Chapter 1

Summary

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Summary

The United States and Mexico are vastly different nations, one rich, the other poor, one with political and legal roots in England, the other a blend of Imperial Spain and ancient native American civilizations. If the countries implement the proposed North American Free Trade Agreement (NAFTA), they would begin an unprecedented experiment in economic integration—the creation of a single market spanning an industrialized country and a developing country with over one-third the population but only one-tenth the per-capita gross domestic product (GDP).

OTA's analysis suggests that market forces alone are not likely to produce significant social and economic rewards following a free trade agreement. To yield substantial rewards, trade liberalization will have to be accompanied by significant changes in other aspects of U.S. and Mexican policies.

- If it is, more open trade could increase prosperity and raise standards of living in both counties.
- If it is not, closer economic links between the two countries could bring out the worst in each, driving down wages and living standards in the United States without accelerating development in Mexico.

To put the United States and Mexico on the right course will require fundamentally changing relations among government, industry, and labor in each country.

In the United States, the necessary changes could begin with Congress serving notice that competing based on low wages is not acceptable and that government and the private sector are committed to creating incentives for high-productivity, high-wage strategies that will yield benefits for communities, workers, and employers throughout the Nation.

In Mexico, a similar commitment may be necessary, in part through a relaxation of the government's hold on labor unions and wage setting. In addition, to complement foreign competition and deregulation in its efforts to strengthen the economy, Mexico's government may need to actively promote human resource development and diffusion of modem technology and organizational practices.

In both the United States and Mexico, negotiations over free trade represent part of a search for new economic strategies that will bring back the prosperity of the 1940s through the 1970s. In this period, with their economies insulated from foreign competition—by protectionism in Mexico and technical superiority in the United States—both countries enjoyed rising investment, consumption, productivity, and output. GDP grew at between 6 and 7 percent a year in Mexico and at roughly half that rate in the United States. By the mid-1970s, workers in the United States and Mexico earned roughly twice in real terms what they had earned 30 years earlier. Since the mid-1970s, stagnant productivity and increasing international competition have brought real wages in both countries back to the level of 1965.

In the United States, the end of the 30-year post-World War 11 boom has hit less-skilled and less-educated workers particularly hard (ch. 4). From 1973 to 1991, hourly wages of male high school graduates with 1 to 5 years of experience *declined* by 29 percent. From 1980 to 1989, the proportion of full-time workers with annual incomes below the poverty level for a family of four *rose* from 12 to 18 percent. It is in this context that the United States, Mexico, and Canada began negotiating a NAFTA in June of 1991. (This assessment responds to a request from Congress for an evaluation of the effects of an agreement with Mexico on U.S. jobs and economic opportunities; OTA does not deal here with the implications of U.S. trade with Canada.)

OTA's analysis indicates that a NAFTA would not have large aggregate impacts on U.S. jobs and job opportunities for the first 5 years, in part because many NAFTA provisions would be phased in gradually. Over a longer time period, during which the impact of increased investment flows to Mexico would be felt, the impacts could be more substantial. For workers who lose their jobs because of a NAFTA, whether in the short or long run, the consequences can, of course, be devastating.

For the Mexican Government, NAFTA represents the most recent in a series of steps toward a more open- and market-oriented economy and away from

a heavily protected, highly regulated one. The first major step took place when Mexico joined the General Agreement on Tariffs and Trade (GATT) in 1986, and began lowering the barriers that had protected its industries for more than 50 years. Now it seeks further industrialization by exposing Mexican firms to the spur of foreign competition and encouraging foreign direct investment (FDI) and transfers of technology that will help create new jobs for a rapidly growing workforce (more than half the population is under 20 years of age-see ch. 6).

Many in the United States worry that more U.S.-based firms will move to Mexico to take advantage of wages and benefits that average roughly one-seventh of U.S. levels and that the shift of investment to Mexico would be at the expense of U.S. workers. After all, when Mexican wages dropped by nearly two and a half times relative to U.S. wages during the economic crisis of the 1980s, production in border *maquiladoras* shot upward. In this view, "footloose plants" might also move to Mexico to escape stricter U.S. enforcement of pollution and workplace health and safety standards.

Others in the United States see foreign investment and movement of lower skilled jobs to Mexico as complementing a U.S. economy focused on high-wage, high-skill jobs. In this view, FDI would also generate the wealth Mexico needs to enforce tighter environmental and workplace standards and to provide a growing market for U.S. goods.

OTA's analysis indicates that whether a NAFTA works for or against either country will depend on how integration is managed. Managed well, with adoption of new labor and industrial policies to help the United States adapt to a unified continental market, economic integration could enable U.S. workers to enjoy 1 or 2 percent increases in living standards over the next 15 years. Mexico could grow at the 5 to 10 percent annual pace of developing Asian nations such as Thailand.

Managed poorly, less educated workers in the United States could expect to continue losing about 1 percent of their real wages annually while, after 15 years, Mexican workers would barely recover the ground they lost in the 1980s.

So far, economic integration between the United States and Mexico has not been managed well. NAFTA presents an opportunity to begin managing it better. This report focuses on how to take advantage of that opportunity. In doing so, OTA draws on considerable past analysis of international economic competition and the implications for U.S. workers, including: *Technology and Structural Unemployment: Reemploying Displaced Adults (1986); Making Things Better: Competing in Manufacturing (1990); Worker Training: Competing in the New International Economy* (1990); *Competing Economies: America, Europe and the Pacific Rim* ***(1991);*** and *After the Cold War: Living with Lower Defense Spending (1992).*

PRINCIPAL FINDINGS

The United States and Mexico are negotiating a free trade agreement at a time when workers in the United States, particularly the roughly 50 percent of the labor force that has no more than a high school education, have suffered significant declines in living standards. With or without a NAFTA, further absolute and relative declines in living standards—particularly for those in once high-wage manufacturing industries—are likely over the next 15 years. It will take a concerted national effort, with cooperation among business, labor, and government, to help the less affluent half of the U.S. workforce enjoy even modest improvements in wages and economic security.

Short-Term Impacts

1. Over the next five years, a NAFTA is not likely to have large impacts on job opportunities for U.S. workers, primarily because Mexico, not the United States, has the more protected economy. As a result, **reductions in tariff and non-tariff barriers are more likely to boost U.S. exports to Mexico than Mexican exports to the United States.**
2. Because Mexico has not made a sustained effort to upgrade its technology base and the education and skills of its workforce, products manufactured by Mexico's domestic industry are not likely to compete with sophisticated U.S. manufactured goods. However, **production by U.S. and other foreign investors in Mexico, who have the technology and resources to improve the efficiency of the Mexican workforce, could threaten U.S. workers making more sophisticated products,** such as auto engines.
3. **Although Mexico has a comprehensive set of legal protections for workers that some-**

times exceed those in U.S. law, the exercise of government authority to interpret and enforce those protections seriously compromises workers' rights to form unions, to bargain, and to strike. The Mexican government used these powers to reduce real wages by 40 percent in the 1980s and to keep wage increases modest as the Mexican economy recovered in the early 1990s, Health and safety standards in Mexico are also poorly enforced, especially in smaller enterprises. As a result, while trade with Mexico is not responsible for the current predicament of U.S. workers or the weakness of the U.S. system of labor protection, accelerating economic linkages with Mexico could reinforce downward pressure on U.S. wages and labor standards. Despite this potential, the U.S.-Mexico Memorandum of Understanding on labor issues, a response to congressional pressure, has led only to limited information exchange between the U.S. Department of Labor and its counterpart agency in Mexico. Discussions have skirted core worker rights issues in each country.

4. The impacts of a NAFTA on U.S. workers will vary by and within industry sectors. These impacts will include direct job losses and job creation, as well as downward pressure on wages and benefits for some workers who retain their jobs. Workers in apparel, auto parts, and TV assembly are already suffering job losses due to movement of production to Mexico; NAFTA may reinforce this tendency. Regardless of whether the net effect on U.S. jobs is positive or negative, **the workers most likely to be dislocated (e.g., workers producing standardized commodities** such as blue **jeans) lack the skills for jobs that may be created (e.g., machinists and technicians in U.S. firms producing capital goods for Mexican factories).** Box 1-A illustrates the difficulties faced by workers already laid off due to trade with Mexico.

Immigration

5. **Legal** and illegal migration from Mexico to the United States will remain high. **In the short run, a NAFTA promises to reduce employment in Mexico's agricultural and small-firm sectors and thereby increase emigration to the United States.**

Box l-A—What Happens to U.S. Workers Whose Jobs Move to Mexico?

Since 1983, Pillsbury Green Giant has reduced its workforce in Watsonville, California, by about 1,000 workers. These food processing workers, predominantly Hispanic women, have lost unionized jobs paying $7.50 to $12 per hour. The work has been moved to Gigante Verde in Irapuato, Mexico, where costs for the highly labor-intensive initial processing of broccoli and cauliflower are much lower. In January 1990, the company announced plans to move all cauliflower and broccoli processing (including harvesting, trimming, blanching, and freezing, but excluding final packaging) to Irapuato. Final packaging, a highly automated process, continues to be done in the United States, at Watsonville and at plants in Ohio and Illinois. Watsonville also continues to do some of the initial processing of California-grown vegetables.

Since 1990, the Watsonville workforce has shrunk from 550 workers to 170. A joint union-management-government outplacement and retraining program, established with Federal funds through the EDWW (Economic Dislocation and Worker Adjustment Assistance) program, provided some help. Santa Cruz County's EDWAA office offered on-site job counseling, retraining, and placement services at the plant. However, the EDWAA grant lasted only 18 months, expiring on July 1, 1992. Retraining focused on English language skills. As funds ran out, many of the workers had been able to improve their English, but not their ''marketable skills. ''

Environment

6. Although Mexico has comprehensive environmental laws not unlike those of the United States, enforcement has been lax. Mexico has few inspectors and budgets little for pollution control, cleanup, and inspection. Public pressure for environmental improvement is only now beginning to appear.
7. The jointly prepared *Integrated Environmental Plan for the Mexican-U.S. Border Area* is only a small step toward improving the border environment. Many of the *Plan's ''action* items' call for information exchange and more studies, rather than investments in needed cleanup and control. **The** *Plan* **lacks concrete goals and the financial commitments needed**

for substantial improvements in the border environment.

Longer-Term Social and Economic Impacts

1. Over **a 15-year time frame, a NAFTA could have larger impacts on U.S. workers and** economic performance. Even over these periods, impacts would be limited by the fact that Mexico's economy will remain small compared to that of the United States. Mexico's GDP today is about 4 1/2 percent that of the United States.

2. Notwithstanding conventional economic wisdom (box l-B), the long-term impact of a NAFTA on U.S. workers and productivity growth could be negative unless government

Box l-B—Free Trade Theory and the Economic Consequences of NAFTA

NAFTA proponents have used neoclassical free trade theory to argue that the United States and Mexico can only benefit from an agreement. OTA's analysis indicates that the neoclassical arguments for free trade are of minor significance. The impact of a NAFTA on productivity growth and unemployment are more important. This is particularly so because NAFTA comes when the United States is in a transition from a national, mass production economy to a continental and global economy—a historical and institutional context ignored by mainstream free trade models.

There are two central components to the neoclassical case for free trade between the United States and Mexico: allocative efficiency and scale economies. The allocative efficiency argument maintains that free trade will benefit the United States and Mexico because the two countries have widely different stocks of capital and labor. As a result, if the United States specializes in the production of capital-intensive goods and Mexico specializes in the production of labor-intensive goods, aggregate output will be higher than if each country produced a full complement of goods internally. The scale economies argument maintains that production for a larger, more integrated market will permit volume-related cost reduction, particularly in Mexico, where there are many small, inefficient plants that historically served only the protected Mexican market.

Economic models suggest that the gains from allocative efficiency improvements will be less than 1 percent of Mexico's GDP. Depending on assumptions, gains from scale economies range between 1 and 9 percent of Mexico's GDP—at most, one-third of 1 percent of U.S. GDP.

More difficult to incorporate into economic models but ultimately of far greater significance will be the influence of closer economic ties on long-run U.S. and Mexican productivity growth (ch. 5, app. 5A). As comparison with Britain, West Germany, and Japan demonstrates, differences in productivity growth stemming from contrasting corporate and national development strategies can, over the course of several decades, generate differences in living standards on the order of 100 percent. In the U.S.-Mexico case, what matters most is whether NAFTA and policies implemented in parallel with it push the United States and Mexico towards high-productivity, human resource intensive paths or low-wage, low-productivity development paths.

A second issue, missing from neoclassical models of NAFTA impacts but potentially very important, is the impact of wage competition on aggregate demand and unemployment. Some analysts worry that competitive erosion of wages in a more integrated global and continental economy could result in wages in the United States and its trading partners that lag behind productivity growth. As some believe happened in the Great Depression, lower wages could cut workers' purchasing power and create unemployment. But rather than worrying that wage reductions might reduce aggregate demand, most economists today take the ''classical' view that wage reductions reduce unemployment.

While the empirical and theoretical plausibility of a depression due to declining wages remains a subject of controversy, making low wages a central part of full employment policy in North America does run the risk of aggravating unemployment by reducing consumer demand. OTA's analysis suggests that other approaches to achieving full employment in North America be considered, including:

1. direct job creation through investments in improved infrastructure and environmental protection;
2. a North American Development Bank that would help alleviate Mexico's debt burden, thereby enabling Mexico to grow faster, reduce its own unemployment, and reduce U.S. unemployment by slowing emigration and increasing Mexican purchases of U.S. exports;
3. reduced working hours.

and the private sector take steps to prevent that outcome.

a) **NAFTA could precipitate a significant diversion of U.S. investment to** Mexico. Following an agreement, U.S. firms might move existing production to Mexico or build new plants there instead of at home.

   Many firms investing in Mexico will not be responding to specific changes in investment regulations within a NAFTA, but to heightened awareness of Mexico following the NAFTA debate and to the signal that investments in Mexico are ''safe. ' An agreement would make it more difficult for a future Mexican government to reverse policies designed to attract investment.

b) While massive third-country investment in Mexico is unlikely in the short term, over the longer term a NAFTA could lead to greater Asian and European investment to serve the U.S. market. To date, Japanese and other third-country firms have not been especially satisfied with investments in Mexico because of its poor infrastructure and lack of local suppliers. By the late 1990s, however, these constraints should begin to fade, making Mexico a more attractive location.

c) With increased investment in Mexico and a large (over 20 million) and rapidly growing pool of less educated workers there, U.S. employers will gain added leverage in their dealings with less educated U.S. workers. More such workers in the United States will find themselves competing directly with workers in Mexican plants; increasingly, employers will be able to use the threat of relocation to depress wages here.

   Past experience in the United States indicates that downward pressure on U.S. wages could exist even if the United States enjoys—as it does now—a trade surplus with Mexico. From the 1950s through the 1980s, in most industries, southern U.S. States ran a ' 'trade deficit' with the Midwest; nevertheless, low wages and low levels of unionization in the South contributed to the erosion of industry-wide bargaining, union influence, and manufacturing wages in the Northeast and Midwest.

d) A NAFTA could reinforce U.S. employers' efforts to compete using low-wage rather than high-wage strategies, increasing direct competition with Mexico and other developing countries on the basis of wage levels.

POLICY AND THE NAFTA

OTA's analysis suggests that Congress may wish to evaluate NAFTA in light of an agreement's contribution to the effective management of the long-term process of economic integration. The policy options listed in table 1-1 and discussed in detail in chapter 2 are designed to help manage that process. These policy options would encourage U.S. manufacturing and service firms to pursue skill-intensive strategies that generate wage growth for U.S. workers, limit U.S. income inequality, enable positive sum trade with Mexico, and assist dislocated workers.

OTA's analysis indicates the need for major reorientation of U.S. industrial development, training, and labor market policies, The Nation's current economic difficulties-and declining wages—were "made in the USA"; that is where, by and large, they must be solved. OTA's domestic policy options fall into three complementary categories:

1. those that would help provide U.S. firms and workers with the skills and technological know-how to compete on the basis of quality, productivity, and flexibility rather than low wages;
2. policies intended to discourage low-wage, low-skill strategies that can be replicated easily in Mexico and other developing countries; and
3. options that would promote the worker participation and worker commitment necessary to compete on a basis other than wages.

While domestic policy matters most, OTA's analysis indicates that policies and development strategies in Mexico will have an important influence on workers' prospects in the United States. In particular, if Mexico fosters broad-based development, and allows workers to share in its fruits, the resulting wage increases, exchange rate appreciation, reduced emigration, economic growth, and demand for imports will facilitate U.S. adjustment to a high-productivity, high-skill path. OTA's continental policy options suggest ways in which the

Table I-l—Summary List of Policy Options

I. Domestic Policy Options

Issue *Area A: Promoting a Productive Economy (see* table 2-2, ch. 2)

1. **Approve a modified version of the High Skills, Competitive Workforce Act of 1990**
2. **Create a comprehensive worker adjustment program**
3. **Expand Trade Adjustment Assistance**
4. **Certify basic skills of new labor force entrants**
5. **Broaden and deepen links between firms**
6. **Create a Regional and Community Adjustment Corporation, focusing on direct public job creation**

Issue *Area B: Curfailing Low-Productivity* Strategies (table 2-3)

1. **Establish national commitment to social welfare through a U.S. Social Charter**
2. **Discourage low-wage strategies and reduce income inequality through wage and tax policies**
3. **Discourage State and local economic development based on "bidding wars" to recruit new industry**

/ssue Area C: Participation in a Productive Economy **(table** *2-4)*

1. **Create a Labor Market Productivity Center to foster consensus-building and expand institutional support for work reorganization**
2. **Create Employee Participation Committees to provide worker "voice" in nonunion as well as unionized companies**
3. **Extend union representation to more workers and industry sectors**
4. **Foster institutions for worker voice in the service sector**

II. Continental Policy Options (table 2-5)

1. **Negotiate a North American Social Charter and establish a North American Commission for Labor and Social Welfare**
2. **Establish procedures for continental management of trade and investment in autos and other sectors**
3. **Create a Binational Commission with stable funding to improve the environment and infrastructure in the border region**
4. **Provide technical assistance to Mexico for improving worker health and safety**
5. **Provide loans and aid for balanced economic development in Mexico**
6. **Establish North American works councils to represent employees of companies operating in more than one country**
7. **Provide trilateral dispute resolution on labor issues**
8. **Negotiate shorter work time for the continent**
9. **Establish a Commission on the Future of Democracy in North America**

SOURCE: Office of Technology Assessment, 1992.

United States and Mexico could cooperate to foster broad-based development in Mexico that will benefit U.S. workers as well.

OTA's domestic and continental policy options go considerably beyond those so far discussed in the NAFTA debate. The focus of that debate has been on: 1) domestic adjustment policies and funding, which the administration promised as Congress considered "fast track" negotiating authority in the spring of 1991; and 2) a commitment to negotiate labor and environmental issues with Mexico in talks parallel to but not part of NAFT.A.

Claiming the administration has not followed through, some labor, environmental, and business interests are likely to urge Congress to vote down NAFTA. Voting no might, however, precipitate the reemergence in Mexico of nationalist hostility to the United States. Particularly if accompanied by a stall in Mexico's recovery, it could threaten the stability of the Mexican political system, reducing the prospects for both democratization and for cooperation with the United States. Political and economic problems, in turn, could worsen Mexico's underemployment problem, keep wages stagnant, and increase emigration. Thus, failure to reach an agreement could increase the immediate pressures on less-skilled U.S. workers and also dim the prospects for improving environmental management along the border.

Moreover, a congressional no vote on NAFTA would be the first refusal to approve a trade agreement in U.S. history. It would signal a further retreat from the Nation's role as defender of open trade within the multilateral system. Erosion of the

Table 1-2—Policy Options for the Near Term

	Domestic Options			
	Promoting a productive economy	Curtailing low-productivity strategies	Participating in productive economy	Continental options
Statements of principles		Approve a U.S. Social Charter recommitting the United States to improving the welfare of U.S. workers		Negotiate a preliminary North American Social Charter
Near-term policies	Approve a modified version of the High Skills Competitive Workforce Act of 1990 Establish a comprehensive worker adjustment system		Approve H.R. 3160, the OSHA reform bill, with its provision for workplace health and safety committees	Provide technical assistance to Mexico to improve health and safety standards Establish a Binational Commission with stable funding to improve environment and infrastructure in border area Negotiate a Japan-North America or Global Auto Pact
Study, reporting, and institution-buildlng options			Fund a private sector, multi-constituency Labor Market Productivity Center and ask it to-study how to f ill the U.S. representation gap	Establish a North American Commission for Labor and Social Welfare Provide trilateral dispute resolution on labor issues Call for creation of North American works councils

SOURCE: Office of Technology Assessment, 1992.

multilateral system could also diminish prospects for international agreements on environmental and labor issues.

On the other hand, if NAFTA comes before Congress unaccompanied by significant domestic reforms, voting yes might be tantamount to ratifying the mismanagement of economic integration. This could further lock the United States into a low-wage, low-productivity future.

Congress will have 90 days from the time of official notification of an agreement to consult with the administration on NAFTA before turning to implementing legislation. This period offers an opportunity for Congress and the executive to consider the merits of a ‘‘bare’ NAFTA-the narrow trade and investment deal returned by the negotiating teams for the three countries in August 1992--compared with a NAFTA as part of a package that might include complementary domestic and continental social policy measures and parallel understandings with Mexico on environmental and labor issues. Such a package could make it clear to U.S. workers and to U.S. corporations that North America means to shift away from low-wage, low-productivity development to high-productivity, environmentally and socially sustainable development.

A relatively lengthy period of debate and discussion would necessarily precede adoption of some of the domestic and continental options listed in table 1-1 and discussed in chapter 2. Table 1-2 lists a package of the policy options from table 1-1 that would, taken together, send a positive signal about future development in North America. This package includes options that fall into three categories: 1) statements of principle that could guide domestic and continental development as the United States and Mexico become increasingly interdependent; 2) policy options that could be adopted in the same approximate time frame as NAFTA itself; and 3) study, reporting, and institution-building options. Enacting statements of principle and reporting and institution-building options could help ensure that attention to options that require more extended debate does not flag after the NAFTA spotlight has dimmed.

The first row of table 1-2 suggests that the United States might seek to combine a NAFTA with U.S. and North American social charters. Chapter 2 outlines some of the rights and goals that could be included in a U.S. Social Charter. It would represent a blend of recommitments to familiar social goals, such as full employment, and the definition of new goals-+. g., a right to training for workers throughout their careers, and a reversal of the trend toward greater income inequality-to guide U.S. policy as the Nation adapts to global economic competition. Along with the new Mexican Productivity Accord (ch. 4), a U.S. Charter could help lay groundwork for a North American Social Charter. A skeletal Charter might be negotiated quickly and incorporated in an extended preamble to NAFTA or in a separate accord. It could then be elaborated and implemented through future negotiations over a later period.

The second row of table 1-2 lists a number of concrete policy options that could be implemented in the same time frame as NAFTA approval, including three domestic options:

1. Adopt a modified version of the High Skills, Competitive Workforce Act of 1990. In the domestic arena, the obvious choices for immediate consideration begin with skill development. The administration and Congress have both expressed the view that the United States needs to invest more heavily in human resources, particularly for workers with less education and those with jobs at the base of organizational pyramids. This consensus is reflected in the bipartisan High Skills, Competitive Workforce Act of 1990 (S. 1790 and H.R. 3470).

   This bill would encourage certification of basic and occupational skills, demonstrate new approaches to helping young people move from school to work, foster creation of multiemployer training consortia and diffusion of production practices making better use of workers' knowledge, require all firms with at least 20 employees to spend 1 percent of payroll on training or pay an equivalent sum into a State training trust fund, and encourage the States to create State and local Employment and Training Boards. This act would be the first comprehensive, multifaceted federal effort to move the United States towards a skill-intensive development strategy. A free trade agreement with Mexico would make it more important than ever for the United States to take a decisive step in this direction.
2. Create a comprehensive U.S. worker adjustment system by enhancing training and income support for unemployed workers. The NAFTA debate on labor market adjustment has focused on whether workers displaced by imports--or the movement of production to Mexico-should be provided with training and income support through Trade Adjustment Assistance (TAA) or a new NAFTA adjustment program. Rather than continue to make assistance for displaced workers depend on why they lose their jobs, OTA's analysis suggests a more comprehensive approach in which increased finding for the Economic Dislocation and Worker Adjustment Assistance (EDWAA) program and the unemployment insurance (UI) system make a full range of services, including long-term training with income support, available to all displaced workers.
3. Pass H.R. 3160, the OSHA reform bill. Workers in the United States are concerned that competition with Mexico will erode health and safety standards here; OTA's analysis indicates that weak U.S. institutions of worker voice—a "representation gap' '—leads to low worker commitment and obstructs pursuit of participative strategies. Congress could respond to worker concerns about health and safety *and* create a modest new institution of worker voice by passing H.R. 3160. The key provisions of this bill include the establishment of health and safety committees in companies with 11 or more full-time employees. Committees and their employee representatives would have specified rights and responsibilities for monitoring and enforcement of health and safety standards. Other provisions, including an employee right to refuse to work in imminently hazardous conditions, would also strengthen health and safety protection,

On the continental front, the second row of table 1-2 lists three concrete policy options that could be implemented in approximately the same time frame as a NAFTA:

1. A program to provide Mexico with technical assistance to improve its workplace health and safety standards.

2. Establishment of a Binational Commission on Border Environment and Infrastructure. This Commission could be provided with a stable funding source outside the annual appropriations processes in the two countries, perhaps based on a binationally negotiated *maquila* investment tax.
3. Negotiation of a Continental (Japan-North America) or Global Auto Pact. Shifting additional auto production to North America would give Mexico the opportunity to build integrated networks of assemblers and suppliers without cutting into U.S. production and jobs.

Finally, the bottom row of table 1-2 lists one domestic and three continental monitoring and institution-building options that would help sustain the debate about the domestic and continental management of economic integration and pave the way for implementation of more comprehensive policies over time:

1. A U.S. Labor Market and Productivity Center, with a board composed of representatives from business, labor, disadvantaged labor market groups, and the training community, to help develop consensus on the labor market and labor law policies necessary to move towards a high-productivity path. As one major task, to be completed within perhaps 2 years of the signing of a NAFTA, the Center could be called on to forward recommendations for filling the U.S. representation gap-the absence of unions or other forms of employee representation in most workplaces.
2. A trinational North American Commission for Labor and SociaI Welfare, with its own funding and separate from the executive branches of each country, having responsibility for further developing the principles outlined in a North American Social Charter and defining ways of achieving those goals.
3. The creation of a nonbinding trilateral dispute resolution mechanism on labor issues.
4. Provision for North American works councils in companies with significant operations in more than one country of North America.

MEXICO'S INDUSTRIAL DEVELOPMENT PROSPECTS

Analyzing in detail the implications of free trade with Mexico requires understanding the capabilities of Mexican industry. Parties to the debate on NAFTA have expressed widely divergent views of Mexico's capabilities and the resulting implications for the United States. At one extreme are those who hold that Mexico has shown itself capable of producing most manufactured goods as well as the United States and that massive flows of investment to Mexico will take place over the next decade to take advantage of cheap labor. At the other extreme are those who believe exposure to competition will decimate historically protected Mexican enterprises to the benefit of U.S. exporters. OTA's analysis indicates that both views mistake one part of the unevenly developed Mexican economy for the whole.

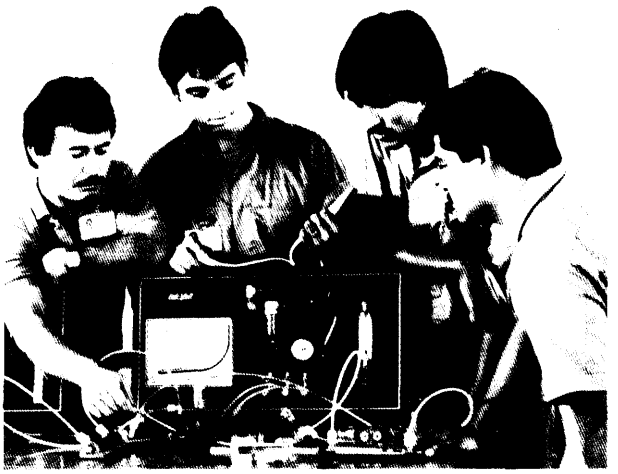

Photo credit: Ford Motor Company

Worker training at Ford's Hermosillo, Mexico stamping and assembly plant.

Over the past decade, new plants operated by multinational corporations (MNCs) have demonstrated levels of productivity and quality equal to those in the United States. High-performance ''islands of excellence' in Mexico's largely inefficient manufacturing sector span significantly more than simple assembly operations. They include, for example, world-class auto engine and stamping plants. Threatened U.S. workers see these examples—like the recent announcement by Smith-Corona of the transfer of its remaining typewriter production to Mexico-as precursors of wholesale movements of production that could cost their jobs and destroy their communities.

Most of Mexican manufacturing, however, is inefficient and produces low-quality goods using

labor-intensive methods. Compared with, say, South Korea, Mexico has only a few large and technologically sophisticated fins. Unable to compete, many small Mexican manufacturers of apparel, furniture, shoes, and other goods have gone out of business since Mexico began lowering its trade and investments barriers in the mid to late 1980s. More will disappear in the future.

Nonetheless, based on the success of pioneering modern plants and proximity to the U.S. market, Mexico will gain increasing investment. At the same time, Mexico's attractiveness as a location for export-oriented production will be limited by poor infrastructure, shortages of local suppliers, and lack of experienced technicians, engineers, and managers. MNCs can circumvent these bottlenecks-e. g., by paying well enough to attract the most trainable workers from local labor markets-but human resource constraints will limit prospects for smaller Mexican-owned companies.

Mexico did not emphasize vocational training and development of technical professionals and managers during its extended period of import-substitution industrialization (from roughly 1950 until the middle 1980s). Investments in basic education lagged behind those in the successful developing Asian economies. Moreover, Mexico, like the United States, spends its educational resources disproportionately on those at the top of the educational hierarchy.

Given a legacy of protection and human resource bottlenecks, small and medium-sized Mexican firms are only now learning the techniques long since mastered by the better small U.S. fins. As a result, Mexican production for the U.S. market is likely to depend for the next 10 to 15 years on the resources, including technology and managerial expertise, of foreign-based MNCs. Thus, Mexican development may continue to resemble the ''branch plant' economies of the southern United States from the 1950s to the 1980s. At the same time, the policies of Mexico's government, the rapid expansion of production in parts of northern Mexico, and growing corporate preferences for suppliers willing to locate nearby could foster more rapid and more integrated development than the low-wage, low-tax development strategies in the U.S. South.

THE SECTORS

This part of the summary includes snapshots of four broad sectors analyzed by OTA. Three are manufacturing industries-autos and parts, electronics, and apparel. The fourth consists of agriculture and food processing. Four tables, one for each sector, highlight findings from the body of the report concerning the relative attractiveness of production in the United States as compared with Mexico over the medium-term future of 5 to 15 years. These summaries are based on extensive interviews by OTA staff and contractors, as well as published sources (see chs. 7-10).

To a greater or lesser extent, the four sectors are each part of global industries. Mexican production today depends on imported parts and components. These patterns are not fixed. But Mexico's ability to absorb foreign know-how fast is limited, even with the aid of multinational investment. And while Mexico's competence improves, so will that of Taiwan, Thailand, and Brazil.

Autos and Parts--(table 1-3). U.S.-owned automakers and parts firms are in deep trouble. For two decades they have been pressed by Japanese-owned fins, who now assemble cars and small trucks in Us. ''transplants.'' The U.S. Big Three have pursued their own international production strategies, which have long included production in Mexico. Since before World War II, the Mexican Government has required automakers to assemble cars in Mexico in order to sell there. More recently, complex export-balancing requirements have led to investments in production for export to the United States (ch. 7).

Assembly and engine plants went into Mexico primarily to satisfy the demands of the Mexican Government; cost advantages with respect to U.S. production, when they exist, have been relatively small. In contrast, production of auto parts having relatively high labor content is substantially cheaper in Mexico. More than 65 Mexican plants already supply wiring harnesses to U.S. (and Mexican) assembly plants. Most *maquiladora* parts plants perform simple operations using unskilled labor, but the world-class assembly and engine plants operated by Ford, Nissan, and other automakers demonstrate that Mexican labor can also compete in quite sophisticated production. Transportation costs eat up most or all of the labor-cost savings for finished

Table 1-3—Autos and Parts

United States	Mexico
Structure of industry and market	
Vehicle Producers. Six **major assemblers, several smaller firms, compete through both North American production and imports. Open market but stagnant demand, with limited growth prospects over foreseeable future. Nonetheless, shifts in demand (e.g., for small trucks in place of passenger cars) will create new opportunities to stake out market position.**	*Vehicle producers. Five* **major firms compete in a historically regulated market, one that remains almost entirely closed to imports. Growth in demand potentially quite rapid, but will depend both on Mexico's overall economic expansion and on shifts in income distribution.**
Independent suppliers. Assemblers are streamlining their supply networks, reducing the number of firms they buy from. Many second-and third-tier suppliers will have trouble meeting stringent demands for cost, quality, delivery, and, in some cases, for engineering.	*/dependent suppliers.* **Mexican-owned supply industry largely uncompetitive.** *Maquilas* **have focused on labor-intensive items.**
Blue- and grey-collar labor force	
Ample supply of skilled and experienced labor, but many transplants prefer nonunion workers over experience. Smaller suppliers, mostly nonunion and paying significantly lower wages than assemblers, have had trouble attracting and retaining skilled employees.	**Mexico's blue-collar workforce seems nearly up to world standards in terms of trainability, but high turnover means companies lose much of their human resource investment. Availability of skilled grey-collar workers (technicians, machinists, toolmakers) could restrain expansion.**
Technical and managerial labor force	
American managers, in both automakers and suppliers, must adapt more quickly to new competitive conditions.	**Capable managers in short supply, particularly at middle levels and for supply firms. Lack of experienced engineers will make it difficult for suppliers to move into technologically demanding niches.**
Labor Relations	
Traditionally adversarial. Tentative moves toward more cooperation in U.S. assembly plants but only a few suppliers. Industry shrinkage, nonunion transplants, and movement to Mexico could resurrect adversarial relations.	**Much variation. Some local unions co-opted and manipulated by government or by companies. Worker-controlled independent locals could pioneer "negotiated flexibility" but may be repressed.**
Availability y of Materials, Components, and Other Inputs to Production	
Almost anything is available, but quality sometimes questionable.	**Very restricted from local sources,**
Infrastructure (transportation, communications, etc.)	
Generally good; deteriorating highway system needs attention.	**Ground transport slow, unpredictable, and expensive but improving rapidly, especially near the border. Poor communications promise to be easier to overcome (e.g., through private lines and data links). Water supplies, sewage, waste disposal promise persistent though manageable difficulties.**
Government Policies	
Federal. **Japanese quotas symbolic in recent years; only major trade restriction is 25 percent tariff on light trucks. Trade friction, especially over sourcing of parts by transplants, will continue.**	**Heavily regulated, with gradual trade and investment liberalization in recent years. Future human resource and industrial policies could be significant for supplier development.**
State. Intense competition to attract major plants through incentive packages. Industrial extension, network building should help improve productivity and adaptability of small- and medium-sized suppliers.	
The Future	
U.S. jobs in parts production (in plants operated both by independent suppliers and the Big Three) will beat greater risk than assembly jobs. Many U.S. parts plants are old and poorly managed. If costs are high and quality low, managers may opt to move to Mexico rather than trying to modernize and improve performance in the United States. A growing supplier base in Mexico might then attract more assembly plants.	**Automakers are likely to put new assembly plants into Mexico at rates that depend more on Mexican demand than on U.S. demand.**

SOURCE: Office of Technology Assessment, 1992.

vehicles, but engines and other powertrain components can be shipped more cheaply; for engines, Mexican production yields savings of up to 10 percent (e.g., $70 delivered to the United States for an engine with a manufacturing cost of $700).

As many as 150,000 Mexicans now work in export-oriented auto and auto parts plants. It would be too simple to state that all these jobs would otherwise be located in the United States; some would be in other low-wage countries, and some would have been automated if production had remained in the United States (or Canada). It would also be too simple to conclude that U.S. or Japanese automakers will put new plants into Mexico simply because Mexican wages are low. Direct labor accounts for perhaps 10 percent of costs in assembly plants, less for engines-and will decrease with continued improvements in design-for-manufacturability. But the pressure on U.S. parts suppliers suggests continuing movement to Mexico in search of lower costs.

Electronics-(table 1-4). The segments of this industry differ in fundamental ways (ch. 8). Labor costs are a relatively minor concern, with two major exceptions: consumer electronics and some kinds of components. Much of consumer electronics—especially TV production—remains a traditional, mass production business, with low margins and intense cost competition. Only one U.S. firm of any size remains-Zenith-and it produces most of its output in Mexico and other offshore locations. Components and subassemblies for electronic products, such as transformer coils and power supplies, which also have high labor content, have likewise migrated out of the United States, often to Mexico.

Simple personal computers (PCs) are not too dissimilar from TVs in assembly requirements, but product and system designs—and component technologies--change much more rapidly. Except for standardized, low-end PCs, there has been little reason to locate production in low-wage countries. Much the same is true in telecommunications. Labor costs are important for telephones, answering machines, and other types of customer premises equipment. AT&T and other U.S.-based firms now make some of these products in Mexico and others in the Far East. But direct production labor is a minor cost factor for more complex, systems-oriented telecommunications products. These are made in Mexico by multinational firms because the government has demanded it. Through its controls over market access, Mexico's government has also attracted some production of small computers. Now that IBM, Hewlett-Packard, and other companies have plants there, they are not likely to leave, even though a NAFTA might allow them to ship into Mexico from the United States or elsewhere. But as the government's ability to influence foreign investors wanes, Mexico may have trouble attracting new electronics plants except for the simple assembly operations in which it already specializes-products like TVs, keyboards, and printers.

Mexico's problem in electronics, even more than in autos, is one of organizational competence. Mexican fins, unless they have strong ties to U.S. or third-country fins, have very limited capabilities. Quality standards are low, training poor and turnover high, work organization inflexible, product development and marketing experience minimal. Companies without links to the international economy will have trouble forming them.

Apparel—(table 1-5). Exports from *maquiladora* apparel plants to the United States grew at about 10 percent annually during the late 1980s, and even more rapidly during the last 2 years. These plants assemble basic, commodity-like items (work clothes, underwear) in direct competition with U.S. plants, which sometimes have costs up to twice as great for sewing and manual cutting, Nonetheless, the United States continues to produce large volumes of basic clothing, in part because automation (computerized cutting) and work reorganization (so-called Quick Response strategies, aimed at greater flexibility and responsiveness to market demand) have helped offset higher wage bills (ch. 9), Where quality requirements are higher, or retailers want rapid deliveries of women's clothing and other fashion-sensitive apparel, Quick Response appears especially promising. Here the competition has been from Asia; Mexican apparel firms do not currently compete in this part of the market. But given a NAFTA, some U.S. apparel firms might decide it is easier to move to Mexico than to implement new strategies at home.

The *non-maquila* sector of Mexico's apparel industry includes many small firms that make cheap clothing of poor quality for sale in domestic markets. These firms are in no position to export into the United States. To do so, they would need infusions

Table 1-4--Electronics

United States	Mexico
Structure of industry and market	
Consumer. **Most demand filled by imports (VCRs, camcorders, audio, etc.), although final assembly of some large TVs remains. Sales growth a function largely of new product introductions (CD players, Walkmen)--otherwise mostly a replacement market. Few new products developed in the United States.**	*Consumer.* ***Maquilas*** **produce subassemblies and finished products for export to the United States. Domestically-oriented firms have been decimated by import competition since lowering of trade barriers.**
Computer equipment. **Pioneering industry faced with new challenges as growth slows after many years of expansion and markets fragment into specialized niches. With maturity, production of simpler items has moved abroad, beginning with peripherals and low-end processors.**	*Computer equipment.* **Little or no independent capability. MNCs and Mexican-owned firms assemble simple machines, produce keyboards, monitors, and other components and subassemblies. Thus far, foreign investment has not led to much growth of Mexican suppliers.**
Telecommunications equipment **Still dominated by AT&T, but imports a major factor in simpler customer premises equipment (keysets, PBXs, FAX machines); foreign-based multinationals will continue to seek to expand in the deregulated U.S. market.**	*Te/ecommunications equipment.* **Essentially all technology from abroad. With TelMex newly privatized, AT&T has joined Ericsson and Indetel-Alcatel as a third major hardware supplier.**
Blue- and grey-collar labor force	
Broad range of skill requirements, from simple assembly to trouble-shooting complex digital systems. Continuing retraining will be needed, particularly in software.	**Need for skills will slow movement beyond simply assembly tasks.**
Technical and managerial labor force	
Available and adaptable.	**Limited,**
Labor relations	
Much of electronics has been nonunion. Those sectors that have been organized-e. g., TV production-have been so damaged by foreign competition that labor has little leverage left.	**High turnover in** *maquilas* **in part a symptom of poor underlying relations, as well as ongoing "industrialization of the labor force, " but unions in any case docile and ineffectual, with a few exceptions (e.g., TelMex).**
Availability of materials, components, and other inputs to production	
Increasing imports even of high-technology components, also production equipment.	**Little local production except for simple components.**
Infrastructure (transportation, communications, etc.)	
Satisfactory.	**Poor (see table 1-3 entry).**
Government policies	
Important especially in telecommunications (e.g., the ability of the regional Bell operating companies to enter manufacturing). Highly visible industry will continue to draw trade and technology policy attention.	**A privatized TelMex does not necessarily mean an end to government influence. As multinational suppliers continue to compete for future telecommunications sales, their investments and imports of technical know-how will contribute to Mexico's capabilities.**
The future	
As electronics becomes more a matter of systems and software, there will be fewer U.S. jobs for less skilled workers. At the same time, a good deal of final assembly will remain in the United States simply because of low direct lab content. Imports of components will continue to increase, but most will come from Asia, not Mexico.	**Mexico will continue to produce home entertainment electronics for export, and more complex equipment intended for sale within Mexico. Multinationals and Mexican firms closely linked with multinationals will account for almost all of this production.**

SOURCE: Off Ice of Technology Assessment, 1992.

of capital for more modern equipment, better trained workers able to turn out higher quality goods, and managers able to organize production more efficiently and market their goods in an intensely competitive setting; poor distribution channels into the U.S. market have been a particular handicap.

Table 1-5-Apparel

United States	Mexico
Structure of Industry and market	
Despite many years of intense import competition, a relatively large number of mostly small apparel firms continue to manufacture in the United States, many in New York, California, and the Southeast. In part, this is because rapid, flexible response to market shifts can compensate for higher direct production costs-especially in fashion-sensitive clothing-in this highly labor-intensive industry.	Although *maquila* plants can produce basic apparel products at costs well under U.S. costs, the Mexican industry is weak overall compared with successful Asian producers. Countries like China can undercut Mexico's costs at the low end, while manufacturers in more advanced Asian countries (e.g., Hong Kong) can supply better cost/quality combinations for fashion-sensitive goods. Domestically oriented Mexican apparel firms have had great difficulty meeting Asian competition since the lowering of import barriers.
Blue- and grey-collar labor force	
Large U.S. cities continue to provide pools of workers, many of t hem immigrants, willing to work for low wages under sweatshop conditions.	In principle, nearly unlimited; apparel firms often provide the first industrial jobs held by workers from rural areas.
Technical and managerial labor force	
Technical labor (as opposed to design) not particularly important, but management is critical for "Quick Response" strategies.	Poor productivity and quality in much of the industry reflect poor organization and management.
Labor relations	
Industry largely nonunion in the Southeast. Strong unions particularly in New York City have engaged in a lengthy effort to retain jobs and improve working conditions.	Low union coverage became of small size of domestic shops.
Availability of materials, components, and other inputs to production	
Many U.S. textile firms are low-cost producers, but because textiles trade internationally in large volumes, a local textile industry does not confer a great deal of advantage in apparel. Much the same is true for production equipment.	Mexico's textile industry is generally uncompetitive. *Maquila* producers get almost all their cloth from the United States, in part because this has been a condition for favorable tariff treatment.
Infrastructure (transportation, communications, etc.)	
Good transport, communications including computer links-a requirement for Quick Response.	Problems the greatest for small, independent firms and least for those tightly linked with U.S. apparel manufacturers or retailers.
Government policies	
Extensive structure of import quotas within the framework of the Multi-Fiber Arrangement (MFA), coupled with relatively high tariffs, have provided considerable protection for U.S. production. At the same time, because duties are only levied on foreign value-added, offshore assembly in Mexico and the Caribbean has been encouraged.	While Mexico's exports to the United States are in principle governed by bilateral quotas, in practice almost any apparel items from Mexico can enter in almost any quantity.
The future	
U.S. apparel employment has been declining since the early 1970s, and now stands at something under a million. Many of these jobs have been preserved through business strategies keyed to responsive customer service. To the extent that U.S. firms continue to implement such strategies effectively, they will remain viable against competition from both Mexico and the Far East. But if companies see a NAHA as meaning easy access to low-wage labor, they may forsake innovative strategies and simply move south of the border. Moreover, continuing U.S. trade restrictions on imports from third countries could lead to greater Asian investment in the Mexican apparel industry.	Whether or not a NAFTA Is implemented, Mexico's export-oriented apparel sector will continue to expand. A NAFTA would accelerate this expansion by reducing or eliminating tariffs on Mexican apparel. Most of the export-oriented plants, moreover, currently do sewing on fabric cut In the United States because this qualifies the product for more lenient tariff treatment. With a NAFTA, manual cutting for Mexican assembly would begin moving south of the border, although companies with heavy U.S. investments in automated cutting would probably not relocate these operations.

SOURCE: Office of Technology Assessment, 1992,

None of this is to say that U.S.-based firms, migrating to Mexico in search of low-cost labor, could not prosper in such an environment. A NAFTA that eliminated tariffs on Mexican apparel, which now average 17-18 percent, would accelerate the expansion of sewing in Mexico and lead to the movement of more cutting as well. But so far there has been little transfer of advanced production practices associated with Quick Response. If such practices were to be adopted in Mexico as rapidly and effectively as in the United States, much production that would otherwise remain here would be at risk.

Agriculture and Food Processing--(table 1-6). In Mexico's two-tiered agricultural system, several million small-scale farmers grow subsistence crops (corn, beans) with traditional practices, while a relatively modem agribusiness industry produces fruits and vegetables for export to the United States. The traditional sector has low productivity; indeed, many small farmers cannot feed their own families. The modem sector has been able to capitalize on Mexico's inherent advantages-which stem from climate and growing conditions as well as low wages-to compete effectively with U.S. producers, particularly for labor-intensive fruits and vegetables (e.g., winter tomatoes) (ch. 10).

But Mexico's advantages have their limits. The country has relatively little water and arable land, Agricultural technology remains well behind U.S. practices, for example in use of pesticides, herbicides, and fertilizers. Many farms even in the modem sector get substantially lower crop yields than are common in the United States. Mexico faces constraints in breeding stock; mechanized equipment; know-how concerning what, where, and when to plant; distribution channels; and modern food processing capacity. And even though Mexico appears to have long-term, sustainable advantages for some kinds of fruits and vegetables, the United States has an overwhelming productivity edge in the staple crops of wheat and corn.

For many reasons, then, trade between the two countries' agricultural sectors is more nearly complementary than competitive. For instance, Mexico imports breeding stock and bull semen, sending feeder cattle back to the United States for fattening on cheap U.S. grain. Mexico buys some beef in return. Since U.S. meatpackers have been driving down their labor costs by closing unionized plants and hiring immigrant workers, for most of them Mexico's still lower wage levels would probably not offset the added costs of transporting grain (or cattle) to feedlots or packing plants south of the border. But here, as in other agricultural sectors, impacts will be shaped by local conditions and transportation costs. Thus, there may be some relocation of cattle feeding and meatpacking from Texas to Mexico after a NAFTA, while the bulk of U.S. production, which takes place farther north, seems unlikely to move. (Because poultry consume less feed per pound of meat, poultry production and processing may prove more mobile.)

Beyond whatever direct job losses result in the United States, the further integration of beef and poultry production and processing-and growing, freezing, and canning of fruits and vegetables—will maintain downward pressure on the wages of U.S. agricultural and food processing workers. At the same time, the ultimate expansion of U.S. agribusiness into Mexico will be limited by that country's modest endowments of fertile land and available

Photo credit: Grant Heilman Photography

Boxing beef.

Table 1-6-Agriculture and Food Processing

United States	Mexico
Structure of industry and market	
Production highly sensitive to local conditions (climate, soil, water supplies). Most sectors and subsectors dominated by relatively large farms, ranches, feeders, and processors. Nonetheless a very large absolute number of small producers (e.g., "family farms") continue to account for substantial shares of output in many sectors. Consumer tastes (e.g., lower consumption of red meat) promise continuing demand shifts.	Many small farmers produce only for local or self-consumption. "Communal" *ejido* sector-in which peasant farmers have had t he right to use state-owned land--are now to be privatized. *Ejidos* account for nearly half of Mexican land, but the sector as a whole is inefficient and has been heavily subsidized. Larger farms in export sectors (e.g., winter vegetables) have developed relatively good distribution into U.S. markets.
Blue- and grey-collar labor force	
Low-wage, temporary field labor jobs often hard to fill. Much food processing has been deskilled, with downward pressure on wages.	Large surplus; most of those in the ejido sector, or working as day laborers, have little education and limited prospects for mobility.
Technical and managerial labor force	
Many experienced farmers, often generally receptive to new technologies but not necessarily to new business practices.	Severely constrained. Limited capacity to develop hybrid seeds, pesticides, herbicides, fertilizers, or cultivation practices tailored to Mexico's growing conditions, or to adapt technologies from elsewhere.
Labor relations	
Traditionally adversarial in processing (e.g., rneatpacking); farmworkers historically unorganized and exploited.	Much self-employment, casual labor in production, particularly in ejido sector; rural poverty even worse than urban poverty.
Availability y of materials, components, and other inputs to production	
The United States remains a world leader in livestock breeding, development of hybrid crops, agrochemicals, and mechanization. Biotechnology has become the newest source of competitive advantage. However, some current and common practices could prove unsustainable over the next several decades, and serious water supply problems in the West seem likely.	Mexico's modern agricultural sector must import seeds and breeding stock. The traditional sector is more nearly self-sufficient but low in productivity; few small farmers can afford modern agricultural machinery. Limited arable land and water supplies create fundamental restrictions on future production.
Infrastructure (transportation, communications, etc.)	
Advertising strategies frequently used to differentiate products.	Marketing and distribution sometimes still a bottleneck for export products; the added costs can offset Mexico's lower wages. Poor transportation is particularly serious for perishable crops. Little sign of successful marketing strategies based on product differentiation.
Government policies	
Heavily regulated, supported, subsidized, with the farm lobby remaining extraordinarily powerful. Indeed, agribusiness is more directly influenced by government policies than almost any other sector (subsidies, water rights, pesticide regulations, trade restrictions, extension and other technology measures). These very high levels of policy intervention could begin to change with a Uruguay Round GAIT agreement.	Policies ranging from price controls on food products to credit allocation for small farmers have served in part as a rural poverty program and a tool to keep people from leaving the land for the cities. Supports and subsidies, including irrigation projects and low-cost fertilizer sales, have been scaled back since the middle 1980s; declining subsidies have cut into the cost advantages of some export crops.
The future	
The impacts of a NAFTA will be localized by product and by region in this sector more than in any other. For example, Florida tomato growers—who have managed to meet Mexican competition for many years through a combination of greater productivity and "strategic" trade protection-might finally begin to lose out. At the same time, California tomato growers, who do not confront Mexican production as directly (because their growing season is later), might be affected little if at all. U.S. agriculture is highly efficient; a NAFTA would have more impact on the choice of crops to be grown in a given location than on absolute levels of production.	A NAFFA, coupled with ongoing domestic policy shifts, promises to lead to greater dislocations in Mexico than in the United States. Declines in subsidies and price supports, and the reform of the efido system, promise to drive even more of Mexico's rural population off the land and into the cities, where there is unlikely to be work for more than a few. Likely consequences include increasing emigration to the United States.

SOURCE: Office of Technology Assessment, 1992.

Table 1-7—Alternative Development Paths for the U.S. Economy

Low-wage, low-productivity growth	High-wage, high-productivity growth
Overall strategy	
. Low cost through scale economies, long production runs, use of contingent workers, outsourcing to low-wage subcontractors, and relocation to low-wage areas. • Sale of limited variety of standardized products and products based on price; product cycles remain fairly long.	. Low cost through economies of scope, use of skilled workers in combination with flexible technology, and cooperation among geographically concentrated vertical and horizontal networks of firms. • Sale of specialized goods and services with short life cycles in markets segmented by quality and attributes tailored to customer needs and tastes.
Organizational structure	
• Decentralized, but control over profit centers maintained centrally. • Significant specialization within management along functional lines, turf boundaries. • Symbolism of the company or plant as a team; hierarchy and top-down control in practice.	. Greater decentralization of authority. . Heavy use of cross-functional management teams, simultaneous product and process engineering. • Flatter hierarchies, authority pushed down in the organization.
Work organization and labor relations	
• Independent worker representation (unions, employee participation committees) weak or nonexistent. • Formal internal flexibility due to lack of work rules, unions; restricted flexibility in practice below team leader level. • Some commitment to employer goals among large-firm, core workers with job security. • External flexibility y through hiring/firing of part-time, temporary, contract, less senior workers. • Adversarial, autocratic relations predominate in suppliers, small firms, and among temporary, contract, or part-time workers in large firms.	. Independent worker representation at most workplaces. . Flexibility arrangements negotiated with workers and their representatives on the job. • Worker commitment generally high. . Segmentation of workers into secure and contingent groups limited through internal flexibility and multi-employer labor market intermediaries.
Human resource development and job ladders	
• Minimal training for low level workers, except informally on the job, with short (up to 3-6 months at plant start-up, usually much less) training sessions for team leaders and trusted workers. • Specialized training for grey-collar craft and technical workers. • Little advancement for most workers; some opportunities for team leaders; hiring for most technical positions based on outside credentials.	. Significant development of most employees through on-the-job learning, classroom training. . Increased pay and some upward mobility through experience and mastery of additional skills. . Qualified lower-level employees can take learning sabbaticals to acquire new knowledge, qualify for promotion or switch in occupation.

(Continued on next page)

water. Continued improvements in U.S. agricultural technology, many of them the results of biotechnology, will transfer relatively slowly to Mexico because so many agricultural technologies (e.g., hybrid seeds) must be customized for local growing conditions.

THE UNITED STATES, MEXICO, AND NORTH AMERICA: TWO SCENARIOS

The spectrum of possibilities for future development in the United States, Mexico, and North America can be summarized by describing two alternative futures for each country and for North America as a whole. One alternative would bring back the sustained prosperity of the 1940 to 1970 period. The other would lead to continued decline in the United States, insufficient growth for Mexico to support its rapidly expanding population, and the social and political tensions associated with economic stagnation.

The United States faces a choice between a low-wage, low-productivity path and a human resource intensive, high-productivity path (table 1-7). In the "low-wage" alternative, U.S. firms would use computer technology and limited work reorganization to somewhat expand their product offerings and rate of innovation, but would remain committed to ''scientillc management" and the routinized production of a limited variety of stand-

Table 1-7—Alternative Development Paths for the U.S. Economy-(Continued)

Low-wage, low-productivity growth	High-wage, high-productivity growth
Wage setting	
• Wages for entry-level employees, technical workers, and upper managers set by the market. • Other wages set at plant or company level by employer. . "Efficiency wage" premia (10-20 percent) for core workers in big firms; some discretionary profit-sharing and merit-based pay.	• Wages for small pool of contingent, secondary workers set by the market. • Most wages set within broad ranges by minimum wage, multi-employer industry-wide or local occupation-specific agreements. • Some flexibility in wages based on negotiated and verifiable criteria-e, g., gain sharing, acquisition of skills.
Interfirm relations	
. Some cooperation between core firms and their suppliers on quality and engineering issues. Greater cooperation impeded by hard bargaining over contract terms, adversarial labor relations within suppliers. • Atomistic competition and little cooperation among small firms on training, technology diffusion, marketing.	• More stable, longer-term links with networked suppliers. In some cases, firm boundaries blur due to extensive cooperation and movement of personnel. • Small firms cluster in industrial districts characterized by cooperation on technology, training, and marketing.
Industrial and labor market policy	
• *Laissez-faire* approach to industrial development punctuated by *ad hoc,* politically motivated protection and subsidies. • Passive (primarily UI) labor market adjustment policies to the extent that budgets permit. • Development of training infrastructure left to the private-sector. • No change in U.S. laws governing union formation, collective representation.	• Federal and regional agencies seed cooperation among linked firms in industrial networks and districts. • Active (i.e., training, job matching) policies to enhance labor market flexibility. • Government catatyzes private-sector cooperation on training, job matching. • Labor law supports creation of worker voice institutions in small as well as large firms and in the service sector.

SOURCE: Office of Technology Assessment, 1992.

ardized goods. As in the past, most workers at the bottom of organizational hierarchies would have jobs that required limited skills. Knowledge and control of production would be embodied in machines and computer programs and monopolized by managers. Subcontracting would increase as part of efforts to find lower wage, more contingent labor.

Under the alternative, high-productivity direction, U.S. firms would employ computer-based technologies and new forms of work organization to design, develop, and produce varied, high-quality and continuously improving goods and services. Employers would foster the innovative capacity and flexibility necessary to compete in this way by training workers and restructuring internally to promote cooperation among workers and managers. Flexible automation would be used to complement and enhance workers' knowledge and skills, not to displace them. Small firm and suppliers would compete by capitalizing on the inherent flexibility of small organizations rather than by paying low wages.

OTA's analysis indicates that Mexico, like the United States, stands at a juncture between two futures. The frost alternative would represent a sharp break from Mexican traditions of state guidance of the economy; it would continue and extend 1980s' policies of maintaining low wages and eliminating regulations on investment by foreign multinationals. The second alternative would also be market-oriented compared with the past but would draw more than the frost on Mexico's tradition of state-led development and commitment to social justice. The end results would include more even development among regions and across rural and urban areas.

In its development policy under the second scenario, Mexico would look more like many of Asia's developing economies. Rather than trade and industrial policies driven by politics and rent-seeking, Mexico would shift to guided targeting through direct state support, efforts by Mexican firms to collectively improve their technologies, organizational practices, and worker skills, and, to the extent permitted by GATT and NAFTA discipline, strategic protectionism. In the human resource area, too, Mexico would come to resemble countries like Korea, increasing its overall investments, and redirecting them towards a combination of basic education for all, plus technical training for technicians, managers, and engineers. For labor policy, the

developmentalist scenario would bring renegotiation of Mexico's social pact so that unions would gain more independence. This is likely to be necessary to inhibit reliance on low-wage strategies, particularly in smaller fins, and to counter autocratic traditions that, unchecked, would probably result in adversarial rather than participative workplace relations.

The greatest danger of NAFTA is that it could bring out the worst in each country. Trade and investment liberalization could reinforce commitment to low-wage business strategies among U. S., Canadian, and Mexican fins; destabilize the attempt to foster less adversarial relations between labor and management; weaken the commitment of U.S. corporations to train less educated U.S. workers; reduce incentives for small and medium-sized U.S. firms to construct and participate in cooperative networks aimed at fostering innovation and technology diffusion; and, in the wake of rising corn imports, reform of the small-scale *ejido* farming sector, and slow wage growth in Mexico, increase the tide of unskilled emigrants from Mexico to the United States. The combined effect would be to encourage growing numbers of U.S. firms to pursue business strategies depending on or compatible with production in Mexico (box l-C).

Alternatively, the NAFTA debate could lead to a shared commitment to high productivity development in which each country's move in this direction makes it easier for the partner to move in parallel. Broad-based development in Mexico should bring both larger wage increases and more rapid exchange rate appreciation. More rapid and diversified development would reduce emigration to the United States and lead to more rapid expansion of U.S. exports. By contrast, less integrated development and a continuation or worsening of labor surpluses due to *ejido* reform and bankruptcies among smaller Mexican firms would mean slow exchange rate appreciation and a continuation of low wages even in world-class Mexican plants.

The choice of development paths is a stark one. It will have consequences not only for productivity and wages but for social and political stability. In the United States, a low-wage path would widen the gap between workers' aspirations and the jobs available to them. It would likewise widen the gap between rich and poor. Both countries must recognize the stakes before their choices lock them into the wrong path.

Box l-C—Mass Production, Flexible Production, and Sweatshops in the Garment Industry

The El Paso garment industry provides an example of the dangers for the United States of remaining committed to standardized, high-volume manufacturing in an age when Mexico and other low-wage countries can approach U.S. productivity and quality levels in this kind of production. A center for men's work clothes since the 1920s, El Paso's garment industry expanded rapidly in the 1960s and 1970s due to investment by national mass producers of jeans and men's pants, including Levi Strauss, Farah, Billy the Kid, and Blue Bell. Employment rose from around 3,000 in the 1950s to over 15,000 by the early 1970s. The large plants that employed most El Paso garment workers provided good working conditions, benefits, and paid significantly above the minimum wage. Starting in the 1970s, El Paso began facing increased competition from low-wage countries, including Mexico. Farah, which once employed 8,000 workers in El Paso, shifted most of its sewing to Mexico and Costa Rica. Its El Paso workforce fell below 1,000. Billy the Kid, which once employed 2,000 workers, closed down its El Paso operations. Most of El Paso's losses have been high-volume, low-end jeans and work clothes produced with lead times of as long as a year.

As large plants moved over the border or around the globe, El Paso stemmed its overall loss in apparel employment by expanding production in low-wage 'sweatshops. The growth of this segment is reflected in early 1990s employment statistics: large plants, anchored by Levi's seven facilities and over 3,000 employees, account for 60 percent of employment but less than 15 percent of El Paso's garment plants; the remaining 90 establishments, mostly subcontractors, account for 40 percent of employment. Average establishment size is now half what it was in the 1970s. In 1990, in a surprise sweep of 39 small shops by the U.S. Department of Labor, 20 were found to owe workers a total of $85,000 in back wages. Other shops employed underage workers and failed to meet basic health and safety standards. Some immigrant women workers have been willing to tolerate sub-minimum wages, poor working conditions, and sexual harassment because they need employer verification letters to qualify for legal residence in the United States.

(Continued on next page)

Box l-C—Mass Production, Flexible Production, and Sweatshops in the Garment Industry-(Continued)

As high-volume production moved to developing countries, and to stem the expansion of small, low-wage **sweatshops, a local organization** of working women, in cooperation with the El Paso business community and local government, has been searching for a third, more economically and socially viable competitive strategy. Worker representatives argue that this industry should not all go to low-wage countries. In their view, restructuring towards flexible production for fashion-oriented markets makes more sense than trying to find jobs for 15,000 less educated workers, many with limited English skills, in other sectors. Their strategy for competing in less price-sensitive markets includes stricter enforcement of fair labor standards to preclude attempts to compete with developing countries based on wages, and cooperative, government-catalyzed efforts by local industry to provide human resource development, technical assistance, credit, and marketing research for small employers. To coordinate this strategy, a 15-member, business-government-labor Fashion Industry Development Commission has been established, along with a pilot Subcontractor Incubator Project intended to demonstrate that subcontractors can operate competitively without resorting to sweatshop conditions.

That it is possible for a high-wage country to retain a presence even in this, the most labor-intensive of all industries, is suggested by the fact that wages and apparel exports in industrialized countries are positively correlated Higher wage Italian, German, and Japanese garment industries are able to compete by targeting high-quality segments with rapidly changing fashions. El Paso itself has retained some jeans and trouser production in large plants that cater to increasingly fashion-oriented and fragmenting mass production markets (e.g., Levi's Dockers line). The general lesson of the El Paso garment situation is clear. Unless the United States masters more flexible, skill-intensive ways to compete, it will lose out to developing countries in low-end markets and to Europe and Japan in high-end markets. Workers, like those in El Paso who have lost their jobs, will pay the highest price.