater trade exposure of the U.S. economy. There is indeed a plausible theoretical argument relating the two. Compared to other nations, the United States possesses a relative abundance of skilled labor and capital, and a relative dearth of unskilled labor. Comparative advantage suggests that for the United States, trade will tend to increase the production of goods and services that intensively utilize skilled labor and capital, and decrease the output of goods and services that rely more heavily on unskilled labor. Moreover, the gap between the wages of unskilled and skilled workers has grown markedly over the past few decades. In 1963 the median salary for males with a bachelor's or advanced degree was 33 percent higher than those for high school graduates; by 1997 this percentage difference had risen to 85 percent.

Exactly how much of this rise in income inequality has been caused by international trade is the subject of a vigorous debate. The majority of trade economists believe that trade is responsible for only a relatively minor

The GATT Trade Rounds

Year(s)	Venue (Round Name)	Subjects Covered	Participating Nations
1947	Geneva	Tariffs	23
1949	Annecy	Tariffs	13
1951	Torquay	Tariffs	38
1956	Geneva	Tariffs	26
1960-61	Geneva (Dillon Round)	Tariffs	26
1964-67	Geneva (Kennedy Round)	Tariffs and anti-dumping measures	62
1973-79	Geneva (Tokyo Round)	Tariffs, non-tariff measures, and "framework agreements"	102
1986-94	Geneva (Uruguay Round)	Tariffs, non-tariff measures, rules, services, intellectual property, dispute settlement, textiles, agriculture, creation of WTO, etc.	123

Source: The World Trade Organization

fraction (10 to 20 percent) of the increase in wage inequality. Quantitatively more important, they argue, are changes in technology that have raised the premium for education and skills, and a shift in the composition of immigrants that has increased the supply of unskilled labor. Still, trade tends to be the most visible target, and it is quite possible that its effects on income inequality exceed the conventional estimates.

The proper policy response, though, is not to raise trade barriers but to address directly the dislocations caused by greater economic integration. This means making greater use of the "safeguards" provisions in the GATT that allow temporary relief for industries experiencing increased import competition. It also entails providing adequate compensation to individuals hurt by trade, for instance through improved programs of trade adjustment assistance, increased access to portable forms of health insurance, and expanded retraining and education programs. Trade liberalization may indeed contribute to the problem of greater economic inequality in the United States, but protectionism is not the appropriate solution.

The Threat to Sovereignty and Democracy

The power of the WTO and its threat to America have been vastly exaggerated by many of its opponents. To cite just two examples, the Global Exchange Web site calls the WTO "the most powerful legislative and judicial body on the planet," and reporter John Nichols writes in the (Madison) *Capital Times* that "the WTO is the most powerful force defining the economy of the U.S. and the world."

Put bluntly, such claims are preposterous. Even with growing integration of markets, trade comprises a relatively small share of the U.S. economy (the average of exports and imports amount to 12 percent of gross domestic product). The course of the U.S. economy remains largely determined by domestic decisions, actions, institutions, and policies. The size of the WTO also suggests that it is not as powerful as it has been depicted.

The WTO has a secretariat of around 500 employees. Compare this to the United Nations secretariat, which numbers around 8,700 individuals, and the International Monetary Fund (IMF) with its 2,700 staff employees. The WTO's entire budget in 1999 amounted to roughly 125 million Swiss francs (about U.S. \$78 million), a figure of equivalent magnitude to the IMF's travel budget. Assertions that this organization somehow exercises hegemonic control over the world economy amount to little more than crude conspiracy theories.

The WTO's threat to national sovereignty, too, has been overstated. Remember that the WTO is an organization into which countries voluntarily enter. If a country decides that it is not worthwhile being a member of the WTO, it can always renounce its membership in the organization. The claim that the WTO is undemocratic is also unpersuasive. There are provisions for supermajority voting on major decisions; for instance, amendments generally require a two-thirds majority or greater, and in some cases only the countries that specifically accept an amendment to the WTO articles are bound by it. In practice, decisions are made by consensus, with logrolling occurring to keep the peace. Given the WTO's large and diverse membership, the wonder is not that there are severe disagreements but that any agreements are ever reached.

The penalties for non-compliance with WTO rules are also much less severe than have been claimed. A report from the International Forum on Globalization contends that the WTO has the ability "to coerce and force compliance where necessary by means of a variety of disciplines, penalties, and trade sanctions which can be so economically severe that even the largest nations must yield." In fact, the penalties the WTO can impose for contravention of trade agreements are relatively minor (More precisely, the WTO does not impose any sanctions but authorizes countries that have been "wronged" to retaliate by withdrawing trade concessions). In essence, the maximum penalty available to a country harmed by another country's contravention of WTO agreements is the ability to suspend its trade

concessions in the same sector or, if that proves impracticable or ineffective, in another sector. The upshot, as one expert has concluded, is that “the WTO can reprimand but not severely punish violations by major trading powers.” Indeed, several recent U.S.-EU trade disputes, over such items as bananas, hormone-treated beef, and foreign sales corporations have highlighted the weakness of the WTO as the losing party has temporized in making the stipulated policy changes. Even so, the WTO dispute resolution system is widely seen as a major improvement over the thoroughly ineffectual system that existed under the GATT.

The Threat of Corporate Domination

Another favorite target of WTO critics are multinational corporations. It is argued that such corporations have disproportionate access to and influence upon trade policymakers, so they control the agenda for WTO negotiations. There is a grain of truth in this charge. In the United States, for instance, multinationals are generally better represented on advisory committees to the U.S. Trade Representative’s office than labor organizations or environmental, health, and consumer protection agencies. It may certainly be the case that multinationals have disproportionate access to policymakers in the area of trade, but the same goes for any number of interest groups in a broad array of policy areas. In short, differential access to policymakers is not unique to trade policy, nor is it really an international problem at all. It is a domestic problem that should be countered through domestic solutions, such as meaningful campaign finance reform.

A related allegation is that multinationals exploit the resources of developing countries, especially their workers. Multinationals have been vilified by many opponents of the WTO, but when it comes to the welfare of workers in developing countries, the evidence suggests that, on the whole, they are good employers, offering better working conditions and higher wages than local companies. In Turkey, for instance, foreign firms pay wages that are 24 percent above the average wage.

At the Living Wage Symposium held at the La Follette School last year, Paul Glewwe reported that workers employed by foreign textile firms in Vietnam had consumption expenditures that were over twice those of the average worker and poverty rates that were less than half. A 1994 survey by the U.S. Commerce Department found that average wages, salaries, and fringe benefits paid to non-U.S. citizens by affiliates of U.S. multinationals amounted to 8.5 times the per-capita GDP in low-income countries and 3.0 times the per-capita GDP in middle-income countries.

Certainly, some overseas affiliates of multinationals pay miserly wages and allow deplorable working conditions, but it is important to distinguish between outliers and the norm. It is also worth noting that multinational corporations are more vulnerable to pressure from non-governmental organizations and the press, so any abuses

by them are more likely to be remedied than those by locally owned firms.

The Threat to Developing Countries

More generally, the WTO is alleged to be indifferent to, or even hostile toward, the welfare of developing countries. Trade liberalization is seen as benefiting large countries at the expense of smaller nations, and allowing rich nations to impose their will on poor ones. The notion that developing countries are harmed by trade liberalization is belied by economic theory and empirical evidence. In theory, the gains from trade are actually greater for small economies than for large ones, a point which found some empirical confirmation in the fallout from the Seattle negotiations. Who complained most about the disruption of the Seattle ministerial meetings? The representatives of France? The United States? Japan? In fact, it was representatives from developing countries, a number of whom even articulated the view that the protests had been secretly organized by the Clinton administration to scuttle the talks. Apparently it is not just the anti-WTO camp that subscribes to conspiracy theories.

The WTO actually helps small countries in their bargaining with large countries. Two central GATT principles of non-discrimination especially help to counteract inherent imbalances of power. These are most-favored-nation treatment, which requires each member of the WTO to grant all other members treatment no worse than that accorded any particular member, and national treatment, which specifies that goods imported from any country be treated identically to domestic goods once they have cleared customs. The WTO’s reliance on consensus, noted earlier, also strengthens the relative bargaining position of developing countries.

Arguments that developing countries would be better off without the WTO seem to be based on a fundamentally flawed counterfactual. In the absence of the WTO, more trade deals would be concluded on a regional or bilateral basis, giving big countries greater latitude in exercising their bargaining power. Consider, for instance, the historical example of the Multifiber Arrangement. Dating from 1973, the Multifiber Arrangement is a worldwide system of bilaterally negotiated quotas in textiles and apparel that evolved out of earlier U.S. quotas imposed on Japanese textiles and later expanded to cover other nations. This system inflicts economic harm on developing countries, and its scheduled elimination is a substantive achievement of the Uruguay Round. It is difficult to conceive of developing countries obtaining that kind of outcome in a forum outside the GATT/WTO framework of multilateral trade negotiations.

The Threat to Labor Standards, the Environment, and Health and Safety

Perhaps the most heated criticisms of the WTO involve its impact on labor standards, the environment, and health and safety regulations.

Labor Standards

Many opponents of the WTO criticize it for not enforcing certain core labor standards with trade sanctions. However, two immediate obstacles come to mind. First, labor standards are not formally within the WTO's purview, but fall within the oversight of another organization, the International Labour Organization (ILO). Second is the inescapable fact that calls for higher labor standards abroad have been a commonly used (and abused) protectionist tactic by developed nations. U.S. restrictions on Japanese textiles, for instance, were at first justified as a response to Japan's lower labor costs and inferior working conditions, but nonetheless remained in effect even after Japanese wages rose to levels that exceeded those in the United States.

Compounding these obstacles is the formidable challenge of trying to get agreement on a common set of labor standards for all countries. In June 1998, the ILO established four fundamental principles and rights for workers, as follows: (1) freedom of association and the right to collective bargaining; (2) elimination of all forms of forced labor; (3) abolition of child labor; and (4) elimination of discrimination in employment and occupation matters. Article XX(e) of the GATT already permits

banning products made with prison labor, and this provision could be extended in a straightforward manner to encompass forced labor. There is less of a consensus on the other three fundamental rights, and many countries, including the United States, have not ratified all of the ILO conventions. If countries could agree to binding commitments on these fundamental labor standards—and this is a big if—then one possible enforcement scheme might rely on the ILO to monitor labor conditions and expose violations of agreed-upon rules, with the WTO approving trade sanctions as a penalty of last resort.

Beyond this, however, developing countries are not likely to agree to higher labor standards or “living wage” commitments. Nor should they. For many of them, low wages are their source of comparative advantage. They are justifiably concerned, given past history, that calls for labor standards are a thinly veiled form of protectionism. It is, moreover, profoundly undemocratic to allow other nations to make those kinds of choices for a country's own citizens. The insistence by many opponents of the WTO that trade pacts should include provisions for labor standards, without the consent of a broad cross-section of countries, seems fundamentally at odds with their professed commitment to democracy and concern for the welfare of developing nations. Another irony, noted by James Surowiecki in the publication *Slate*, is that “the WTO is simultaneously excoriated for being a kind of supranational government smashing down local regulations and excoriated for not being enough of a supranational government to create global living and working standards.”

Environmental, Health, and Safety Standards

Critics of trade liberalization also charge that openness in trade and foreign investment promotes a “race to the bottom” in environmental standards, as companies migrate to countries with less environmental protection. This claim is not supported by existing empirical evidence, which finds that environmental regulations play little role in trade flows and plant location decisions. Indeed, because the willingness to pay for higher environmental standards rises with per-capita incomes, trade liberalization can help raise environmental standards by increasing incomes. This is essentially what a recent study of sulfur dioxide levels across countries has found. Specialization in trade may also promote more efficient resource use that helps to improve the environment. To return to the sugar import restrictions in the United States mentioned earlier, these trade barriers have allowed cane production to occur in the Florida Everglades, with deleterious environmental consequences. If sugar quotas were eliminated, cane production in Florida would no longer be economically viable, and this source of environmental degradation would cease. There is also a possibility that more extensive market integration may induce pressures not for a “race to the bottom” but for a “ratcheting up” of environmental standards.

continued on page 21

THE ROBERT M. LA FOLLETTE SCHOOL OF PUBLIC AFFAIRS

University of Wisconsin–Madison
1225 Observatory Drive

Madison, WI 53706
(608) 262-3581

FAX: (608) 265-3233

E-mail: comment@lafollette.wisc.edu

Web: www.lafollette.wisc.edu

Staff

John Witte, Director

Graham Wilson, Associate Director

Craig Allan, Information Systems Manager

Ann Chambers, Student Services Assistant

Joanne Chapin, Student Services Coordinator

Joyce Collins, Department Administrator

Alice Honeywell, Publications Director

LaTanya Moore, Receptionist

Terry Shelton, Outreach Director

Shirley Smith, Outreach Specialist

Karolina Nitecka, Career Placement Adviser

Centers of the La Follette School

Center for Research on the Wisconsin Economy

Center for Wisconsin State, Local, and Tribal Governance

The La Follette School has a cooperative relationship with

The Center for Resource Policy Studies and Programs

The Institute for Environmental Studies

The Institute for Research on Poverty

The International Institute

The Wisconsin Center for Education Research

The *La Follette Policy Report* is a semiannual publication of the Robert M. La Follette School of Public Affairs. The School is a nonpartisan teaching and research department of the University of Wisconsin–Madison. The School takes no stand on policy issues; opinions expressed in these pages reflect the views of individual researchers and authors.

This issue of *The La Follette Policy Report* is produced by Julia North and designed by Jane Tenenbaum

© 2000 Board of Regents of the University of Wisconsin System
and Robert M. La Follette School of Public Affairs.



Social Insurance and the Older Worker: An Overview

by Robert Haveman

This article explores public policy questions pertinent to the dilemma of how—and whether—to provide social insurance to older workers—those aged 45–55. While Haveman does not provide a definitive answer, he encourages national discussion of whether to increase income support for retirees or to prolong work lives and delay retirement, and he poses several questions to advance such discussion. The full version of this article is forthcoming in an edited volume, Ensuring Health and Income Security for an Aging Workforce, published by the W.E. Upjohn Institute for Employment Research. Robert Haveman is professor of economics and public affairs at the University of Wisconsin–Madison.

A group that was clearly in the scope of the candidates in the presidential election of 2000 was older workers—those older than, say, 45 but younger than 65. They are “middle America,” with concerns about job security, when to retire, and living standards after retirement. Many of these older workers have modest schooling levels and skills, and as a result have failed to share in the prosperity of the last decade.

An increasing proportion of these older workers experience eroding strength and health, and many of them are perceived by both their employers and their younger worker peers as “long in the tooth” or “over the hill.” Often these perceptions guide employer and public decisions, and these may lead to both higher rates of job loss among older workers and feelings of economic insecurity.

The concerns of older workers have led to major policy proposals from political candidates of both major parties, and most of these proposals involve the nation’s social insurance system—Social Security, disability programs, and unemployment compensation.

Who are these older workers? What are their characteristics? Are they more vulnerable than other segments of the American population? What should be the nation’s stance toward them? Should they be encouraged to retire early with adequate pension and other income support, or should policy be designed to encourage longer working lives and delayed retirement?

One overarching national policy issue is central to the situation of older workers: *How should social insurance policy respond to the needs of a growing group of older workers who tend to be less strong and healthy than their younger peers, and who face eroding personal capabilities and difficult decision-making regarding retirement?*

Should we be promoting a pro-work agenda for older Americans by, for example, reducing the bite of pension plans that discourage continued work or by changing the employer culture regarding older workers, or by modifying public benefit programs and public regulations that inhibit flexible work arrangements? Or should we be seeking to improve the adequacy of income support arrangements for these workers as they phase into retirement?

In this article, I provide an overview of this group of older workers, emphasizing that not all of them are

economically vulnerable and hence worthy of special policy concern. While some of the large social and economic changes that have occurred in past decades have improved their well-being and economic status, others have made them more vulnerable. Given the situation of older workers and these policy changes, in what direction should policy move? And what is the effect of various policy proposals on the pro-work vs. early retirement dilemma?

Characteristics of Older Workers

Older workers comprise one-third of the U.S. workforce, 20 percent of the unemployed, and one-third of the insured unemployed. Relative to younger workers, then, they shoulder a smaller burden of unemployment and reap a larger share of unemployment insurance (UI) benefits.

On average, and relative to the remainder of the workforce, older workers have less education, fewer skills, and less flexibility in changing responsibilities and accepting new challenges. Fewer are minorities.

They earn higher wages than the remainder of the workforce, even though a larger proportion of them are in poor health. These higher wages, of course, are related to their longer job tenure.

Although the trend may have slowed in recent years, male 45–65-year-olds have shown a rapid increase in the willingness to stop regular employment and accept retirement. On the other hand, women in this age group appear to have an increasing propensity to engage in formal work.

Today’s cohort of older workers are expected to live longer than prior cohorts of older workers. In 1965, an older worker who reached age 65 could expect 13 years of retirement. Today, such a worker can expect 18 years. Because they measure retirement in decades rather than years, older American workers may feel under more social pressure than their predecessors did to remain active in the labor market. Today’s older workers also confront a general public sentiment that access to support from both private and public programs should be more difficult, and that the support provided should be less generous than it currently is.

Overall and on average, it is hard to make the case that older workers as a group are a particularly vulnerable segment of American society.

A final characteristic of today's older workers is that they can be roughly divided into two groups with quite different policy implications. The first and largest group is generally healthy, educated, working, and tends to be white. For them, continued work beyond the normal retirement age is feasible, and the primary issue is how to phase into retirement and settle on an appropriate lifestyle. To many people, requiring more years of work from this sizable—and growing—group seems a desirable policy.

The second group of older workers consists of those with health problems or with few years of schooling, a group in which minorities are prevalent. These workers tend to be on the margins of the labor market, and for them, the main policy issue is the adequacy of income support programs and access to economic and health care resources. Except for the small proportion of totally disabled workers among this population, Social Security Disability Insurance (SSDI) is likely to be unavailable. Moreover, early retirement benefits have eroded, and unemployment compensation provides only temporary help if permanent loss of a regular full-time job occurs. For many of these more marginal older workers, the re-trenchment in programs such as workers compensation, other disability-related programs, and pension benefits enacted over the past few decades have caused economic hardship. The situation is not likely to improve for this group of older workers.

Older Workers and Economic Self-sufficiency

The case for social insurance rests on the inability of the private market to protect individuals (and hence society) adequately against risk and uncertainty, and to assure an acceptable minimum living standard for all citizens. Designing social insurance programs to meet the needs of older workers thus requires an understanding of the economic status and vulnerability of older workers. Consider the following generalizations regarding the economic well-being of the population of older workers.

Several considerations suggest increased economic vulnerability for older workers over recent decades. A primary problem for the group of regular workers who are employees stems from the higher costs faced by employers in providing them health insurance coverage and retirement pensions. As a result, when pressures to reduce costs are encountered, whether they result from competition or declining demand, employers are less likely to retain older workers than young workers with the same sets of skills and competencies. So older workers are substantially more likely to lose their job than are

young workers. Moreover, older workers are less likely to work full time if they are re-hired. It follows that such displaced older workers who draw UI benefits are more likely to exhaust their benefits than are younger workers.

Relative to younger workers, older workers are more likely to be self-employed (10 percent of older workers are self-employed compared with 4 percent of younger workers). Relying on individual enterprise is risky. Statistics show that the failure rate for single proprietorships is substantially higher than for larger enterprises (notwithstanding the relative prevalence of legal and medical professionals in the population of self-employed workers).

If they are working and are not self-employed, older workers are more likely to be employed part-time than are younger

workers. As a result, they are less likely to be eligible for UI benefits if they lose their jobs, because UI covers only full-time, regular employees. Many part-time workers engage in “bridge employment,” which typically carries less compensation and fewer benefits than regular employment. Many of these bridge worker-retirees have been displaced from their regular jobs and have exhausted their UI benefits.

If they are not working—most likely having retired early—they will be dependent on income from a combination of private pensions and early-retirement Social Security benefits. While about one-half of the group of older workers are covered by employer-supported pensions, this proportion is shrinking over time. Moreover, those who are covered with defined benefit plans face eroding real benefits.

On the other hand, older workers have several advantages relative to younger workers. On average, these older workers have higher wage rates than younger workers primarily because of longer job tenures. Moreover, they typically have fewer family responsibilities than do younger workers.

Further, these older workers are more likely to have employer-sponsored health insurance and less likely to be uninsured than are equivalent younger workers, although the percentage with employee-sponsored health insurance has been decreasing.

Finally, if they are severely disabled, older workers are more likely to receive SSDI benefits than younger workers, and once on the disability benefit rolls they are less likely to leave.

Given this profile, overall and on average, it is hard to make the case that older workers as a group are a particularly vulnerable segment of American society. While they appear to face substantially higher risks of job loss, part-time work, and exclusion from some social insurance benefits, the average older worker starts from a higher earnings and income base than does the average

Designing social insurance programs to meet the needs of older workers requires an understanding of the economic status and vulnerability of older workers.

younger worker and is less likely to be without health insurance and private pension coverage.

To find real vulnerability, we need to dig deeper. In fact, such digging reveals that second group of particularly vulnerable older workers—those with low education and few skills, who are often minorities. Even among this group, true vulnerability is found by digging deeper still to locate those with ill health, ill spouses, and those who have experienced job loss or perhaps the loss of a spouse. Although people with these characteristics tend to be at the bottom of any larger population grouping with which one begins (younger workers, for example), because of their age the policy implications are quite different for those at the bottom end of the distribution of the older worker group.

Implications of Recent Economic and Policy Changes

A number of developments in the past decade or so have affected the economic position of older workers, especially the most vulnerable ones. As business enterprises face increasingly severe international competition—and the higher costs of employing older workers (both because of higher wages and the higher benefit costs)—older workers have been the first to lose their jobs or forced into early retirement. Those older workers who kept their jobs may have faced stress that accompanies decreased job security.

Another change has been the erosion of employer-sponsored pension plans for older workers. For those still in effect, the private sector plans have tended to shift from defined benefits (plans with a defined benefit structure) to defined contributions (plans that commit firms to only a defined structure of contributions). While this shift has led to lower expected income during retirement years, increasing the incentive to remain working among those covered, it has also reduced the hope of adequate pension benefits. For many older workers, this trend has increased the perceived need to postpone retirement.

In addition to these changes, the brunt of which has tended to fall on the most vulnerable group of older workers, there has also been a downward trend in real wage rates for unskilled labor since the early 1970s. In relative terms, the wage rate gap between skilled and unskilled workers has increased during this period, resulting in increased inequality and a perception by older unskilled workers that they have been left behind in the process of economic growth. This focus on gaps, however, masks the absolute deterioration of earnings for those workers with few skills or low education; since the early 1970s, the real hourly wage rate for a man with only a high school diploma has fallen by about 35 percent.

To some extent offsetting these changes, however, has been a substantial decrease over time in the physical demands associated with work; remaining employed today typically requires more mental and less physical effort than it did a few decades ago. In a survey taken in 1950

that inquired as to whether workers were in “physically demanding” jobs, about 20 percent of older workers answered yes. In contemporary surveys, only about 7 percent of older workers answer this question affirmatively. When this shift is combined with increasing average education level of older workers, it means that some workers are able to remain in the workforce longer, and with less effort, than was the case a few decades ago.

Simultaneous with these demand-side changes in employment and wages and the decrease in the physical demands of work have been changes in social policy that have affected older workers. Perhaps the most visible change has been the legislated increase in the Social Security full-benefit retirement age, and the increase in the penalty for taking early retirement. These changes embody the public sentiment that working lives should be extended and the retirement age pushed higher.

Moreover, while few were watching, legislation and judicial rulings since 1989 have substantially restricted the accessibility and generosity of workers’ compensation benefits: Eligibility has been tightened, benefits lowered, payment mechanisms made more restrictive, and health costs more tightly controlled. As a result of these changes, health-related costs have been increasingly shifted to recipients and their families or to other programs, such as SSDI, and away from employers. An increased burden of proof has been imposed on covered workers. All of these changes have tended to fall most heavily on older workers.

Finally, there is the more recent development that colors all discussions of the economic self-sufficiency of all worker groups—namely, eight years of sustained prosperity. Clearly the prosperity of this period has benefited nearly all groups, in part through its promotion of both the demand for older workers and the supply of them as fewer choose retirement. Moreover, this development has resulted in increased asset values for some but not all. While both of these developments have made the future less uncertain for some older workers, there has been a disturbing increase in disparities in both wealth holdings and earnings over time. Moreover, while the prosperity has opened up additional options for phased retirement for some older workers, it has imposed increased work demands and pressures on those who continue to work full time.

Policy Issues Regarding Older Workers

These economic and policy developments raise several important issues that the nation should address in terms of its treatment of older workers: *Should the nation’s major social insurance programs be restructured to provide a more adequate safety net, or should they be redesigned to increase work incentives for older workers? Or should policy changes seek to accomplish both objectives?*

Nestled in this overarching question are a number of other important questions:

- Should public regulations inhibiting flexible work arrangements be redesigned so as to increase the availability of this option?
- In the face of apparent reluctance by employers to provide training for older workers, should training opportunities for retooling or moving to bridge jobs be supported by public money?
- In the face of large disincentives for continued work beyond some early eligibility retirement age in numerous private pension arrangements, and the apparent reluctance of employers to change plans that contain these disincentives, should public regulations be designed to encourage the restructuring of private pension arrangements so as to increase incentives for continued work?
- Finally, should access to income support and benefits while working less than full time or not working at all be expanded?

Numerous policy proposals are always on the table to address these questions. While some of these proposals seek to increase the adequacy of programs targeted on older workers, others stress work-continuation goals. The following list is designed to stimulate discussions of the range of policy ideas that are currently being circulated.

Social Security Retirement

In addition to the now-resolved issue regarding the elimination or reduction of the earnings test, several proposals are being floated that would increase the normal retirement age still further, and even increase the early retirement age along with it. Like the elimination of the earnings test, both of these measures would promote work continuation. Little discussion of the adequacy of benefit payments has occurred.

Medicare

Regarding Medicare, should we allow workers to buy into Medicare at age 62—a proposal from the Clinton administration—or should we restrict Medicare coverage to receipt of full retirement benefits given an increasing retirement age? To adopt the first of these options would aid vulnerable older workers, but it clearly contains troublesome problems of adverse selection. The second option promotes continued work, but it simultaneously imposes costs on vulnerable older workers.

On another front, should we return the employer-first-payer provision in Medicare to its 1982 standard, a standard that reduced health insurance costs for employers, and hence, is a pro-work policy? Or do the costs in reduced health care coverage and the decreased adequacy override the pro-work gains?

Social Security Disability Insurance

For SSDI, should we adopt some subset of the several

proposed reforms designed to promote work? These proposals include a supplemental Earned Income Tax Credit (EITC) for SSDI recipients, allowing Medicare access to older workers who leave SSDI (with perhaps an earnings-conditioned premium), and the provision of vouchers for training for existing SSDI recipients? Again, all of these are pro-work. We could also consider changes in the benefit structure that would increase the adequacy of income support to the most vulnerable older workers.

Unemployment Insurance

Currently, self-employed and part-time workers are excluded from the UI program, and that imposes a relative hardship on older workers who are so employed. Should these workers be integrated into the UI system? For example, should we reduce the required hours of work in the base period for initial eligibility? Such a change would encourage flexible and partial retirement and facilitate the move from full work to retirement.

As an alternative, should we support tax-preferred savings accounts for older workers as a means to encourage a flexible move from full work to retirement? Should UI be used to support health insurance premiums for older workers, an adequacy concern? Still further, should the work option in UI be expanded to include more choice such as bridge jobs?

In terms of adequacy, should the minimum benefit award be expanded? This award is targeted on older workers and, in particular, vulnerable older workers. Should we increase the benefit duration for the group of older workers? Or should the self-employment assistance program with the UI system be expanded, which would also be pro-work?

Workers Compensation

Finally, workers compensation. One hardly knows what to say about workers compensation, given its diversity among the 50 states. Should there be some attempt to systematize workers compensation coverage, eligibility, and benefits? Should there be efforts to reverse the reduced access and generosity of workers compensation that has occurred since the late 1980s?

Conclusion

Clearly, then, there are no simple answers here. Arguments can be made for both increasing the adequacy of income support during retirement and for prolonging work lives and delaying retirement. Although the nation has not resolved this fundamental dilemma, nearly all social insurance policy proposals have incentives that emphasize one or the other of these directions. Unfortunately, the implications of specific proposals on this fundamental dilemma are seldom discussed. An informed electorate, however, should keep front and center this “pro-work vs. increased benefits conflict” that lurks just below the surface of the rhetoric. ■

Genetically Modified Organisms: Why The United States is Avoiding a Trade War

by Mark A. Pollack and Gregory C. Shaffer

Mark A. Pollack is assistant professor of political science at the University of Wisconsin–Madison. Gregory C. Shaffer is assistant professor of law at the University of Wisconsin–Madison. This article is derived from a paper appearing in The Washington Quarterly, Autumn 2000, and is printed with permission. © 2000 by the Center for Strategic and International Studies (CSIS) and the Massachusetts Institute of Technology.

Genetic engineering, the process used to create genetically modified seeds and foods and foods produced from them, is defined by the Organization for Economic Cooperation and Development (OECD) as a technology used to “isolate genes from an organism, manipulate them in the laboratory and inject them into another organism.” Supporters of the use of genetically modified organisms (GMOs) in food production consider GMOs as merely the newest step in ongoing scientific advance, from the selection of seed on the basis of farmer selection and Mendelian cross-breeding to the mapping of plant and animal genetic code.

The characteristics of these new plant varieties, supporters argue, offer significant benefits to producers and consumers. They can cut costs for farmers, and the savings can be passed on to consumers. They can increase yields, potentially spurring a new “green revolution” and benefiting food-scarce nations whose population growth outpaces their food supply. They can enhance environmental protection through reducing the use of pesticides, herbicides, and other chemical sprays. They can benefit human health through the addition of vitamins, nutrients, and pharmaceuticals, potentially resulting in vitamin A-enhanced rice, “heart friendlier” oil, iron-enriched wheat, and other “health” foods. Nonetheless, GMO advocates concede that the benefits from using GMOs have so far been captured largely by producer interests, not consumers, an initial strategy that agricultural biotechnology companies may regret. A major challenge for advocates of the new technology is to convince consumers that they too stand to benefit from it.

Critics, on the other hand, question the safety of genetically modified foods, maintaining that they could give rise to antibiotic resistance (through the consumption of products with antibiotic marker genes), or trigger allergic reactions (through the consumption of genes introduced from foreign species, such as peanuts). They also fear the environmental impacts of the technology’s use, whether through cross-pollination with nearby plants resulting in “super weeds,” through spurring the development of resistance in harmful pests, resulting in “super bugs,” or through incidentally killing other valued species.

Some critics also question the ethics of manipulating genes. Prince Charles, for example, has said that the production of genetically modified foods “takes mankind

into realms that belong to God and to God alone.” Others argue that permitting the use of genetically modified foods will have perverse socioeconomic effects, enabling agribusinesses and multinational seed companies to control technology, monopolize and enforce intellectual property rights through genetics, and profit at the expense of small and medium-sized farms.

Although complex and many-sided, the debate over GMOs has also taken the form of a bilateral, transatlantic trade dispute between the United States and the European Union, which have taken starkly different approaches to the planting and marketing of genetically modified foods. By and large, the U.S. government and industry have embraced the new technology of genetic engineering in pharmaceuticals and agriculture, while the European Union has taken a much more cautious approach, dragging out approval processes for new genetically modified foods and requiring labeling of such products in the marketplace. These differences reflect long-standing and broader differences in the regulatory cultures and laws dealing with food safety on either side of the Atlantic, which have already led to one major international trade dispute between the United States and the European Union—over the export of U.S. hormone-treated beef to Europe.

A transatlantic dispute over the regulation of GMOs matters, moreover, because the potential economic impact of a direct or indirect ban on genetically modified seeds and foods is immense. In just two years (between 1996 and 1998), crop area using genetically modified seeds increased fifteen-fold, to almost 28 million hectares. By the end of 1999, about 57 percent of soybeans, 50 percent of cotton, and 40 percent of corn grown in the United States was from genetically modified seeds. It is estimated that already by late 1999, approximately 60 percent of processed foods available in U.S. food stores were derived from genetically modified foods. Lowell Hill and Sophia Battle, two researchers at the University of Illinois, consider this possibly “the most rapid adoption of new technology in the history of agriculture.” By contrast, the European Union has created serious obstacles to the export of agricultural products from the United States, a policy position that could seriously hamper the economic viability of the biotechnology industry. Yet despite the entrenched conflict and

the high economic stakes in the GMO conflict, the issue of genetically modified organisms is unlikely to develop into a full-scale transatlantic trade war. This article examines why.

Regulating Food Safety

In the United States, the lead agency in the regulation of food safety is the Food and Drug Administration (FDA), which has jealously guarded its reputation as an independent and impartial regulator, making decisions on the basis of scientific tests rather than political pressures. Parallel to the FDA regime, the U.S. Department of Agriculture has primary responsibility for establishing food safety standards for meat and poultry, while the Environmental Protection Agency takes primary responsibility for regulating pesticides, and the Centers for Disease Control are charged with the task of monitoring food-borne illnesses and conducting investigations into the causes of such outbreaks.

Despite this administrative fragmentation, the U.S. system is characterized by strong central institutions such as the FDA, heavy reliance on science in decision-making, and considerable independence of regulators from political pressures—all of which stand in stark contrast to the relatively decentralized and politicized food safety system of the European Union.

The 1957 Treaty of Rome Establishing the European Community made no explicit mention of an EU food safety policy, so food safety remains primarily a national responsibility within each of the 15 member states. Nevertheless, just as the federal government in the United States used its interstate commerce authority to regulate food safety in the early twentieth century, so the EU has developed a de facto policy on food safety over the past four decades, as the EU's policies on agriculture and the establishment of an internal market for food products have “spilled over” into the regulation of the content and labeling of European food products. By comparison with the U.S. system, however, the EU food safety system was characterized by relatively weak controls at the center, and a process in which key decisions were made not by a specialized regulatory agency like the FDA, but by political bodies, including the EU's Council of Ministers, Commission, and European Parliament.

In the latter half of the 1990s, the deficiencies in the EU regulatory system were painfully revealed in a series of food safety crises that prompted a collapse of European consumer confidence, and which arguably played a role in the fall of both the Santer Commission and the former Belgian government. In March 1996 the British government of Prime Minister John Major revealed a

possible connection between Bovine Spongiform Encephalopathy, a disease spread among cattle through contaminated animal feed, and Creutzfeldt-Jacob disease, a rare but fatal disease found among humans. The British announcement sparked a major crisis throughout the EU, as consumers across the continent drastically reduced their intake of beef, resulting in the virtual collapse of the European beef market. In May 1999 a second major scandal broke when it was learned that Belgian farm animals had been given dioxin-contaminated feed, resulting in the removal of Belgian chicken, eggs, pork, and beef from the entire EU market, and the subsequent fall of the Christian Democratic government of Jean-Luc Dehaene.

In light of these scandals, the Commission proposed in its January 2000 “White Paper” to radically overhaul the EU food safety system. The Commission proposed a series of ambitious reforms, including the adoption of more than eighty new measures designed to integrate the regulation of food products “from farm to table,” and the creation

of a “European Food Authority,” which would be assigned the task of providing scientific advice on food safety issues and disseminating food safety information to consumers. The Commission declined, however, to create an independent regulatory body on the model of the U.S. Food and Drug Administration, empowered to adopt regulations based on its own scientific findings. That task, referred to as “risk management,” would remain with the EU political bodies—the Commission, the Council of Ministers, and the European Parliament. Thus, even a reformed EU food safety policy will continue to be governed by laws distinct from those of the United States, posing barriers to transatlantic trade and triggering conflicts before international bodies such as the World Trade Organization.

Beef Hormones: The First Food Safety War

Precisely because food safety regulations can serve as non-tariff barriers to trade in agricultural products, the international community has moved to establish international guidelines on food safety regulation in forums such as the United Nations Codex Alimentarius Commission (a joint operation of the Food and Agricultural Organization and the World Health Organization), which establishes international standards for food safety, and more recently through the 1994 World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). The SPS Agreement does not establish binding international standards, nor does it automatically preempt the adoption of non-discriminatory national food safety regulations that might inhibit international trade. It does,

By the end of 1999, about 57 percent of soybeans, 50 percent of cotton, and 40 percent of corn grown in the United States was from genetically modified seeds.

however, incorporate and promote the adoption of international standards and establishes trade rules that limit the ability of countries to adopt food safety regulation without scientific support. The terms of the SPS Agreement, moreover, are enforceable before the WTO dispute settlement system.

The first and most important food safety dispute under the SPS Agreement was brought by the United States against the European Union over the issue of hormone-treated beef. In 1995 the United States initiated legal action before the WTO, alleging that the EU trade ban on U.S. hormone-treated beef was inconsistent with the terms of the SPS Agreement because it was not based on scientific evidence, a risk assessment, or agreed-upon international standards, and it arbitrarily differentiated between products. After a protracted legal battle, and an appeal of the initial decision by the EU, the WTO Appellate Body ruled with the United States that the EU had failed to base its beef-hormone ban on a scientific risk assessment, and that the ban therefore constituted a disguised barrier to international trade. Facing continuing pressure from its own consumers, however, and hopeful of producing additional scientific findings that might justify the ban, the EU failed to act, and the United States retaliated on 17 May 1999, applying tariffs in the amount of \$116.8 million targeted against specific EU products such as foie gras, Roquefort cheese, and Dijon mustard. These U.S. tariffs in turn sparked a wave of protests among French and other European farmers, including an attack in August 1999 by a group of French farmers on a McDonald's restaurant, selected as the symbol of the threat of both American cuisine and globalization to French traditions. "McDonald's encapsulates it all," said one observer in *The Guardian*: "It's economic horror and gastronomic horror in the same bun."

The beef hormone dispute and its fallout illustrate the potential for transatlantic disputes over food safety, and the emotional, economic, and political magnitude of the resulting conflicts. Yet the economic stakes of the beef hormone dispute, and the potential for conflict that it represents in the transatlantic relationship, pale by comparison with the U.S.-EU dispute over the regulation of seeds and foods derived from genetically modified organisms.

Conflicting U.S. and EU Regulatory Approaches

The United States took an early lead and remains the world leader in the development of genetically modified foods. Venture capital is more likely to be provided in the United States in light of its friendlier regulatory and political environment toward the testing and marketing of biotechnology-derived products. By January 1996 approximately 1,300 biotechnology companies were already operating in the United States, compared to around 485 in the EU. Moreover, European companies, such as Bayer AG and BASF AG, were moving their biotechnology research facilities to the United States. Between 1996 and 1998, 79 percent of new GMO trials

were conducted in North America and only 15 percent in the EU.

In general, U.S. regulatory authorities make their determinations solely based on scientific risk assessments and often permit a great deal of industry self-regulation. U.S. companies, unlike European ones, are not required to obtain prior government approval for the marketing of genetically modified crops, although they typically consult with the FDA and remain liable for unsafe food. The U.S. Food and Drug Administration decided in the early 1990s that genetically modified foods were not meaningfully different from regular foods, and that it would approve foods based on the health risks of the individual product, not the process by which it is produced. In 1992 the FDA also ruled that no labeling was required for genetically modified foods because the genetic manipulation had not altered the substance and safety of the product.

This more flexible regulatory policy in the United States has been enabled by the relative lack of U.S. consumer anxiety over genetically modified foods. The majority of Europeans, on the other hand, have been reticent to accept these "novel" foods, explained in part by their reaction to recent European food scandals, the legacy of genetic testing in countries such as Germany and Austria during the Nazi era, and the fact that farms are much closer to nature reserves in a more densely populated Europe, potentially posing a greater threat to the natural environment. In addition, U.S. consumers appear to hold greater trust in the FDA than do European consumers in European food safety authorities. The British press, in particular, has fed off these fears, labeling genetically modified products "Frankenstein Foods." The political situation worsened for the European biotechnology industry when green parties officially became part of the governments of the EU's two leading states, France and Germany, in 1997 and 1998.

In response to consumer pressures, EU regulation does not focus solely on the safety of individual genetically modified products as such, but rather on the process by which all of them are produced, taking into account ethical and social concerns, as well as health and environmental ones. Unlike in the United States, the EU's 1990 directive on the release of GMOs into the environment requires state approval before a genetically modified crop variety may be planted. This approval must be obtained at two levels—both from the member state in which the variety will first be introduced and through a complicated process before EU authorities involving the Commission, scientific advisory committees, a member state Regulatory Committee, and the Council of Ministers. While the EU had approved a number of genetically modified products by mid-1998, including Novartis's Bt-corn, this latter approval triggered a rebellion by Austria and Luxembourg, which refused to permit the importation of Bt-corn on health and environmental grounds, and by France, which required that the corn be labeled as genetically modified. The EU quickly

responded to the member state rebellion in 1997 by amending the directive to add a labeling requirement for genetically modified seeds.

In 1998 the EU adopted a new regulation mandating the labeling of certain corn and soybean crops as genetically modified. In January 2000 the EU set a labeling threshold at 1 percent of the crop, above which it must be labeled as containing GMOs. The United States maintains that this threshold effectively requires the segregation of genetically modified and natural grains at immense cost, involving not only harvesting, but also transport and storage in trains, trucks, ships, silos, grain elevators, and warehouses. Since late spring 1998, finally, the EU has maintained a de facto moratorium on the approval of new genetically modified varieties, despite the fact that the EU's own scientific committees have continued to approve a number of varieties as posing no health risks to consumers.

The dispute with the EU already has had significant economic consequences in the United States. EU soy imports in 1998 alone were valued at \$1.5 billion, over ten times the value of lost beef sales to the EU. Yet now it is estimated that U.S. soy sales to Europe could drop by over 40 percent in 1999–2000. Added to the threat to U.S. soy exports are those of genetically modified corn, cotton, canola, potatoes, tomatoes, and tobacco, as well as numerous varieties in the process of development. In addition, all processed foods incorporating GMO-derived ingredients are at risk, from bread and baby food to sausages, ice cream, chocolate, and candy.

Initially, the United States took a hard line stance against EU restrictions. In 1997 U.S. Secretary of Agriculture Dan Glickman vowed to lead the fight against Europe and others not only for failing to approve expeditiously the use of genetically modified varieties, but also if they required labeling, or even permitted voluntary labeling, of genetically modified products without any scientific basis. In 1999 a U.S. trade representative official declared that Europe's attitude toward genetically modified foods and agricultural products was the "single greatest trade threat" to U.S. agricultural exports.

U.S. Responses to EU Restrictions

The U.S.-EU dispute over the genetically modified organisms is analytically similar to the dispute over beef hormones. EU trade-restrictive regulations have again been adopted without conducting a scientific risk assessment. U.S. governmental authorities have again sided with U.S. producers and repeatedly protested to the EU bilaterally and before relevant WTO committees. Unlike their behavior in the meat hormones dispute, however, U.S. officials have so far refrained from bringing a WTO claim over EU restrictions on genetically modified products. Instead they have preferred to conduct ongoing bilateral and multilateral discussions. They have chosen this less aggressive route for four primary reasons.

(1) Avoiding a Populist Backlash

U.S. authorities and affected U.S. industries recognize that the EU stance is a populist one and that EU authorities' hands are effectively tied. In particular, U.S. industries do not want to be seen as forcing genetically modified foods down the throats of European consumers, as the market backlash could be severe, when brand food companies and retail chains forsake products with genetically modified ingredients. U.S. authorities and companies hope instead to work with EU authorities and EU scientists to convince the European

continued on page 22

DIRECTOR'S PERSPECTIVE

continued from page 1

announce the addition of Clark Miller to our faculty. Clark studies environmental science and technology policy and will be joining us in the fall of 2001. Currently we have position openings in the areas of international management, administration, and business and government.

We are in the process of establishing a Board of Visitors—jointly with the Department of Political Science. Our goal is to seek the expertise of some of our distinguished alumni and supporters to develop our programs, attract the best students, enhance our internship and placement opportunities, and increase the visibility of our efforts nationally and internationally.

One of the biggest challenges we face at La Follette is how to function in our current quarters. With many faculty and staff sharing offices, and with high demand for space everywhere on our campus, our options are limited. Only a major gift for a new building or money for a significant expansion of the current building would best resolve this problem.

The articles you will see in this issue of the *Policy Report* demonstrate our increasing attention to international issues—and the way in which they affect our behavior here at home. Genetically modified organisms and the policy issues surrounding their proliferation are discussed by Greg Shaffer and Mark Pollack. Bob Haveman describes some recent changes in economic and social policies that affect older U.S. workers. Don Nichols treats us to a look at Wisconsin's historical strength in manufacturing and considers the effects of technology on that industry and on our state. In the lead article, Jeff Bernstein shares his research on the World Trade Organization, outlining its imperfections but encouraging a more positive view of the WTO.

By the time you receive this issue of the *Policy Report*, we will be almost ready to launch our newly designed Web site. Realizing that much of the information that readers receive now comes from the Internet, we are endeavoring to commit more of our resources to on-line publication than to paper. Callers asking for our "big" brochure are now told that the most up-to-date information about our degree programs and other activities is on our Web site. We are working to make sure that the information there is timely and accessible. Stay tuned on this front and keep checking: www.lafollette.wisc.edu.



Wisconsin Manufacturing in the Global Economy: Past, Present, and Future

by Donald Nichols

Donald A. Nichols is professor of economics and public affairs at the University of Wisconsin–Madison where he directs the Center for Research on the Wisconsin Economy and the Center for World Affairs and the Global Economy (WAGE). This paper was prepared for the Wisconsin Economic Summit held in Milwaukee, Wisconsin, November 29 to December 1, 2000. The author acknowledges comments of participants of the Policy Analysis Workshop at the La Follette School and of the Great Lakes Economic Development Researchers annual meeting. Helpful comments were also provided by David Audretsch, Jeff Bernstein, Mark Mone, and William Testa. A full copy of this paper is available at www.lafollette.wisc.edu.

Wisconsin's specialty is the manufacture of machinery, an industry that requires workers who are skilled in the metal trades. The percent of Wisconsin's workforce employed in the manufacture of non-electrical machinery is the largest of any state in America. This industry and the major industries that supply it, such as the foundry industry, consist of a group of small- to medium-sized firms concentrated in south-eastern Wisconsin, and spread across northern Illinois and neighboring states.

At the close of the nineteenth century, Wisconsin was already an important site for the manufacture of agricultural machinery, an industry whose location roughly parallels that of today's machinery belt. When automobile manufacturing sprang up in the early twentieth century, it became quickly concentrated in Detroit and the surrounding areas. Many firms in the Midwest became suppliers to both of these industries, as technology that was developed for one often found applications in the other.

As markets for other metal-based industrial and consumer goods developed, the Midwest became the logical place for firms in these new industries to locate because it had the cheapest source of metal, a good transportation network, workers skilled in the metal trades, and also because it was closest to the suppliers of high quality components.

By mid-twentieth century, the Midwest had become the home of an interdependent network of firms that comprised the largest and best complex of metal-based manufacturing in the world.

1970s: Global Challenge to U.S. Manufacturing

Until 1970, many firms in the machinery industry had not faced serious competition from abroad. But in the decade of the 1970s, the share of U.S. imports and exports doubled from about 5 percent of GDP to about 10 percent.

By 1970, not only had Germany and Japan recovered from World War II in the sense of rebuilding their capital base, but in many areas they had completely closed the technology gap as well. Furthermore, the greater attention paid to quality in both Germany and Japan gave them an advantage over U.S. firms in many markets. The rapidly changing volume of trade flows in the 1970s led

the major industrial nations to adopt flexible exchange rates as the way to stabilize their trade balances.

During the 1970s, both the yen and the mark had to be revalued regularly to slow the increase of German and Japanese exports to the United States. By the end of the decade, foreign penetration into many U.S. manufacturing markets had so deepened that many Midwestern firms had to close. The terms "rust belt" and "snow belt" became common in the press. The firms that adjusted to the foreign challenge survived by becoming aggressive and were subsequently dubbed "lean and mean."

Wisconsin fared relatively well in the 1970s, at least compared to the rest of the Great Lakes states. This was due in part to the fact that Wisconsin specialized in machinery rather than autos, and machinery had not been as hard-hit as autos by the huge increase in energy prices. Wisconsin had an auto firm, American Motors, but that firm built small cars, and sales of small cars rose when energy costs rose. But the U.S. auto industry as a whole had high labor costs and union work rules that it could not run away from, and it had internal organizational problems. Its inventories were huge, and it was slow to identify problems in its production processes. In the 1970s, the auto industry was simply not built around the customer. It had become the opposite of lean and was not able to respond quickly to the challenge from abroad.

While autos typified in many ways the problems of U.S. manufacturing and of the Great Lakes rust belt states, not all capital goods firms shared in these difficulties. Many capital goods were already being built in small batches, some being built to order, and as a result, many machinery firms already had close relationships with their customers. As the dollar fell in value during the 1970s, though not by enough to protect the auto industry, Wisconsin's capital goods manufacturers were given a temporary respite from foreign competition. In 1979, an article in the *Wall Street Journal* referred to Wisconsin as the "shining star of the snow belt."

1980s: Challenge to Wisconsin Manufacturing

The bottom fell out of the U.S. machinery industry in the double dip recessions of 1980 and 1981–82 (see figure). Capital investment of all kinds collapsed as interest rates soared. Between 1979 and 1983, Wisconsin

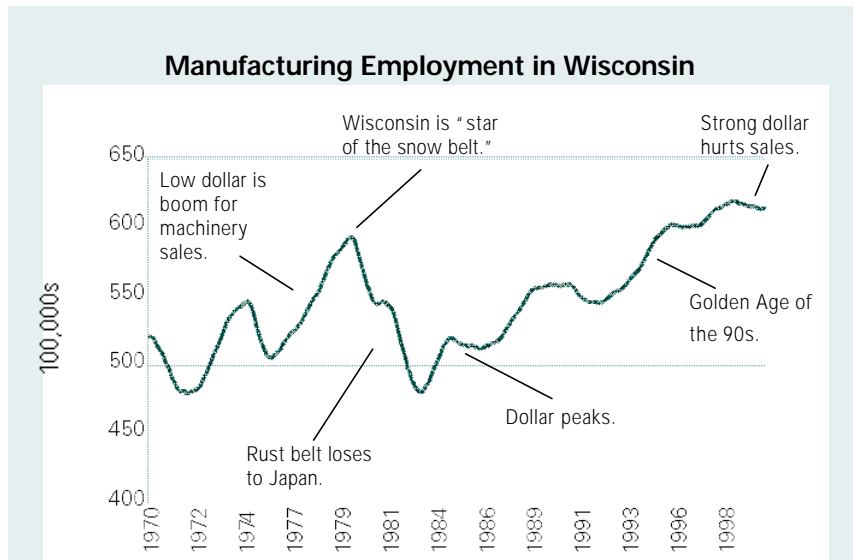
lost more than 100,000 jobs in durable manufacturing, an amount equal to five percent of its entire workforce. The tepid recovery that followed brought further problems for Wisconsin's export-sensitive industries because the recovery was accompanied by very high interest rates that led to a strong appreciation of the dollar and to a massive trade deficit. This time the dollar went up, though not because foreigners were trying to buy increasing amounts of U.S. exports. It went up because they were buying increasing amounts of U.S. securities in order to earn the record high interest rates available in the United States.

International capital markets had become sufficiently integrated by the early 1980s that differentials in national interest rates could lead to substantial changes in currency values, and because those changes in currency values were not driven by changes in domestic costs or productivity, they could wreak havoc on foreign trade. Rather than view the changing value of the dollar as a stabilizing force, it became a source of instability to exporters. Indeed, ever since the mid-1980s, fluctuations in currency values have been related to more trends in capital markets, such as interest rate differentials, than to changes in the relative costs of traded goods. In the new global economy, because of the way exchange rates are set, it is fluctuations in international capital flows that drive the competitiveness of manufacturing exports.

In the recovery that followed the recession of the early 1980s, foreign firms captured a growing share of America's machinery market. This meant that Wisconsin's recovery from the recession would be slow. Meanwhile, the continued, relentless competition from abroad forced firms to change the way they did business. In many cases, the Japanese emphasis on quality became instituted in U.S. firms as ordinary business practice. In addition, costs were scrutinized in new, rational ways, and many functions were outsourced.

In some cases, the assembly process itself was outsourced. Manufacturing firms became importers of their own products. Firms that outsourced production and ended up importing their own products were referred to as "hollowed out." These corporations continued to add value to their own products, of course, in the form of management, technology, and design, and also in the brand names they could attach to the products they imported. But assembly was often outsourced, typically to Asian firms.

One Japanese method proved difficult to copy at first. This was "just-in-time" inventory management. This method was developed in post-war Japan where it was especially attractive because a shortage of capital and space made it difficult to finance and store inventories that had not already been sold. In Japan, an assembly line of a complicated product might be located in a central



building with the manufacturers of the components in small buildings just across an alley from the assembly line. Components would be shipped across the alley on dollies "just-in-time." No warehousing, loading, or unloading would be needed, which saved a lot of money.

In contrast to Japan, Midwestern factories were already spread across the landscape. Factories of suppliers were linked by trucks and trains to central warehouses that stored components for a set of assembling factories. Capital and space were abundant so there was no financial or physical imperative to shift to the just-in-time method. But a shift was sought nonetheless on the belief that it would greatly improve product quality and productive efficiency.

Wisconsin's Response to the Global Challenge

How could the Midwest move to a just-in-time method of inventory management with factories so widely dispersed? An answer to this question was found in information technology. A problem raised by globalization was solved by the other dominant feature of the new economy—information technology.

The advent of the cell phone and the placement of a cell phone in each truck was the crucial development that allowed factories and shipments to be linked together in a single complicated system. Rather than dollies moving across an alley, semi-trucks moved across the entire Midwest. It was not proximity that made the Japanese system work, but predictability of arrival time at the destination. Today shipments leave one factory on a precise schedule, proceed to a destination hours away, and arrive just in time. One truck pulls up to the loading dock just as the preceding truck pulls away.

The new system has many advantages over the system it replaced. Inventory holding and handling costs are reduced, processes vulnerable to breakdown are easily identified and strengthened, and producers can respond much more quickly to changes in consumer tastes. The response of Midwest manufacturing has been

so thorough that a buyer of components can now routinely put the entire responsibility for timely delivery of zero-defect components on the supplier's shoulders and expect performance. Indeed, more and more responsibility for product performance, including design, is now being given to suppliers, and suppliers have increased their reliability in order to meet the new expectations.

As the distances over which products can be shipped on precise schedules have increased, competition among suppliers has become more intense. If a supplier across town cannot meet the new standard, a new supplier in another city can be engaged. This has weeded out the inefficient firms and forced the survivors to get lean and mean. In this way, the cell phone information system has enabled efficient firms to increase their sales greatly. The result is that in the last two decades, the machinery industry has been transformed by the first wave of the information revolution. It should be noted in passing that the deregulation of the U.S. trucking industry in the late 1970s also facilitated the transformation in Midwest logistics.

Because of the relatively inefficient system of truck transportation in Japan, it is hard for the Japanese themselves to copy the Midwest's version of this system. Competition among geographically dispersed suppliers in a just-in-time system requires an excellent highway system. The uncongested Interstate highway system in the Midwest offers it a distinct advantage with the predictability of travel times it permits. Offsetting this advantage is the fact that the distance over which deliveries can be made on a predictable basis is rapidly increasing. Shipping times are increasingly coordinated on a worldwide basis. Hence one of the great advantages of the Midwest that led to its resurgence in the last decade and a half will be eroded somewhat in coming years.

Wisconsin's political response to the economic difficulties of the early 1980s was also intense. The work of the Strategic Development Commission, the election of Governor Thompson in 1986, and new attention to tax and regulatory systems resulted in change. Some of Wisconsin's subsequent growth resulted from a much higher level of effort to attract new businesses into the state, a task made possible once the business climate had been improved. The network of cell phones that links the shipments to the factories enabled a huge reduction in shipment, storage, and interest costs. Hence, cell phones should be viewed as an input into the manufacture of automobiles and machinery. They—and semi-trailers—have replaced warehouses and dockworkers. And within firms, logistics management has replaced old fashioned systems of inventory tracking and verification.

Wisconsin manufacturers have become lean and mean, with an emphasis on quality that might never have occurred without foreign competition.

Wisconsin Manufacturing in the 1990s

The 1990s were a golden age for Midwest machinery manufacturers. More than just the introduction of

better management and information technology was responsible for this prosperity. Domestic investment, including the purchase of machinery of all kinds, soared. At the same time, purchases of machinery by developing countries, especially those in Asia, also soared. Meanwhile, the dollar had fallen substantially from its mid-1980s peak, and U.S. products were again competitive on world markets.

The huge growth in machinery sales provided the funds needed for the machinery manufacturers to purchase new efficient equipment for themselves. The transformation of the old Midwest manufacturing economy from a group of loosely connected factories into a tightly integrated network of quality-conscious, customer-driven managerial teams was financed by the large profits earned in the 1990s from booming sales.

The Midwest durable goods manufacturers have become a more tightly woven network than ever before. Transport costs have fallen as the management of fleets has become more efficient. Whole new industries of supply chain management have emerged, led by the trucking firms who specialize in minimizing the costs of coordinating production activities over great distances. That is, many of the lean and mean manufacturing firms routinely outsource their logistics problems to firms that specialize in these activities.

While outsourcing reduces employment within manufacturing, it should not be confused with a decline in the importance of manufactured products in the economy. There is no decline in the value of automobiles or of machinery as a share of the Gross Domestic Product in the U.S. In fact, there seems to have been a modest increase in the percent of consumer and business spending on the Midwest's traditional products during the 1990s. But there has been a large decline in the share of workers engaged in assembly, which reflects an increase in productivity, and, because of outsourcing, there has also been a large shift of employment out of manufacturing and into the service sector.

As the 1990s came to an end, the only clouds on the horizon for U.S. machinery manufacturers seemed to be that the value of the dollar had again risen somewhat. The opportunity for investment provided by the U.S. stock market in recent years led to a huge inflow of funds causing the dollar to rise in value. As a consequence, a trade deficit emerged that is now running at a rate of over \$400 billion per year. Machinery manufacturers are among those who have suffered the most, and it will be difficult to increase machinery exports while the dollar remains high.

The Challenge of the New Economy

One symptom of the challenge that Wisconsin faces in the new economy is the relatively small percentage of college graduates employed in Wisconsin. Another symptom is the continued purchase of Wisconsin's small and mid-sized companies by firms headquartered

out of state, and in many cases, out of the country. Are these two challenges related? One way to think about it is to consider the new economy into which both of these challenges fit. Other problems and possibilities are also identified in the overview. My conclusion is that while Wisconsin will face difficulties in overcoming the challenges posed to it by the new economy, Wisconsin is better positioned than many states to meet those challenges.

Some Features of the New Economy

Looking to the future, we must remember that it is not just information technology whose role is expanding, but that the role of industrial technology is accelerating as well. The automobile I buy differs in fundamental ways from the automobile my grandfather bought. My car has less steel but better technology. Over the years, brainpower has been substituted for both brawn and raw materials, and this substitution has occurred within the individual automobile firms as well as within the Midwest's factory network. The substitution of technology for other inputs is likely to continue, and it will remain an important feature of the new economy in many industries.

Technology is but one form of information. Other forms of information are increasing in importance as well. Branding and consumer information is important. The practice of business management is increasingly complex and is dependent on information. And the linking of all these kinds of information through information networks is growing.

Taken together, it is this group of inputs, all based on information, that define the new economy, and it is the growing roles of these inputs that will dominate the character of the economy in coming years. To think of them as inputs is the key to understanding the new economy. To say that an automobile is made out of information to a greater extent than it is made out of steel may violate our intuition about the physical character of a product, but it is not misleading in an accounting sense because information now makes up a greater share of the cost of a new automobile than raw materials do. Economists would use the term "value added," and would note that the share of value added in final output that is provided by information exceeds the share of value added provided by physical materials and possibly even of the whole process of assembly.

Because the slice of the economy I have emphasized in this report is the manufacture of machinery, it would take me too far afield to describe information as a final consumer product. But a brief consideration of how little consumers actually spend on information compared to how much they spend on durable goods—their phone bills, their cable TV bills, and their Internet connections combined are less than a car payment—tells us quickly that the major role of information in the new economy is to add value to the whole pipeline of production, rather than to be a consumer product itself.

This tells us that from the perspective of the

Wisconsin economy, the threat of the new economy is not that consumers will stop buying lawn mowers made in Wisconsin and start buying "information" made in California. The threat is that an increasing share of the cost of a Wisconsin lawn mower will be the cost of California information, while a shrinking share will be spent on Wisconsin-made inputs and workers. New, more intelligent ways to make lawn mowers will reduce the cost of lawn mowers and improve their quality. The question for Wisconsin's future is whether the college graduates who contribute to these new information systems will live in Wisconsin or somewhere else.

Economies of Scale in Information

An important feature of the new economy is that there are enormous economies of scale in the field of information. An investment in technology is just as expensive if it will be used to produce one thousand or two thousand farm tractors, but the cost of the invention per tractor will be half as large if production is twice as large. Technology, branding, and systems of management are forms of information that have large economies of scale.

A consequence of the growing importance of information will be a drive toward large-scale production in all industries as companies try to expand in order to spread their information costs over a larger volume of production. One way to expand is to export. Better to sell on two continents than on one. Hence the growing importance of information is one of the forces driving the move toward a global economy. Foreign producers will feel these same forces, of course, and they will try to expand into U.S. markets.

A second way to spread information costs over a larger volume of production is for firms to combine. This suggests that we will see a continued move toward consolidation of many manufacturing companies, and it will take place worldwide. This means that mergers and buyouts will continue to be a feature of Wisconsin's economic news in coming decades. Wisconsin's machinery manufacturers will be a target for foreign buyers who need to spread their technology costs over a larger volume of production. Because of the growing importance of technology, and because of the economies of scale in the development and application of technology, consolidation can be expected to accelerate in the future.

In terms of consolidation, other industries are further down the road than the machinery industry. This may be because the scale of production in machinery is small enough that automation has not been as economical in machinery as it has been in some other industries. For example, while a single auto assembly plant may turn out 300,000 copies of the same car each year, the entire market for farm tractors in the United States is only about 100,000 per year, and this is divided among several brands, each offering many models with enormous variations in size and specifications. In many machinery industries, volumes have remained small

enough and the variety of products large enough that skilled hand work has remained a major input. Because of the low volumes and necessary hand work, the assembly costs are likely to remain high in the machinery industry in the future, so that even after machinery feels the full impact of the information revolution, the manufacturing cost will remain a relatively substantial part of the final costs of the product. But despite the importance of assembly costs in the machinery industry, it remains the case that an important effect of the increasing role for information as an input will be a strengthening of the forces of consolidation.

To gain insight into the possible structure of the machinery industry in a mature knowledge economy, it is helpful to note the organizational patterns of some other industries in which knowledge is a larger share of the final costs than it is in machinery. Three industries in which information plays a moderate, large, and dominant role, respectively, are autos, pharmaceuticals, and Internet technology. These three industries have large dominating clusters of activity in Detroit, New Jersey, and Silicon Valley, respectively. Each can tell us something about the complicated interactions among regional economies, industrial clusters, and the forces of consolidation in the new economy.

Autos, Pharmaceuticals, and Software Technology

Detroit became the headquarters of auto manufacturing in the first decade of the twentieth century when manufacture and assembly was the most advanced sector in the economy. The clustering of manufacturing activity reduced the supply lines and increased the transfer of manufacturing skills and expertise across firms. As the volume of production of a single model increased to the extent that more than one assembly plant was needed, plants were spread across the country to be near consumers in order to minimize transportation costs. But with the proliferation of models over the last few decades, volumes no longer justify several plants for the same model. Coastal plants have thus been closed and assembly returned to the Midwest, again to minimize transport costs, but also to be near the engineers and laboratories, as the importance of technical information has grown within the auto industry.

Today, Detroit has a bigger share of the development of auto technology than it has of auto manufacture. Many foreign auto manufacturers have opened labs in Detroit to take advantage of—but also to contribute to—the cluster of engineering talent and technology that are growing in Detroit and whose role in the auto industry has increased in importance in recent years. Technology has become so important and so large a share of costs in the auto industry that firms the size of Saab and Volvo are no longer able to afford to develop their own technology. This is the major reason that the number of auto manufacturers has shrunk in recent years. The big auto firms are now demanding a similar rationalization from their suppliers, which is leading to a consolidation at

that level also. Competition among suppliers who sell relatively uniform products to manufacturers is likely soon to be organized through auctions on the Internet.

Pharmaceuticals are a more information-intensive industry than autos are, and perhaps even more can be learned about how the knowledge economy will affect industries in the future by looking at how the pharmaceutical industry is organized today. In pharmaceuticals, the ratio of the costs of technology to the cost of manufacturing is extremely high. Large volumes of sales are essential if development costs are to be recovered. The important part of the pharmaceutical company for a region to attract is its headquarters and its research and development labs, not the factories that manufacture the pills. Pharmaceutical research centers have enriched New Jersey, while the pills are made in Puerto Rico.

Software is an even more knowledge-intensive industry than pharmaceuticals, and it provides an extreme example of the same economic force. Seattle has Microsoft's headquarters and its major research and development center. Where the disks or CD's are burned and put into mailers—the physical part of software manufacture—is not the valuable part of the software industry for a region to attract.

Networks of Business Professionals

A final feature of the new economy, the functioning of a vigorous professional network, can best be observed in Silicon Valley. Young engineers move to Silicon Valley because that is where the jobs are, and firms move to Silicon Valley because that is where the engineers are. Employee turnover is high, and firms seem to divide and re-combine around new functions quite rapidly. Corporate structures are fluid. Networking among these engineers and their employers provides an important source of information flow. The glue that holds this cluster together are the economies that derive from having one job market instead of two, and the more rapid rate at which information flows through a local network than through distant networks, possibly because of the rapid rate of employee turnover.

While most analysts of the new economy emphasize the flow of information among the scientists and engineers in Silicon Valley, it is important to remember that the valley is also the home of a thriving network of business professionals who staff not only the headquarters of the corporations located there, but who also include entrepreneurs and venture capitalists, along with a group of lawyers, accountants, and bankers who specialize in financing the information technology industry.

Note that it is the latter group that decides where the money will go, which means they decide which ideas are to be developed, which new products created, which companies merged, and which new ventures spun off from existing companies. In the new economy, capital is directed by a network of legal and financial professionals and entrepreneurs, typically outside the walls of any manufacturing company. A truly vigorous industrial cluster requires not only a network of engineers and scientists to

work on the technology, but also a strong network of business professionals and venture capitalists to provide direction to the industry.

Machinery in the New Economy

Machinery is likely to develop to a point where a few large firms in each industry have assembly operations on all continents, but a headquarters in only one of them. To become a local assembler is to accept a role that is likely to diminish in importance in coming years. Wisconsin's strategy should be to see that the corporate headquarters and the research function remain here for a large percentage of its firms. Far better for Wisconsin, for example, if Case had bought New Holland than that New Holland bought Case. Far better for Wisconsin, for example, if Giddings and Lewis had purchased the machine tool division of Thyssen than that Thyssen bought Giddings and Lewis. How to retain corporate headquarters in southeast Wisconsin remains part of the challenge of the new economy to Wisconsin manufacturing.

A Vision for Milwaukee for the 21st Century

Imagine Milwaukee as the Silicon Valley of the machinery industry. As a worldwide hub, it would include in its region not only the headquarters of some newly consolidated worldwide firms, but it would also include many small entrepreneurial firms—perhaps spinoffs from the larger companies—revolving around a few bright inventors, who would sell specialized components or licenses to the original equipment manufacturers or who might consult with them or work with them on special projects. There would be links to basic university research on materials science, hydraulics, and electronics. Perhaps a large independent lab with a combination of public and private funding on machinery-related science would be nearby. Sematech in Austin provides the best example of such a lab.

The engineers of both the small and large firms would be networked, perhaps through their professional associations, perhaps through their links to university faculty, or perhaps through their accountants and consulting firms. A vigorous professional network would have all three of these links, possibly more, and it would provide enough information about job vacancies to support employee turnover of the kind that would bring the best minds to work on the most rewarding problems. A network of this kind would offer exciting opportunities to the best young professionals and would attract them to Wisconsin.

This vision suggests that it will not be enough just to keep the factories in Wisconsin, though assembly will remain important in the machinery industry for a long time. It will also be important to sustain a substantial research and development function in Wisconsin as well. A network of the best scientists and engineers moving

quickly from assignment to assignment would offer excellent careers to individuals, and it would also provide a formidable hub of technical know-how and fast-moving technological developments that would make Milwaukee one of the best places for a machinery firm to locate. It would be difficult to locate somewhere else and have to compete with Milwaukee in developing new products or in solving new technical problems when one's competitors in Milwaukee had access to the world's best talent.

Keeping corporate headquarters in Wisconsin means that we will remain an important breeding ground for small businesses that would invigorate the local economy

Milwaukee should seek to become the
worldwide center of
machinery technology and expertise.

and team with the larger firms to develop new products and technologies. Perhaps Milwaukee would relate to Chicago in the way Silicon

Valley relates to San Francisco in its use of business professionals. A strong presence of professionals in Milwaukee would be supported by some of the world's best in Chicago. Southeast Wisconsin needs to have entrepreneurial machinery manufacturers who look for foreign acquisitions rather than just consider the offers they receive to sell to foreign headquarters. Entrepreneurial venture capitalism cannot be sustained without these business professionals.

And we need not give up on firms that have already sold themselves. If we develop the right environment of exciting new engineering technology, New Holland will find it in its own interest to have its technology development remain in Racine. Just as many foreign computer manufacturers have long had labs in Silicon Valley, and just as foreign automakers maintain labs in Detroit, Milwaukee should seek to become the worldwide center of machinery technology and expertise. This would not only protect its remaining blue-collar jobs, but it would provide exciting employment opportunities to Wisconsin's best young engineering students as well.

In my view, we need not even give up on information technology. Granted, Silicon Valley would sell many products to a vigorous Wisconsin-based machinery industry. But the pipeline between the two industries can be owned and developed from either end. It is as natural to develop information technology for the machinery industry at the home of the machinery industry as it is to develop it at the home of the information technology industry.

Success at developing an information technology industry is much more likely if it is based on a strong, vigorous base of customers than if an attempt is made to develop it as an island in competition with Silicon Valley and its many would-be imitators. If Wisconsin is to retain and attract its share of highly educated people, it will need to have centers of entrepreneurial activity and centers for research and development. Wisconsin has a base of strength in its machinery industry that others cannot match. The surest future is to build on that advantage.■

The WTO has been blamed for promoting “trade über alles” (trade over all) at the expense of the environment. There is some truth to this contention; after all, the WTO exists to promote trade liberalization and has no specific mandate regarding environmental issues. Nonetheless, the decisions that have been cited to show how the WTO has undermined U.S. environmental laws are often misinterpreted. Take the infamous Venezuelan gasoline case, where the WTO supposedly rendered invalid the U.S. right to mandate cleanliness standards for gasoline. Actually, a WTO Appellate Body concluded that the environmental objective of the U.S. law was legitimate but that the U.S. Environmental Protection Agency applied a more stringent standard to domestically produced gasoline than to foreign gasoline. The United States could maintain whatever standard it wanted but it had to be a consistent standard that did not discriminate between domestic and foreign producers.

The same is true in the even more notorious turtle-shrimp case, where the Appellate Body ruled against a U.S. ban on shrimp exports from certain countries that did not compel their fishing boats to use “turtle excluder devices.” Again, the issue was not whether the environmental objective of the U.S. law was sound, but how the law was enforced. The problem was that the application of the law was discriminatory—certain countries, notably Thailand, Malaysia, India, and Pakistan, were given only four months to comply, while other countries had three years. Moreover, the U.S. ban affected all shrimp exports from a country, even if shrimp had been caught using turtle-safe technologies.

One can certainly argue that there have been some instances where the WTO has been overzealous in trying to root out disguised protectionism in matters of environmental and health policies. Take, for instance, the hormone-treated-beef dispute between the United States and the European Union. In principle, WTO rules allow countries to impose trade controls to “protect human, animal or plant life or health” if the measures do not discriminate between countries and if the regulations are justified on the basis of scientific evidence. In response to a U.S. complaint, however, the WTO ruled that the European ban on hormone-treated beef had no scientific basis and was therefore illegitimate. In this type of circumstance, there may be grounds for invoking the “precautionary principle” that would allow safety considerations to prevail in the absence of any demonstrable protectionist intent.

More generally, some observers have raised the possibility of incorporating an expanded “social safeguards” clause into the WTO. This would establish multilateral rules under which national governments could restrict trade in situations where there were significant domestic environmental and health concerns, even in the absence of conclusive evidence, as long there was no obvious discriminatory or protectionist intent. Product labeling may offer another possible resolution in such cases, as labels would allow consumers to make informed choices

about products based on their individual environmental or health concerns.

Beyond “GATTzilla”: A Need for More Balanced Appraisals of the WTO

Some opponents of the WTO have created a character—GATTzilla—that encapsulates in a single image many of their fears about the institution and its position in the world trading system. A giant lizard on the rampage, it is shown munching on a globe, stomping on the capitol dome, squeezing a dolphin in one hand while pouring DDT from a barrel tucked beneath its other arm. Busy as it may be, the GATTzilla image incorporates only a few of the vast litany of evils for which the WTO has been blamed. These include usurping national sovereignty, trampling on democracy, undermining labor and human rights, poisoning the environment, imperiling health and safety regulations, propagating inequality and poverty worldwide, eviscerating cultural diversity, and even murdering people. As Paul Krugman writes in *Slate*, “The WTO has become to leftist mythology what the United Nations is to the militia movement: the center of a global conspiracy against all that is good and decent.”

Demonizing the WTO may make for effective propaganda, but it is ultimately unproductive in terms of advancing the policy debate. Making the WTO into a scapegoat is also dangerous, because it risks overturning the commitment to liberalized trade that the United States has maintained throughout the last half-century. It bears keeping in mind that the period leading up to World War I was, like today, also a time of increasing economic integration. As a result of changes in U.S. economic conditions, however, including the imposition of staggeringly high tariffs, the Great Depression, and disruptions caused by two world wars, there was a massive contraction in the volume of trade and a spectacular disintegration of world markets, with tragic consequences. I introduce this historical example not to suggest that it is a likely scenario—this would be engaging in the same kind of fear-mongering that some foes of the WTO have employed—but to illustrate that, even with continuing advances in communications and transportation technology, there is nothing automatic about continued economic integration.

For over fifty years, the WTO and its predecessor, the GATT, have played a central role in facilitating trade liberalization and in establishing some basic ground rules for world trade. Given the apparent importance of trade liberalization in promoting economic growth and reducing poverty worldwide, this is no small achievement. The WTO is an imperfect institution, but it is not nearly as terrible as it has been portrayed by many of its opponents. If the Seattle protestors are genuinely serious about making improvements in the world trading system, they could begin by moving beyond GATTzilla, toning down their overblown rhetoric, and instead offering reasonable, constructive suggestions for reform. ■

public, over time, that genetically modified foods are safe and can even be beneficial to human health and the environment.

(2) Spillover Effects of EU Policy

The media attention given to the U.S.-EU dispute over European restrictions on genetically modified foods has affected the political and commercial playing fields within the United States. The rising “noise” level over genetically modified foods financially affected all parties involved in the U.S. food chain, from field to table.

Under pressure from activist groups and consumer market demands, brand-name companies around the world announced in 1999 that their products would be GMO-free. Companies included Gerber (Novartis) and Heinz for their baby foods, food giants Unilever, Nestle, and Seagram, two major Japanese breweries (Kirin and Sapporo), the Japan Tofu Association, the frozen french fries-maker McCain Foods, Frito Lay for its corn chips, and Grupo Maseca, Mexico's largest tortilla maker. This change in the market involved not only European and foreign consumers, but threatened to raise consumer concerns in the United States, which until recently had experienced virtually no consumer opposition to GMOs.

Yet U.S. consumers had also been less aware of the existence of genetically modified food products. Surveys showed that while approximately 60 percent of processed foods consumed in the United States contain genetically modified seeds, only about 33 percent of Americans even knew that genetically modified foods were available in supermarkets, and 60 percent claimed that they would not buy foods labeled to contain genetically modified ingredients.

Unlike meat hormones, the use of genetically modified materials also raises environmental concerns, tapping into yet another U.S. social movement. Even large mainstream environmental groups, such as the Sierra Club, which had earlier steered clear of the genetically modified foods issue, suddenly joined the rally against them. In the May 1999 issue of *Nature*, Cornell University researchers reported that laboratory tests had shown that the use of a genetically modified Bt-corn variety could kill not only targeted pests, such as the corn borer, but also Monarch butterfly larvae if the corn variety's pollen travels to nearby milkweed, the larvae's source of food. In the monarch butterfly, the Bambi of the insect world, opponents of genetically modified foods suddenly found a potentially powerful rallying symbol.

The market reacted strongly to the European restrictions and the potential spread of popular fears over genetically modified seeds and foods across the Atlantic and throughout the world. In April 1999 large grain traders, such as Arthur Daniels Midland and A.E. Stayley, requested farmers to segregate GMO-free crops and announced that they would pay a premium for GMO-free soybeans and reject genetically modified corn varieties

not approved in the EU. By October 1999 GMO-free corn and soybeans were being sold at a 25 to 30 percent premium. Combined with growing uncertainty as to the marketability of genetically modified foods in Europe and other foreign markets, U.S. farmers suddenly were uncertain whether they should plant genetically modified crops.

Perhaps most important, the financial prospects of so-called “life science” biotechnology companies dimmed. In May 1999 the investment bank Deutsche Bank/Alex Brown advised investors to sell biotech shares. Other investment companies lowered their ratings of biotech companies such as Monsanto and Dupont. Companies reacted quickly, with Monsanto, Novartis, and Astra Zeneca announcing that they would spin off their biotech agricultural divisions. Monsanto suddenly suspended its “terminator” seed project and switched its stance on labeling, advertising that it supported the labeling of genetically modified products in Europe. Monsanto's president even confessed before a Greenpeace gathering that the company had “irritated and antagonized people” in failing to listen and engage in dialogue, and he pledged to change in the future.

U.S. regulatory authorities were now being questioned whether they had approved genetically modified varieties too quickly. The U.S. Senate Subcommittee on Agriculture held hearings in the fall of 1999 over genetically modified varieties. In November 1999 the first U.S. bill to mandate the labeling of genetically modified foods was submitted in Congress. The FDA was reexamining whether further testing should be mandated to ensure the consumer safety of genetically modified foods. It also held hearings around the country to reexamine whether genetically modified foods should be deemed an additive so that labeling would be required. The Environmental Protection Agency (EPA) similarly began reviewing its policy as to whether genetically modified seeds should be subject to its pest control regulations. By the fall of 1999 U.S. Secretary of Agriculture Glickman was quoted as confirming, “Frankly, if the consumers demand labeling—even if we think it doesn't convey a lot of good stuff—we're probably going to end up with a labeling scheme.”

(3) Fallout of the Anti-WTO Seattle Demonstrations

Critics of genetically modified foods have now joined the larger coalition of labor, environmentalists, and others opposed to globalization and trade liberalization. At the WTO's Third Ministerial Meeting in December 1999, these and other groups staged demonstrations which contributed to the ultimate collapse of the meeting without a mandate for a new round of trade negotiations. By joining an anti-WTO coalition that rallied a number of constituencies important to the November 2000 U.S. elections (in particular labor unions and environmental groups), anti-GMO activists also presented a threat to the administration's hopes to obtain “fast-track” trade negotiating authority from Congress, and congressional approval of China's accession to the WTO. In addition, Congress's first mandatory five-year

review of U.S. membership in the WTO was scheduled for the year 2000, pursuant to which any member of Congress may table a bill calling for the United States to withdraw from WTO. Moreover, other U.S. commercial interests—from telecommunications to software and other new economy companies—clearly did not wish the United States to trigger potential further opposition to trade liberalization endeavors on account of yet another WTO lawsuit over food. In short, this was not an opportune time for the Clinton administration to legally challenge the EU's trade restrictions on genetically modified foods.

(4) Foreign and International Developments

The anti-GMO movement is rapidly moving beyond the European Union to other developed and developing nations. Japan and Korea, two WTO members traditionally raising barriers to U.S. agricultural exports, announced that they would tighten approval procedures for genetically modified varieties and require mandatory labeling of genetically modified seeds and foods. In the Japanese market, prices for GMO-free varieties are surging, companies and department chains are advertising GMO-free foods, and a new GMO-inspection industry is developing. Even Australia and New Zealand, large agricultural exporters, announced in 1999 that they would require labeling of all GMO-derived foods. The majority of developing countries, generally concerned over the expansion of patent and other rights over seeds and plant varieties, supported a move toward a restrictive new treaty on genetically modified foods, criticizing the monopoly rights that large U.S. and European firms hold over new seed technologies.

This global spread of skepticism about GMOs was most recently manifest in the negotiation of a new international treaty on genetically modified organisms as a protocol to the 1992 Convention on Biodiversity. The United States and a small number of grain exporting countries were first able to block the signature of a protocol in February 1999 in Cartagena, Columbia. They eventually compromised, however, and a Biosafety Protocol was signed in Montreal on January 29, 2000.

The three central issues that divided the United States from the EU and most of the world were as follows:

- the application of the “precautionary principle,” which has been employed by the EU to justify decisions to ban imports and require labeling;
- whether the protocol should cover bulk commodities intended for consumption (e.g., crops) or be limited to organisms intended for direct introduction into the environment (e.g., seeds);
- the relation of the protocol to WTO rules.

The parties compromised on all three issues, though the greatest compromises were arguably made by the United States. First, the United States compromised over the issue of the integration of the precautionary principle into the protocol. Article 10 of the protocol expressly incorporates the precautionary principle, providing that a country may reject the importation of “a living modified organism for intentional introduction into the environment” where there is “lack of scientific certainty regarding the extent of the potential adverse effects . . . on biological diversity in the Party of import, taking also into account risks to human health.” A similar provision applies to a country's rejection of bulk genetically modified commodities (e.g., soybeans, wheat, corn, and cotton) for food, feed, or processing.

Second, on the question whether the new protocol should cover crops as well as seeds, the United States won a partial victory in having the protocol's mandatory pre-shipment notification and consent provisions limited to genetically modified organisms intended for release into the natural environment (e.g., planting), so

The United States, for its part, has become more willing (or was forced) to take into account both domestic and foreign concerns about food safety, realizing that it cannot stuff genetically modified foods down the throats of a hostile European public.

that these provisions do not apply to bulk crops intended for food processing and mass consumption. However, the protocol leaves it to each country to decide whether to permit the importation of such products and provides that they may apply the pre-

cautionary principle in making this decision. In addition, such shipments must be clearly labeled that they “may contain” living modified organisms.

Third and finally, as for the relation of the Protocol to WTO rules, the United States failed to obtain a clear reservation of its WTO rights. The preamble provides that “this Protocol shall not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements.” The next phrase, however, states that “the above recital is not intended to subordinate this Protocol to other international agreements.” As an EU representative stated, the two clauses effectively “cancel each other out,” providing window dressing for U.S. acquiescence but not subordinating the environmental treaty to WTO rules. Were the United States now to bring a WTO claim over an import or labeling restriction on genetically modified seeds or food, the Biosafety Protocol would be cited as evidence of international consensus (involving over 130 countries) regarding the application of the precautionary principle. No such treaty could be cited in the beef hormone case. The U.S. government, supported by U.S. companies, was willing to compromise because they realized that they were losing on the information front, as well as in the marketplace, as concerns over GMOs spread.

continued on page 24

Trade Dispute—But No Trade War

The U.S.-EU dispute over genetically modified organisms is genuine, rooted in long-standing and largely opposing philosophies of food safety regulation, and with huge economic stakes for farmers, businesses, and consumers on both sides of the Atlantic. Nevertheless, the transatlantic GMO dispute is likely to be contained and not escalate into a WTO legal battle or a larger trade war. Despite their respective approaches to food safety regulation, both sides have demonstrated some signs of convergence in their approach to genetic modification and food safety issues. The EU, for example, has promised to define the precautionary principle in a less arbitrary fashion and to otherwise justify its regulations

abroad as nonprotectionist. The United States, for its part, has become more willing (or was forced) to take into account both domestic and foreign concerns about food safety, realizing that it cannot stuff genetically modified foods down the throats of a hostile European public. Perhaps most important, both sides seem to agree that the fragile global consensus in favor of trade liberalization would be severely tested by a WTO ruling that impinged upon a subject as universal, and as emotionally charged, as the safety of our food. Thus, despite the stakes in the conflict—or rather, because of them—the United States and EU are likely to avoid an all-out confrontation and continue to seek a transatlantic compromise in this controversial international trade issue. ■



La Follette Policy Report

THE ROBERT M. LA FOLLETTE
SCHOOL OF PUBLIC AFFAIRS
UNIVERSITY OF WISCONSIN-MADISON
1225 OBSERVATORY DRIVE
MADISON, WI 53706

Nonprofit Org.
U.S. Postage
PAID
Madison, WI
Permit No. 658

RETURN SERVICE REQUESTED