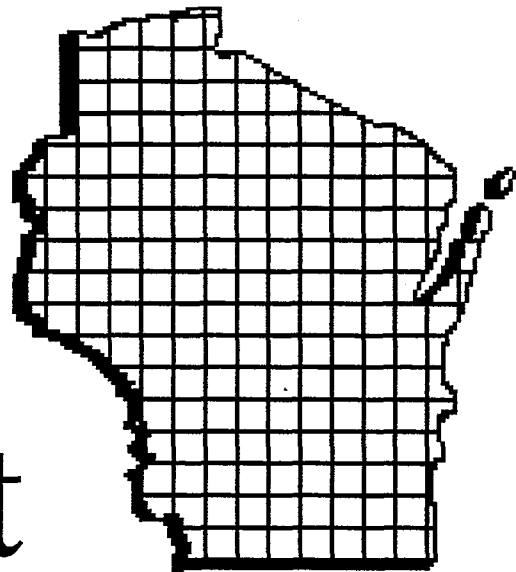


Wisconsin

Policy
Research
Institute
Report



October 1994

Volume 7, Number 7

**THE IMPACT OF
THE NORTH
AMERICAN FREE
TRADE AGREEMENT
ON WISCONSIN
INDUSTRIES**

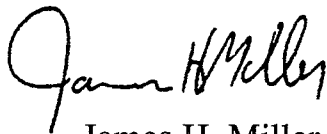
REPORT FROM THE PRESIDENT:

Few recent issues have stirred more controversy than the North American Free Trade Agreement (NAFTA).

We asked Dr. Richard Cebula, a Professor of Economics at Georgia Tech, to analyze NAFTA's impact on Wisconsin. Working with a computerized mathematical model, Professor Cebula examined 24 major industries and concluded that the state would have a positive gain in job creation.

Over the next five years, NAFTA would create 3,300 jobs in Wisconsin. Over 15 years, 7,400 new jobs would be created in the state. These estimates are on the conservative side. A major push to develop the Mexican market would create more jobs than Cebula's estimates.

In his analysis, only one of our major industries would suffer a job loss because of the treaty. Clearly, NAFTA will make a positive contribution to our employment picture. And it will, of course, make an enormous contribution to the families of those who fill these newly created jobs.



James H. Miller

THE WISCONSIN POLICY RESEARCH INSTITUTE, INC.

3107 North Shepard Avenue
Milwaukee, WI 53211
(414) 963-0600

THE IMPACT OF THE NORTH AMERICAN FREE TRADE AGREEMENT ON WISCONSIN INDUSTRIES

RICHARD J. CEBULA

	Page
EXECUTIVE SUMMARY	1
I. INTRODUCTION	3
II. THE ELEMENTS OF WHAT NAFTA REALLY CONSISTS OF	3
III. THE IMPACT OF NAFTA ON WISCONSIN INDUSTRIES	6
<i>Methodology</i>	7
IV. OVERVIEW	18
REFERENCES	20

BOARD OF DIRECTORS

Sheldon Lubar, Chairman

Hal Kuehl

Robert Buchanan

Michael Grebe

Brenton Ruppel

Roger Hauck

Paul Schierl

Roger Fitzsimonds

Edward Zore

James Miller, President

EXECUTIVE SUMMARY

According to a new set of projections, many industries in the state of Wisconsin are likely to benefit significantly over time from the effects of the North American Free Trade Agreement (NAFTA). In the aggregate, over the next five years, as many as 3,300 jobs could be created in Wisconsin as a result of NAFTA. Over 15 years, as many as 7,400 jobs could be created in Wisconsin as a result of NAFTA. Naturally, these figures relate only to NAFTA. Should other factors adversely or favorably impact on industries in Wisconsin over these time frames, they would have to be factored in to determine the net *overall* changes in the number of jobs.

Within this framework, projections are provided for 24 major industries in the state of Wisconsin regarding the likely short-run (up to five years) and long-run (up to 15 years) effects of NAFTA.

The projections for each case are as follows, with the first number being the potential short-run jobs gain/loss and the second number being the potential longer-run jobs gain/loss:

	(Short run)	(Longer run)
Industrial Machinery and Equipment	+900	+1,350
General Industrial Machinery	+100	+400
Lumber and Wood Products	+200	+750
Iron and Steel Foundries	+50	+200
Metal Forgings and Stampings	+100	+300
Commercial Printing	+50	+200
Millwork, Plywood, and Structural Members	+100	+500
Rubber and Miscellaneous Plastics Products	+200	+500
Miscellaneous Plastics Products, n.e.c.	+175	+400
Fabricated Rubber Products, n.e.c.	+50	+100
Metalworking Machinery	+200	+450
Special Industrial Machinery	+150	+250
Miscellaneous Fabricated Metal Products	+200	+400
Fabricated Metal Products	+250	+500
Fabricated Structural Metal Products	+150	+350
Furniture and Fixtures	+250	+500
Household Furniture	+150	+300
Office Furniture	+75	+150
Electronic Components and Accessories	-300 to -500	-500 to -600
Dairy Products	0	negligible increase
Corn	0 to negligible increase	0.5 percent increase
Cattle and Hogs	0	up to a 1.0 percent increase
Paper and Allied Products	+500 to +650	+600 to +900

The projections provided in this study are based largely on Census of Manufacturers data and additional data from the Bureau of Economic Analysis (1992), Burfisher, Thierfelder, and Hanson (1992), the U.S. Department of Commerce (1992), the Office of the U.S. Trade Representative (1993), and an empirical model principally synthesizing Cebula, et al. (1993) and Reinhart and Shiells (1992). The empirical model also draws to some limited degree on Anderson and Moroney (1994), Armington (1969), Crandall (1993), Davis and Haltiwanger (1992), DeMelo and Tarr (1992), and Truett, Truett, and Apostolakis (1994).

In any event, for these positive NAFTA projections to be experienced in Wisconsin, there are several requirements:

- (1) Mexico will have to improve its political, economic, and social conditions to ensure stability;
- (2) Wisconsin businesses will have to aggressively spend more time and effort learning the Mexican culture and cultivating relationships with Mexican businesses and the Mexican government;
- (3) the annual growth rate of Mexico's real gross domestic product (GDP) will have to average *at least* five percent; and,
- (4) the commitment to improve Mexico's infrastructure (especially highways and ports) must be maintained.

I. INTRODUCTION

The North American Free Trade Agreement, NAFTA, has evoked an enormous volume of controversy, especially in the United States. There are many people, some of whom have been portrayed as demagogues, who argue that NAFTA will result in a massive movement of jobs out of the U.S. and into Mexico, with perhaps as many as 5.9 million U.S. jobs being in jeopardy. One former presidential candidate, Ross Perot, has written a book that thusly characterizes NAFTA. There are former presidents of the U.S., including Presidents Ford, Carter, and Reagan, who have publicly supported NAFTA and extolled the net benefits that they expect NAFTA will produce for the U.S. economy.

Some analysts (including this author) argue that as a result of NAFTA, in the long run, perhaps 150,000-200,000 jobs, most of which are relatively lower-wage, lower-skill jobs, in the U.S. will be lost (principally to Mexico), but that a greater number of high-wage jobs will be created in the U.S.; furthermore, it is realistic that many of these "low-end" jobs would have been lost over the next ten to 15 years anyway — even without NAFTA — but to Asian economies rather than to Mexico, which has a far larger propensity than the Asian economies to buy from the U.S. Some analysts (including this author) argue that the fall of Mexican tariffs and non-tariff trade barriers will generate a major advantage to U.S. exporters, while others argue Mexicans earn too little to buy big-ticket items in the volume that will make a difference to the U.S. economy. Finally, some analysts (including this author) argue that the successful experience for the U.S. with NAFTA will facilitate the U.S. acceptance of the General Agreement on Tariffs and Trade (GATT).

This study of NAFTA seeks to make logical deductions and characterizations that will clarify what NAFTA really is, i.e., what it really consists of. In addition, and more importantly, this study seeks, to the extent possible, to clarify how NAFTA will most likely impact on major industries in the state of Wisconsin, over both the short run and the long run.

One feature of NAFTA that must be immediately clarified is that it does not really imply "free trade." Rather, NAFTA is a movement in the direction of free trade for its members. In reality, while many tariffs were eliminated immediately or are being eliminated very quickly under NAFTA, others will not disappear for as many as 15 years. Many non-tariff barriers to free trade would be phased out only slowly and in some cases tariffs and/or quota arrangements can even be reinstated under the NAFTA agreement. NAFTA *does* represent change, but much of it is more modest and gradual than the press reports may have led us to believe.

Part II of this study provides an overview of what NAFTA essentially consists of. Part III of this study examines the likely impacts of NAFTA for a number (24) of specific major industries in the state of Wisconsin. In this part of the study, it is shown, on the basis of very conservative estimates, that most major Wisconsin industries are likely to "win" under NAFTA in terms of production increases and new jobs created, whereas a few other industries are likely to "lose" (or not win) in terms of jobs and production. Finally, Part IV of this study consists of concluding overview observations, including the likely outcome that Wisconsin will — overall — clearly benefit under NAFTA.

II. THE ELEMENTS OF WHAT NAFTA REALLY CONSISTS OF

Before beginning this discussion, we emphasize that Mexico's relatively young work force of more than 27 million is characterized by a high literacy rate, an abundance of low-skilled labor, very low wages relative to the U.S. (despite a costly benefits package that makes the effective wage on the average 50 to 80 percent higher than it appears at first glance), and a relative scarcity of high-skilled labor and middle management.

A. Tariffs

Under the Canada Free Trade Agreement of 1989 (CFTA), it was already agreed that tariffs would be cut and trade barriers reduced between the U.S. and Canada. Under NAFTA, the status quo between the U.S. and Canada essentially will be maintained. However, with NAFTA, the U.S. and Mexico and Mexico and Canada have struck separate agreements. The U.S. and Mexico have agreed — in principle — to allow all tariffs on goods traded between the two countries to be eliminated within 15 years. Roughly 50 percent of all tariffs on domestic exports from the U.S. to Mexico were eliminated as of January 1, 1994. By 1999, tariffs will have been eliminated on 65 percent of all U.S. exports to Mexico.

Depending on the likely industry response to NAFTA, of each of the 9,000 goods covered in the U.S.-Mexico agreement, each good, for the most part, falls into one of four basic tariff-transition schemes:

- tariffs that were cut to zero immediately (as of January 1, 1994);
- tariffs phased out in equal cuts over five years;
- tariffs phased out in equal cuts over ten years; and,
- tariffs phased out in equal cuts over 15 years.

NAFTA allows for the possible acceleration of the above tariff-removal schedules to coincide with CFTA and also creates a special mechanism whereby Mexican and U.S. firms can request an accelerated schedule. NAFTA also includes tariff rate quotas (TRQs) on certain import-sensitive items, which are currently shielded from import competition by quotas. Products such as domestic (U.S.) textiles and apparel, sugar, peanuts, corn, and frozen concentrated orange juice would gradually lose their quota shield through sliding TRQs over 15 years.

B. Non-Tariff Barriers

NAFTA eliminates most quotas and administrative procedures that historically have slowed or limited trade between the U.S. and Mexico. Such barriers as licensing requirements and customs "user fees" on goods and services are eliminated under NAFTA. NAFTA also phases out the so-called "duty drawback," an export promotion scheme in which governments pay the duties on intermediate products that were imported only to become a component of some exported product.

More specifically, NAFTA will:

- Decrease administrative costs to U.S. businesses in exporting to Mexico. All customs user fees are to be phased out by June 30, 1999. The U.S. and Canada already have eliminated the user fees (as of January 1, 1994).
- Eliminate import licensing requirements in most cases. However, in some cases, the three nations are permitted to keep certain quotas and licenses in place. Due to import sensitivity considerations, Mexico is allowed to phase out licensing requirements slowly on certain equipment. Items such as concrete pumps, derricks, cranes and lifting equipment, bulldozers, digital automatic processing machines, tractors, and injection molding machines may retain import licenses for 10 years.

- Permit Mexico to preserve export taxes on certain supplies to maintain a secure domestic food supply. Items such as corn or corn products, wheat flour, soup paste, cookies, crackers, rice, oat flakes, ham, tuna, milk, eggs, vegetable oil, beans, sugar, coffee, salt, and beer will maintain their export tax.
- Permit certain industry sectors, such as 14-inch color television picture tubes, to have special rules. Only a limited number of tubes would be eligible for duty-drawback benefits.
- Permit domestic (U.S.) firms increased access to Mexican markets by eliminating investment requirements that previously have been tied to the duty-drawback benefits. For instance, Mexican auto "performance requirements," which have heretofore acted to limit the behavior of foreign firms, will no longer be in effect.

U.S. Business: The Implications of the Elimination/Phase-out of Tariff and Non-Tariff Barriers

By eliminating and phasing out tariff and non-tariff barriers to trade, particularly between the U.S. and Mexico, NAFTA will afford U.S. firms of all sizes cheaper and easier (quicker) access to Mexican markets. Transportation costs to Mexico will be lowered by eliminating administrative barriers and costs to moving goods across the U.S.-Mexico border. Naturally, this situation will make U.S. producers/suppliers more price-competitive with internal Mexican producers, as well as with non-NAFTA foreign competition. Lower tariffs under NAFTA will also increase opportunities for U.S. importers to seek new supplies from within Mexico. Of course, lowering the cost of production for some U.S. firms through less expensive imported supplies from Mexico will act to create some losses among previous U.S. suppliers. On the other hand, since nearly 13 percent of imports from Mexico already had entered the U.S. marketplace duty free prior to NAFTA, some sectors will not experience any increased competition from Mexican suppliers.

C. The Issue of Rules of Origin

NAFTA Rules of Origin were developed so as to prevent non-NAFTA nations from benefiting from the relaxation of trade barriers between the U.S. and Mexico. For instance, Rules of Origin should prevent Asian producers from shipping sophisticated components to Mexico for assembly and then shipping them to the U.S. duty free. Under the Rules of Origin, to qualify as NAFTA goods, products must contain a minimum percentage of North American-made components. These percentages vary according to the product, but they can be as high as 100 percent.

To illustrate the Rules of Origin, consider the following. For television sets to qualify as NAFTA goods, they must contain North American-made picture tubes, which are almost all manufactured in the U.S. In this case, U.S. manufacturers are poised to benefit from the Rules of Origin. Alternatively, in the automobile industry, the content rules specify that at least 62.5 percent of the auto must be made in NAFTA nations in order for the auto to qualify as a NAFTA good.

Implications for U.S. Businesses of Rules of Origin

Clearly, NAFTA Rules of Origin are intended to keep non-NAFTA goods from reaping the benefits of NAFTA-goods status. With proper enforcement, NAFTA Rules of Origin ensure that preferential NAFTA treatment is limited to firms producing goods in the NAFTA Region and act to protect and benefit firms operating in North America.

Since the NAFTA Rules of Origin are not so rigid as to prevent foreign-owned plants that use some foreign-(non-NAFTA-)made components from establishing themselves in Mexico, this may attract badly needed investment into Mexico and thereby further stimulate Mexican economic expansion. However, such investment would also mean new competition for U.S.-owned operations and labor (especially, low-skill and low-wage labor) across the NAFTA Region.

D. Employment Prospects

Most analyses of the likely effects of NAFTA on U.S. employment show that in the short run, some U.S. jobs will be lost under NAFTA — either through plant relocation or increased competition from imports (principally from Mexico). However, most such studies also indicate that over time, there will be net gains in U.S. employment under NAFTA. Large-scale losses of U.S. jobs to Mexico are effectively a mathematical impossibility under NAFTA, given that the Mexican economy is only about four percent the size of the U.S. economy. Indeed, imports from Mexico in 1993 constituted much less than one-half of one percent of the U.S. GDP and barely 3.4 percent of total U.S. imports!

When examining the likely pattern of short-term job losses, however, "net" is the operative word. For instance, several national-level studies predict some U.S. job losses in the farm, textile, and business sectors, but predict that these job losses will be offset by gains in the U.S. manufacturing (including automotive) and equipment sectors. Meanwhile, it is often predicted that due to the increased level of international trade under NAFTA, Mexico will gain well over a million jobs under NAFTA in a variety of industries, including agriculture, chemicals, electrical equipment, motor vehicles, and transportation. Meanwhile, a study by Hufbauer and Schoot (1992) has projected that in NAFTA's *first year*, 325,000 new jobs will be created in the U.S., but that 150,000 low-skill jobs will be lost to Mexico.

E. The Issue of Wage Rates

It would appear that under NAFTA, overall (on the average), U.S. wage rates would rise slightly or remain relatively unaffected by NAFTA. However, it is likely that Mexican wages will rise considerably (relatively speaking). It is noted that although Mexican wages appear to be much lower on average than in the U.S., this is deceptive. First, Mexican wage rates seem very low by U.S. standards, but this appearance is misleading because of a remarkably high fringe-benefit level that statutorily is mandated, i.e., "accompanies," the "low" Mexican wage rate. Second, adjusting for this factor, U.S. hourly wages in the vast majority of cases are typically about five times the size of their counterpart in Mexico. This is, of course, still a large ratio; however, in point of fact, that factor of five is roughly the average ratio of U.S. labor productivity per hour to Mexican labor productivity per hour!

It would appear that, overall, most U.S. job losses under NAFTA will be lower-paying, lower-skilled jobs, whereas most U.S. job gains will be at the high end — higher-skilled, higher-paying jobs. Overall, job losses in the U.S. will tend to be highest in the textile, apparel, sugar, footwear, glassware, and appliance (especially small) sectors. Countering these losses will be gains in the financial services, automobile manufacturing, industrial manufacturing, education (higher), telecommunications, and machine tool sectors, among many others.

III. THE IMPACT OF NAFTA ON WISCONSIN INDUSTRIES

Within the NAFTA framework outlined above, this study now is directed at describing the most likely impact of NAFTA on major industries in the state of Wisconsin. It should be

observed at the outset that the economic impact of NAFTA on industries in the state of Wisconsin can take the form of either (1) a direct impact from increased net exports to Mexico, and/or (2) an indirect impact from NAFTA through a shifting of trade (import-export) relationships within the United States, and/or (3) an indirect impact from NAFTA resulting from multiplier effects of increased exports from industries in other states to Mexico, multiplier effects that spill over into Wisconsin in the form of increased demand for Wisconsin output, and/or (4) an indirect impact from NAFTA resulting from a multiplier effect within Wisconsin between Wisconsin industries.

In the first case, (1), we are addressing simply the increased output/employment in Wisconsin industries resulting directly from increased direct net exports to Mexico. Because of NAFTA, the Mexican economy will continue to be a rapidly growing market for U.S. product for many years to come. Mexico's economic growth and rising prosperity can only translate into a growing market for U.S. goods. In addition, it should be stressed here that because of NAFTA, the U.S. (and Wisconsin) are very strategically poised to take unique advantage of the growing Mexican marketplace. In the absence of NAFTA, with its tariff components, non-tariff components, Rules of Origin dimensions, and other member benefits, this access to Mexican markets would be greatly curtailed and foreign (especially, non-NAFTA nations in Asia and Europe) competition would be able to significantly crowd U.S. producers/suppliers out of the Mexican market. In the second case, (2), we address the fact that when industries in other states export more to Mexico, there may be a redistribution of customers within the United States in favor of Wisconsin industries; as firms in other states increase exports to Mexico, some of their customers may then be served by Wisconsin industries rather than the firms in these other states. Admittedly, this impact is difficult to determine and, in any event, is likely to be modest, especially in the short run; nevertheless, it cannot be arbitrarily excluded from consideration. In the third case, (3), we are addressing the fact that as firms/industries in states other than Wisconsin expand as a result of increased exports to Mexico, there is a subsequent growth in domestic spending in the United States as a whole, some of which will find its way to Wisconsin industries. In the fourth case, (4), we are addressing the fact that as exports from Wisconsin industries grow under NAFTA, there is an increased subsequent growth in spending within Wisconsin that benefits Wisconsin industries per se.

In the discussions of specific Wisconsin industries that follow, the projections for each industry case are the *sum* of all four of these types of impacts. Furthermore, we note that the industries in Wisconsin that are analyzed below are identified according to their three-digit SIC codes.

The projections provided in this study are based largely on Census of Manufacturers data and additional data from the Bureau of Economic Analysis (1992), Burfisher, Thierfelder, and Hanson (1992), the U.S. Department of Commerce (1992), the Office of the U.S. Trade Representative (1993), and an empirical framework principally synthesizing Cebula, et al. (1993) and Reinhart and Shiells (1992). The empirical model also draws to some limited extent on Anderson and Moroney (1994), Armington (1969), Cebula (1979; 1983), Crandall (1993), Davis and Haltiwanger (1992), DeMelo and Tarr (1992), Richardson (1972), and Truett, Truett, and Apostolakis (1994). Within this framework, projections are provided for 24 major industries in the state of Wisconsin regarding the likely short-run (up to five years) and long-run (up to 15 years) effects of NAFTA.

Methodology

The methodology adopted to generate the projections is straightforward. First, based on models of each of the 24 industrial sectors or groupings studied here, projections of the net output and employment effects of NAFTA are made at the national level, i.e., for the U.S. as a whole, for each of these industrial sectors (groupings). These projections are based principally

on the models in Reinhart and Shiells (1992) and Cebula, et al. (1993). In those cases where comparisons were feasible, our projections for the specific industrial sectors that were studied here were cross-checked for potential gross errors with those made earlier by the U.S. Department of Commerce (1993). No evidence whatsoever of gross projection errors was found.

Once generated, these national-level projections of net output and employment effects under NAFTA must then be allocated to the state level for Wisconsin. Wisconsin is hardly an "average" state. For one thing, it lies a substantial distance from its NAFTA trading partner to the south (Mexico); this distance factor can create a variety of communications and transit challenges for Wisconsin businesses. Wisconsin has a very diversified industrial base, with reasonably competitive wages in most of the industrial sectors examined. Nevertheless, the task of converting national projections to the state of Wisconsin, while tedious, was straightforward.

In particular, the procedure is as follows. First, for any given industrial sector, "j," the national percent net changes in output ("Qj") and in employment ("Ej") as a result of NAFTA (in most cases, principally through increased trade between the U.S. and Mexico) are projected. To convert this information into a figure relevant to Wisconsin, we next compute the ratio of the value of Wisconsin's exports to Mexico in industrial sector j during 1992 to Wisconsin's gross state product (GSP) in 1992. This number is referred to here as "Wisconsin's propensity to export to Mexico in industrial sector j," or simply "WPEMj." We next compute the "U.S. propensity to export to Mexico in industrial sector j," or simply "USPEMj." USPEMj is the ratio of the value of U.S. exports to Mexico in industrial sector j during 1992 to the U.S. GDP in 1992.

We next divide WPEMj by USPEMj. The ratio of WPEMj to USPEMj is represented by Rj, which can be either greater than one or less than one (or equal to one), which indicates, respectively, whether Wisconsin tends to export to Mexico in industrial sector j relatively more or less (or to the same degree) as the U.S. as a whole. The reader may be interested to know that, although there are a few exceptions, in most cases, $R_j < 1$. To obtain the projected net percent output or employment effects of NAFTA in industrial sector j in Wisconsin, we simply multiply Rj times Qj or Ej, respectively.

- A. **Industrial Machinery and Equipment**
- B. **General Industrial Machinery**

The U.S. supplies nearly 70 percent of Mexico's imports of farm, construction, and mining machinery, and air-conditioning and refrigeration equipment, as well as packaging machinery, bearings, pumps, and other such items. U.S. exports of these same types of items is expected to rise noticeably under NAFTA. Indeed, as a result of Mexico's decision to improve its highways and expand its ports, U.S. producers/suppliers of construction machinery have already benefited. And this process of highway upgrading and port expansion is continuing. In addition, demand from Mexico for U.S. product will be rising substantially from the Mexican expansion of its wastewater-treatment sector. Moreover, Mexican farms are becoming larger and more mechanized, whereas there is (will be) also a growing demand in Mexico for refrigerated foods as the Mexican economy continues its expansion and Mexican living standards improve.

Nationally speaking, U.S. exports of industrial machinery and equipment to Mexico are likely to increase under NAFTA in both the short term (up to five years) and in the longer run (up to 15 years). This growth is traceable to (1) the expanding Mexican economy (which is significantly the result of NAFTA), (2) the rising Mexican living standard, (3) decisions such as those described above to improve Mexico's infrastructure (including the environment as well as ports and highways), and, of course, (4) the benefits impounded in the tariff and non-tariff (including Rules of Origin) provisions of the NAFTA agreement itself. The short-term growth in these two sectors of the U.S. economy is bolstered by the fact that Mexico lacks the infrastructure to attract the necessary investment to efficiently produce the industrial machinery

and equipment it needs. Over the longer run, while these sectors will continue to grow in the U.S. as a result of NAFTA, there will be a somewhat slower growth pattern because the Mexican economy cannot continue growing at an accelerated rate and also because Mexico may attract investment sufficient to viably supply some of its own growing needs in these industrial sectors.

At its inception, NAFTA eliminated Mexican tariffs on 54 percent of U.S. exports of industrial machinery and equipment. In addition, 19.1 percent of tariffs on U.S. exports to Mexico of general industrial machinery were eliminated at the outset with NAFTA. The remainder of such tariffs in both cases (industrial machinery and equipment and general industrial machinery) are eliminated (phased out) in ten years or less. NAFTA also has provided U.S. producers/suppliers access and increasing access to Mexican government procurement markets. Furthermore, NAFTA Rules of Origin provide protection for U.S. producers/suppliers in these two related industry sectors.

In Wisconsin, there are roughly 89,600 people employed in the industrial machinery and equipment sector, with 58,300 of them involved in the actual production process itself. Average hourly production wages border on \$13.70. Employment in this sector in Wisconsin could expand as a result of NAFTA by as much as 900 by 1999. This employment increase in Wisconsin in this sector as a result of NAFTA could rise to as much as 1,350 over the subsequent ten years. These increases are not enough to bring great upward pressure on wages, although some upward wage pressure is to be expected. Therefore, the NAFTA outlook for this sector is generally quite positive.

In Wisconsin, there are some 10,900 people employed in the general industrial machinery sector, with some 6,900 of them involved in actual production. The latter have an average hourly wage of about \$13.73. Under the direct and indirect effects of NAFTA, in the short run (up to five years), there will be roughly 100 new jobs in this sector in Wisconsin. Over the following ten years, NAFTA will likely have created as many as 400 new jobs in this sector in Wisconsin.

C. Lumber and Wood Products

The U.S. is a major producer, consumer, and exporter of lumber and wood products. The U.S. supplies the majority of Canada's imports of these products and supplies between 40 and 50 percent of Mexico's total consumption of these products. In the latter case, U.S. exports of these products to Mexico grew by some 42 percent over the 1990-1991 period. In point of fact, NAFTA will not significantly affect U.S.-Canada lumber and wood products trade, since under the CFTA, the major trade items in this industrial sector were already duty-free. On the other hand, NAFTA phases out Mexico's tariff and non-tariff barriers on imports from the U.S. of all lumber and wood products.

The U.S. and Wisconsin both enjoy a major comparative advantage over Mexico in this sector. Mexico has very limited forest land and is a significant net importer in this industrial sector. As Mexico's protectionism of its domestic producers is phased out over the next ten years, imports from the U.S. in general and Wisconsin in particular will rise substantially. This direct NAFTA effect will be strengthened by Mexican economic growth and the rapidly rising demand for new housing in Mexico.

Under NAFTA, 14.7 percent of all Mexican tariffs on U.S. exports in this sector were eliminated immediately. Over the next five years, 3.9 percent more of these Mexican tariffs are scheduled to be eliminated. The remaining 81.4 percent of such tariffs are to be phased out over the subsequent five years. Under NAFTA, U.S. producers/suppliers were provided access and are provided increasing access to Mexican government procurement markets. The Rules of Origin under NAFTA also benefit U.S. producers/suppliers in this sector.

In Wisconsin, this industrial sector employs roughly 23,400 people, 18,600 of whom are involved in physical production per se. Hourly wages among production workers, on the average, run about \$9.25. The growth in demand from Mexico under the various direct and indirect effects of NAFTA will lead to a small short-term increase in demand for Wisconsin output, perhaps two percent over the next two to three years. However, over the longer term, up to 15 years, a major increase in demand from Mexico for Wisconsin output in this sector is likely, perhaps on the order of 18 percent. Over the short run, i.e., within three years, this will translate into as many as 250 new jobs in Wisconsin in this sector; in the longer run, i.e., up to 15 years, this could easily translate into as many as 750 new jobs in Wisconsin in this sector.

D. Iron and Steel Foundries

Overall, NAFTA is expected to have a favorable net impact on this sector in the U.S. This favorable net impact is traceable to several factors. First, there are NAFTA-created tariff reductions on imports from the U.S., with all Mexican tariffs in this sector completely eliminated within ten years. Second, under NAFTA, government-procurement markets in Mexico are opened up to U.S. firms. Third, there are increasing pressures for infrastructure improvement in Mexico. Fourth, the Mexican economic expansion (so much of it the result of NAFTA) will elevate demand as well for this sector. Fifth, NAFTA Rules of Origin will act to protect U.S. producers/suppliers in this sector. Mexico's own infrastructure in this sector is limited, but not inconsequential; therefore, Mexico's own industrial structure (perhaps 1/9th to 1/10th the size of that in the U.S.) will also be able to benefit somewhat from factors three and four.

In Wisconsin, there are some 12,200 people employed within the iron and steel foundries sector, some 9,700 of whom are employed in actual production. The average wage among the latter is approximately \$12.38 per hour. The expected growth in demand for Wisconsin production in this sector, especially given transit-cost considerations, will be modest. Expected employment growth in Wisconsin in this industrial sector as a result of NAFTA-related effects will be on the order of 50 over the next three years; new jobs in Wisconsin in this sector could number as many as 200 over the next ten to 15 years.

E. Metal Forgings and Stampings

Nationally, this industrial sector accounted for well over \$400 million in exports to Mexico in 1991. NAFTA has already (immediately) eliminated tariffs on over 50 percent of all U.S. exports to Mexico in this sector. Under NAFTA, over the next ten years, all Mexican tariffs and non-tariff barriers will be eliminated in this sector.

This tariff-elimination process should provide a substantial price advantage to U.S. producers relative to our non-NAFTA competitors. Adding to the benefits of tariff reduction is an increased (and increasing) access to the Mexican government-procurement market. The NAFTA Rules of Origin should protect U.S. firms from foreign competition, especially from Japan, which has been an increasingly aggressive adversary in this industrial sector over the last five years.

In Wisconsin, this sector employs 12,200 people, some 9,400 of whom are engaged in actual production. The hourly wage for the latter is on the order of \$12.03. Increased demand for product in this sector as a result of direct and indirect NAFTA effects should result in a rise in Wisconsin employment of 100 people over the next three to five years and a long term (within ten to 15 years) net rise in Wisconsin employment in this industrial sector on the order of 300 people.

F. Commercial Printing

NAFTA has already eliminated tariffs ranging from ten to 20 percent on nearly 2/3 of all U.S. exports to Mexico in this sector. Additional tariff phase-outs are to occur over the next five years, whereas the remaining tariffs are scheduled to be phased out in the ensuing eight to ten years. NAFTA also ensures that U.S. producers in this sector will have increased access to the Mexican (as well as Canadian) government-procurement markets. Once again, NAFTA Rules of Origin offer protection to U.S. exporters in this sector. Finally, under NAFTA, to facilitate trade flows, the U.S. and Mexico (as well as Canada) have agreed to a number of uniform customs procedures and regulations.

In Wisconsin, commercial printing employs about 23,100 people, 17,700 of whom are involved in actual production. The hourly wage of the latter averages about \$11.03. This industry faces widespread competition outside of Wisconsin from within the U.S., and Wisconsin exports to Mexico (as well as Canada) are very limited. Given Wisconsin's limited proximity to the Mexican market, but its close proximity to the Canadian market, the possibilities of demand growth in this sector in the state are relatively modest. At the outside, employment growth in this sector in Wisconsin as a result of the direct and indirect impacts of NAFTA will be on the order of 50 people over the next five years. Over the subsequent five years, new jobs in this sector in Wisconsin could rise by as many as 200.

G. Millwork, Plywood, and Structural Members

These products constitute a major component of a large industry in the U.S. At its inception, NAFTA immediately eliminated 14.7 percent of Mexico's tariffs on U.S. exports in this sector. Over the ensuing five years, an additional 3.9 percent of such tariffs are scheduled to be eliminated, with the remaining 81.4 percent being eliminated over ten years. In addition, all three NAFTA nations eliminated non-tariff barriers such as quotas and import licenses. NAFTA also provides for immediate and growing access to the Mexican (and Canadian) government-procurement markets. Taken together, these considerations, along with Mexican economic growth under NAFTA, generate a growing demand for the output of this U.S. industrial sector.

In Wisconsin, there are 11,900 persons employed in this industry sector, with 9,400 of them involved in actual production. Hourly wage rates among the latter are moderate, approximately \$9.45; this figure is comparable to that in lumber and wood products. The growth in demand from Mexico for U.S. exports as a result of the various direct and indirect impacts of NAFTA will generate a modest increase in demand for Wisconsin output in this sector over the next two to three years, perhaps two percent. Over the next 15 years, there could be a rise in such demand of as much as nine percent. This will likely translate into growth in this sector in Wisconsin of 100 new jobs over the next two to three years as a result of NAFTA; over the next 15 years, as many as 500 new jobs in this sector in Wisconsin are likely under NAFTA effects. Such effects are enough to create limited new employment opportunities but too small to create significant upward wage pressures within this sector in the state.

H. Rubber and Miscellaneous Plastics Products

I. Miscellaneous Plastics Products, n.e.c.

J. Fabricated Rubber Products, n.e.c.

In 1993, the U.S. exports to Canada and Mexico in these three industrial sectors combined totaled \$2.9 billion, with a positive trade balance for the U.S. in these three sectors combined of approximately \$1.9 billion. Canada and Mexico comprise essentially half of the world market for U.S. exports in these three U.S. sectors. Moreover, this market is growing rapidly under Mexican economic expansion. NAFTA removes, over time, numerous tariff and non-tariff barriers to our exports to Mexico in these sectors. Prior to NAFTA, 27.3 percent of

our exports to Mexico in these three sectors were already duty-free. At NAFTA's inception, an additional 30.8 percent of such U.S. exports to Mexico became immediately duty-free. Over the next five years, 8.6 percent more of these products are to become duty-free. Over the following five years, the remaining 33.3 percent will become duty-free. In addition, under NAFTA, U.S. producers/suppliers gain immediate and increasing access to Mexican government-procurement markets. Furthermore, NAFTA Rules of Origin will offer limited protection to U.S. producers/suppliers in these three sectors.

The rubber and miscellaneous plastics products industry as such in Wisconsin employs 24,700 people, with 19,400 employed in actual production. Average hourly wages among the latter are roughly \$10.02. The growth in this sector for Wisconsin over the short run and longer run will be modest. New jobs in Wisconsin in this sector, as a result of the direct and indirect effects of NAFTA, should be on the order of 200 over the next three to five years; over the next ten years, the total number of new jobs in this sector in Wisconsin could rise as many as 500.

The miscellaneous plastics products, n.e.c., sector in Wisconsin employs 18,800 people, 15,000 of whom are involved in actual production. Average hourly wages among the latter are in the range of \$9.94. Over the next three to five years, new jobs in this industrial sector in Wisconsin as a result of the various direct and indirect economic effects of NAFTA should number about 175; over the next ten-year period, that number could rise to as much as 400.

The fabricated rubber products, n.e.c., sector in Wisconsin employs 2,400 people, 1,600 of them being involved in actual production. Average hourly earnings among the latter are on the order of \$9.81. Over the next five years, new jobs in this sector in Wisconsin resulting from NAFTA should number about 50; over the next five to ten years, the number of new jobs in this sector in Wisconsin should rise by 100.

K. Metalworking Machinery

In 1992, the metalworking machinery industry in the U.S. as a whole employed over a quarter of a million people. Exports in this sector to Mexico have grown rapidly in recent years. From 1990-1992, for example, U.S. exports to Mexico in this sector grew by nearly 70 percent; this contrasts to a sales growth rate of exports in this sector to the rest of the world of only 14 percent. Hence, Mexico has been a very rapidly growing market for the U.S. metalworking machinery sector. It appears that this growth trend for Mexico as a market for this U.S. industrial sector will be augmented under NAFTA. On the other hand, although the U.S. is the number-one source of Mexican machine tool imports, Japanese producers have been making increasing inroads into this industrial market.

At the inception of NAFTA, 50.1 percent of all Mexican import duties for this U.S. sector were eliminated. Within the next five years, an additional 31 percent of tariffs are to be eliminated; the remaining tariffs are phased out in the next five-year period. In addition, NAFTA gives U.S. producers/suppliers of metalworking machinery and equipment immediate and increasing access to Mexican government-procurement markets. NAFTA Rules of Origin also act to protect U.S. suppliers in this sector.

In Wisconsin, there are 15,000 people employed in the metalworking machinery sector, with 9,900 of them involved in actual production. The average hourly wage rate for the latter is roughly \$13.24. Under NAFTA, there are three factors that are beneficial for Wisconsin producers/suppliers: tariff elimination/phaseout, increased access to Mexican government-procurement markets, and Rules of Origin protection. In addition, the growing Mexican economy, especially under the NAFTA impetus, will also act to raise the Mexican demand for this sector's output. The growth in Mexican demand for metalworking machinery and equipment produced in Wisconsin (and the U.S.) will rise substantially as a result of these factors. The

number of new jobs created in Wisconsin in this sector over the next three to five years as a result of NAFTA-related impacts will be on the order of 200; over the next seven to eight years, the number of new jobs created in Wisconsin in this sector from the various NAFTA impacts could number as many as 450.

L. Special Industrial Machinery

U.S. exports of special industrial machinery to Mexico grew by nearly 20 percent over the period from 1990 to 1992. This contrasts to a growth rate of exports from the U.S. in this sector to the rest of the world of merely two percent over the same period. Mexico, therefore, is clearly a major market prospect for this industrial sector. In this sector, there are several sub-sectors, including "food products machinery." In the latter case, Wisconsin, along with three other states, produces 91 percent of the food industry's needs in the U.S.

Under NAFTA, there was an immediate tariff elimination affecting 70.9 percent of U.S. exports to Mexico in the specialized industrial machinery sector. Another 27.1 percent are phased out over the next five years. The remaining two percent are phased out in the subsequent five years. As with so many other sectors, NAFTA has provided immediate and increasing access to Mexican government procurement markets. Furthermore, NAFTA Rules of Origin offer this U.S. sector useful protection against competitor European nations such as Germany, France, Spain, and Switzerland.

In Wisconsin, there are 11,400 people employed in this sector, with some 6,500 of them involved in actual production. Average hourly wages among the latter run at approximately \$13.36. NAFTA provisions make Wisconsin (and U.S.) exports especially appealing and competitive in this sector and especially well poised to tap into a rapidly growing Mexican demand, the latter of course being significantly fueled by NAFTA itself. In the short run, i.e., over the next three years, new jobs in this sector in Wisconsin as a result of NAFTA-related impacts could grow as much as 150. Over the next ten years, new jobs in Wisconsin in this sector could number as high as 250 as a result of NAFTA-related impacts.

M. Miscellaneous Fabricated Metal Products

N. Fabricated Metal Products

O. Fabricated Structural Metal Products

Total U.S. exports to NAFTA trade partners Mexico and Canada in these three sectors combined generate a multibillion dollar business annually. Exports to Mexico have been growing especially rapidly; for example, they grew between 1990 and 1993 by some 34 percent. In terms of Mexico, NAFTA at its inception eliminated 6.2 percent of tariffs in these sectors. Over the next five years, an additional 23.3 percent of such tariffs are to be eliminated. The remaining 70.5 percent of the Mexican tariffs on U.S. exports in these sectors are phased out over the following five years. NAFTA immediately provided increased and increasing access to Mexican government-procurement markets for U.S. producers/suppliers. In addition, protection is also afforded U.S. producers/suppliers under the NAFTA Rules of Origin.

In Wisconsin, in the miscellaneous fabricated metal products sector, there are 9,900 people employed, with 6,900 of them involved in actual production. Hourly wages among the latter average approximately \$11.03. Over the next three to five years, within the context of NAFTA, the robust Mexican expansion will raise the demand for this sector's output significantly. Infrastructure needs and commercial and industrial construction in Mexico will be most beneficial to Wisconsin producers (and U.S. producers in general). Over the next three to five years, the direct and indirect effects of NAFTA should lead to as many as 200 new jobs in this sector in Wisconsin; that number should reach as high as 400 over the following ten years.

In Wisconsin, in the fabricated metal products sector, there are 54,000 people employed, with 40,200 of these being involved in actual production. Average hourly wages among the latter are in the range of \$11.37. For basically the same reasons as outlined in the previous paragraph, there will also be benefits to Wisconsin producers/suppliers in this sector. In Wisconsin, in this sector NAFTA will likely generate as many as 250 new jobs in the next five years and up to 500 new jobs within ten years.

In Wisconsin, in the fabricated structural metal products sector, there are 14,100 people employed, with some 9,900 of these involved in actual production. Average hourly wages among these production workers is roughly \$10.74. The NAFTA effects in this sector are essentially explained two paragraphs earlier. Under NAFTA, within the context of the growing Mexican economy, new jobs in this sector in Wisconsin will number as many as 150 over the next five years; the number of new jobs in Wisconsin in this specific sector should reach as high as 350 over the following ten years.

- P. Furniture and Fixtures**
- Q. Household Furniture**
- R. Office Furniture**

Canada and Mexico are the two most important markets for U.S. exports of furniture and fixtures, household furniture, and office furniture. U.S. exports in these sectors to Mexico alone were running in excess of \$350 million in 1993. Despite Canada's large furniture and fixture exports, the U.S. still enjoys a large trade surplus in these industry sectors. NAFTA removes numerous impedimenta that have in the past slowed U.S. exports of furniture and fixtures, household furniture, and office furniture. Upon its inception, NAFTA immediately eliminated Mexican tariffs on 18 percent of U.S. exports of furniture and fixtures, household furniture, and office furniture. Over the next five years, another eight percent of these tariffs are to be phased out. Mexico's tariffs relative to these sectors are then to be phased out on another 24 percent for the following five years. Mexican tariffs on the other 50 percent of product in these sectors are phased out in stages by January 1, 2003. The Mexican government is an important buyer of office furniture. This fact is important because NAFTA provisions allow access and increasing access to the important Mexican government-procurement market. The Canadian government-procurement market is also similarly opened up for U.S. suppliers/producers. Moreover, Rules of Origin under NAFTA also offer U.S. producers/suppliers protection against non-NAFTA members.

In Wisconsin, the furniture and fixtures sector employs 13,100 people, with 9,800 of them employed in actual production. Average hourly wages among the latter are approximately \$8.36. Under the direct and indirect effects of NAFTA, and in the context of a growing Mexican market for this sector's output, there should be net benefits for this Wisconsin industrial sector. U.S. exports to this sector should grow fairly rapidly. Within five years, new jobs created in Wisconsin in this sector from the direct and indirect effects of NAFTA within the context of Mexican economic growth could be in the range of 250. Over the following ten years, that number could rise to the 500 range.

In Wisconsin, in the household furniture sector, there are 5,400 people employed, 4,400 of whom are involved in actual production. Average hourly wages among the latter are only about \$7.25. The firms in this sector in Mexico lack scale economies, are plagued by high input costs, and lack managerial skill and quality control, but they are geared entirely to domestic (i.e., Mexican) consumption/demand. Thus, they do offer some degree of competition to U.S. firms, despite NAFTA. Nevertheless, the problems that these Mexican competitors face create opportunities under the various NAFTA provisions for continued U.S. incursion into this growing Mexican market, especially as higher Mexican living standards (and the Mexican household propensity to purchase U.S. product and higher quality output as well) bring a demand

for higher-quality, more-diverse household furniture. Over the next five years, as a result of the direct and indirect effects of NAFTA, new jobs in Wisconsin in the household furniture should number on the order of 150, with that number growing to as many as 300 over the next ten years.

In Wisconsin, in the office furniture sector, there are 1,700 people employed, with 1,100 of them being involved in actual production. The average hourly wage rate among the latter is about \$8.83. In this case, there is not likely to be a significant surge in exports to Mexico under NAFTA due to distance considerations between Mexico and Wisconsin. Nevertheless, there is a possibility of some demand growth in the Mexican market over time if Wisconsin producers/suppliers are aggressive and exhibit increased product-line flexibility. However, increased access to the Canadian government-procurement market could be very advantageous for Wisconsin producers/suppliers because of the close proximity to Canada and the lower shipment costs that such proximity affords. If Wisconsin producers in this sector market aggressively and are flexible in product-line diversity, then new jobs in this sector in Wisconsin under direct and indirect NAFTA effects could number as many as 75 over the next five years and as many as 150 over the long run (15 years).

S. Electronic Components and Accessories

Nationally, employment in this sector is estimated at 350,000, with annual shipments estimated at in excess of \$38 billion. U.S. companies have been globally competitive in electronic components and accessories. However, over the last five years, Asian firms have emerged as increasingly key competitors in global markets. Canada and Mexico are the top two export markets for U.S. exports of electronic components and accessories.

At the inception of NAFTA, Mexican tariffs were immediately eliminated on 48.9 percent of U.S. exports in this sector. Over the next five years, 28.9 percent more of such exports to Mexico will become duty free. Over the following five-year period, the remainder of U.S. exports in this sector become duty-free. NAFTA opens up a significant portion of the government-procurement markets in Mexico and Canada. Most U.S. exports to Canada were already duty-free under the CFTA of 1989 and hence prior to the inception of NAFTA. However, upon NAFTA inception, it is noted that virtually all Mexican imports into the U.S. became duty-free. This is a concern in this particular sector because many low-end jobs are expected to be lost to Mexico, which has a significant competitive advantage over the U.S. in the production of labor-intensive output that requires only low-skill (and hence low-wage) laborers.

In Wisconsin, there are 4,300 people employed in the electronic components and accessories sector, with 2,700 of them involved in actual production. Wages among the latter average about \$7.49 per hour. Mexico is traditionally a primary export market for U.S. electronic components. Economic growth is expected to continue in Mexico, and along with it U.S. export growth should continue as well under NAFTA. In Mexico, this sector has a primary focus on production of low-end, semiconductor-related components. Lack of a skilled and dependable work force as well as a lack of the needed investment in Mexico severely limit expansion of producers in Mexico into higher-end product. The Mexican market is expected to grow rapidly. However, U.S. firms face intense competition from Asian firms. In any event, over the next five years, it is likely that a decline in this sector in the number of Wisconsin low-end, low-skill jobs will occur; perhaps 300-500 such jobs will be *lost* to foreign competition (Asian competition in Mexico and Mexican competition in Mexico and in the U.S.). Over the next 15 years, such job *losses* in Wisconsin could rise by an additional 500-600 under NAFTA-related and correlated events. This will be slightly offset by the creation of high-end jobs for engineers and other highly skilled workers who are suited for precision manufacturing positions in this sector in Wisconsin. In addition, some of the job displacement in this sector already had transpired prior to NAFTA in anticipation of NAFTA's being instituted. Finally, the need for QR ("quick response") production puts an upper limit on job displacement in this sector, given the

structure of Mexican versus U.S. wage rates. The end result, however, is a likely *net* loss of 500-650 jobs in Wisconsin in this sector in the long run from the NAFTA direct and indirect effects and correlative circumstances (such as the increasing Asian competition in the Mexican and U.S. markets).

Agriculture

- T. Dairy Products**
- U. Corn**
- V. Cattle**
- W. Hogs**

Wisconsin has a major agricultural sector. Indeed, it ranks no lower than 9th in the nation among the 50 states and Puerto Rico in terms of the value of total farm marketings, with estimated total farm marketing receipts exceeding \$5.5 billion annually. In terms of marketing receipts, the principal agricultural outputs are dairy products, corn, cattle, and hogs.

Overall, NAFTA should have only a minimal effect on U.S. and Wisconsin agricultural production and employment; however, in certain specific sectors, there may be minor gains, whereas the likelihood of anything more than minute losses is negligible.

For many years, imports of dairy products into the U.S. from Mexico have been subject to quotas, whereas imports of U.S. dairy products into Mexico have been subject to import licenses. Under NAFTA, both nations eliminate these measures. NAFTA will likely benefit the U.S. dairy products sector in both the short run and the long run. This is because:

- (1) Mexico's dairy industry is at a major competitive (efficiency) disadvantage relative to the U.S. dairy industry;
- (2) Mexico's production of milk and dairy products is already insufficient to meet its own domestic demand; and,
- (3) Mexico's economy and demand for dairy products are likely to grow much faster than their counterparts in the U.S.

NAFTA will likely lead to only a minor rise in U.S. imports of dairy products from Mexico, while U.S. exports of dairy products to Mexico under NAFTA will likely rise considerably. The latter will almost entirely consist of milk powder and possibly butter oil. NAFTA will most likely lead to only a minor increase in other dairy product exports to Mexico because of limited refrigerated transportation and storage in Mexico.

Wisconsin should, despite these circumstances, experience essentially no increase in production or employment as a result of these circumstances in the short run. This is due to the general state of surplus production that has plagued the U.S. dairy industry for years. In other words, with a state of surplus production in the U.S. dairy sector, there are ample supplies to meet increased net demands from Mexico due to NAFTA in the foreseeable future. However, in the long run, with the continued prosperity of the Mexican economy, demand could grow enough to filter down ("up") to the Wisconsin dairy sector, albeit on a limited scale. The extent to which the Wisconsin dairy-products industry benefits over the long run from NAFTA might well be augmented by increased product differentiation achieved by effective advertising. To the extent that demand for Wisconsin output rises, prices and profitability will also rise; any such impacts will be extremely small (unless product differentiation through advertising can be used to raise the demand for Wisconsin dairy products — as opposed to dairy products from elsewhere in the U.S.). In any case, NAFTA certainly will not adversely impact on the dairy-products sector in Wisconsin.

In terms of corn, the picture is somewhat different. Since U.S. tariffs on Mexican imports of corn were less than two percent before NAFTA, NAFTA's elimination of corn tariffs is unlikely to have any kind of significant impact on U.S. imports of Mexican corn. On the other hand, given a variety of specific tariff and non-tariff measures in NAFTA regarding U.S. corn exports to Mexico, there is likely to be a significant change here, especially in light of the growing Mexican economy and the fact that corn is used principally for human consumption in Mexico. In the first year of NAFTA, Tariff Rate Quotas (TRQs) will block any growth in U.S. corn exports to Mexico, since the volume of U.S. corn exports to Mexico during the 1989-1991 period exceeded the volume in the TRQ for corn in Mexico. In the long run, however, U.S. corn exports to Mexico could rise as much as 350-400 percent. This would translate into an increased demand, indirectly or possibly even directly, for Wisconsin corn and higher corn production levels (conceivably, up to six percent higher), slightly higher employment (0.5 to 1.0 percent), slightly higher corn prices (up to four percent), and slightly improved profits for Wisconsin farmers.

NAFTA will likely result in only a very minor increase in U.S. imports from Mexico in the hog and cattle sectors, since U.S. tariffs on such imports were already quite low before NAFTA. Although Mexican demand for these types of items from the U.S. will grow over time with the expanding Mexican economy and with rising Mexican living standards, there remains enough underutilized capacity in the U.S. that only a very small rise in this sector in U.S. production and employment, perhaps 0.5 to 1.0 percent, is likely to be experienced over the next five years as a result of NAFTA impacts. Conservatively, we conclude that NAFTA does not offer the realistic prospect of any damage to the cattle and hog industrial sectors in the U.S. or Wisconsin over these next five years. On the other hand, some modest long-term (within ten to 15 years) benefits are very likely to be experienced in Wisconsin in these sectors; production of cattle and hogs could well increase by two percent over such a period as a result of direct and indirect NAFTA effects, with employment rising by at least one percent in this sector in Wisconsin.

X. Paper and Allied Products

The U.S. paper and allied paper products industry is the most efficient producer among the world's major industrial regions, including Canada, the European Community, Scandinavia, and Japan. This efficiency, i.e., competitive advantage, is the result of several factors, including: an abundant, low-cost, raw-material supply; economies of scale emanating from a world-class infrastructure that relies very heavily on state-of-the-art high-tech equipment; and very large capital outlays (in excess of \$100 billion since 1980) that have raised productivity and served to underwrite expansion into new products and markets.

The two most important export markets for this sector are Canada and Mexico. Between 1987 and 1992, the value of U.S. annual exports to Canada increased 107 percent to \$1.8 billion. Over the same period, U.S. annual exports to Mexico increased by 62 percent to \$1.3 billion. U.S. imports of Mexican product in this sector typically run about 1/10th of U.S. exports in this sector to Mexico.

NAFTA eliminates numerous traditional and non-traditional impedimenta that have slowed U.S. exports of paper and paper products to Mexico. Immediately prior to the inception of NAFTA, 36.9 percent of U.S. exports of paper and paper products to Mexico were already duty-free. NAFTA immediately eliminated tariffs on an additional 5.3 percent of U.S. exports of paper and paper products to Mexico. Over the next five years, another 29 percent of such U.S. exports to Mexico become tariff-free. Finally, over the following five years, all remaining tariffs in this sector are eliminated. NAFTA has provided U.S. producers/suppliers immediate and growing access to the Mexican (and Canadian) government procurement markets. NAFTA

Rules of Origin help to ensure that NAFTA tariff benefits apply only to U.S., Canadian, and Mexican product in this sector. In addition, under NAFTA, Mexico is prohibited from introducing new import license requirements or other non-tariff barriers that are inconsistent with Mexico's GATT obligations.

In this sector in Wisconsin, there are roughly 45,100 people employed, approximately 33,400 of whom are involved in actual production. Hourly wages among the latter average something on the order of \$10.54. This industry sector in Wisconsin is especially diversified. For example, there are 19 major product groups included within this sector. Employment is generated in pulp mills, in paper mills, and in paperboard mills, and in producing paperboard containers and boxes, sanitary paper products, corrugated and solid fiber boxes, envelopes, stationary products, and so forth. As a result of direct and indirect effects of NAFTA (involving both the Mexican and Canadian markets), over the next five years, output in this sector (especially in such areas as wood pulp, sanitary paper products, paperboard boxes, envelopes, and stationary) in Wisconsin should rise at least six to eight percent, with the number of new jobs created being on the order of as many as 500-650. Over the long run (ten to 15 years from now) — under a continued Mexican expansion, which will include a modest continued growth in Mexico's own productive capacity in this sector — the number of new jobs in this sector in Wisconsin should be in the range of as many as 600-900.

IV. OVERVIEW

This study has examined 24 industrial sectors in the state of Wisconsin to ascertain the most likely short-run and long-run net impacts of NAFTA. On the one hand, for the most part, there are a variety of cases where moderate net employment gains are expected to be experienced. On the other hand, there also are cases where little or no net employment gains are expected or where small net employment losses are to be expected.

For the state of Wisconsin, the number of cases where long-term net employment gains are expected under the direct and indirect impacts of NAFTA, and within the context that NAFTA has spurred on (spurs on) major Mexican economic growth, far exceeds the number of cases with negligible net employment gains or with outright expected net employment losses. However, in the cases where gains are expected, it is clear that these gains, while very encouraging and economically stimulating, nevertheless will not generate massive numbers of Wisconsin jobs. Over the next five years, this job growth should be on the order of 3,300; over 15 years, the job growth could be on the order of 7,400. Overall, then, NAFTA does the Wisconsin economy negligible harm and, on balance, clearly brings the prospect of an observably improved long-term economic outlook. Unlike many other states, where the outlook is for fewer gains and non-negligible losses under NAFTA, Wisconsin's vital and diversified economy should clearly benefit under NAFTA.

Caveat: The "giant sucking sound" that Ross Perot predicted would be heard as U.S. jobs were moved to Mexico as a result of NAFTA has not been heard at all. Rather, the data show that NAFTA has clearly led to net U.S. job creation, expected to be on the order of 100,000 in the U.S. for the calendar year 1994 alone.

But for NAFTA to be all that it was intended to be and for it to yield the kinds of results projected above for Wisconsin, (1) Mexico will have to improve its political, economic, and social conditions, and (2) Wisconsin businesses will have to spend more time and effort learning the Mexican culture and cultivating relationships with Mexican businesses. In addition, (3) the average growth rate of Mexico's real GDP will have to rise, and (4) the commitment to improving the Mexican infrastructure (highways and ports, especially) must be maintained.

During 1993, Mexico's real GDP grew by less than one percent. During 1994, under NAFTA, it is growing at a four percent annual rate. But at four percent, there probably is just barely enough growth to generate the nearly one million jobs needed in Mexico to accommodate the number of women and youths entering the labor force. An average annual growth rate of real GDP in Mexico of at least five percent is needed for our forecasts to hold true. While there is every indication that this is feasible (the Clinton administration predicts as much as six to eight percent real GDP growth in Mexico over the next ten years; see Office of the U.S. Trade Representative (1993)), the reality is that there is still a long way to go!

Mexico's social/economic/political problems are also deep and must be ameliorated for stability to be manifested. There is a huge gap between the rich and the poor and between the quality of their education systems. These issues must be addressed. Government-protected monopolies in areas such as communications must lose that protection. And Mexico must continue to reinforce the democratic practices that it has undertaken over the past six years. The commitment to improving the Mexican infrastructure cannot deteriorate; the demand that this commitment creates is important to Wisconsin industries over the longer run. Finally, Wisconsin businesses must do their part in pursuing Mexico, if they wish to succeed under NAFTA.

REFERENCES

- Anderson, Richard K., and John R. Moroney, "Substitution and Complementarity in C.E.S. Models," *Southern Economic Journal*, April, 1994, pp. 886-895.
- Armington, Paul S., "A Theory of Demand for Products Distinguished by Place of Production," *IMF Staff Papers*, March 1969.
- Barro, Robert J., and Xavier Sala-i-Martin, "Convergence across States and Regions," *Brookings Papers on Economic Activity*, No. I, 1991, pp. 107-158.
- Bureau of Economic Analysis, *Income and Product Accounts of the United States*, Washington, D.C.: U.S. Department of Commerce, 1992.
- Burfisher, Mary, Karen Thierfelder, and Kenneth Hanson, *Data Base for a Computable General Equilibrium Model of the Agricultural Sectors of the United States and Mexico and Their Interactions*, Washington, D.C.: U.S. Department of Agriculture, Economic Research Service, 1992.
- Cebula, Richard J., *The Determinants of Human Migration*, Lexington, Mass.: Lexington Books, 1979.
- Cebula, Richard J., *Geographic Living Cost Differentials*, Lexington, Mass.: Lexington Books, 1983.
- Cebula, Richard J., Robert B. Lann, B. William Riall, and Willie J. Belton, Jr., *NAFTA: A Preliminary Evaluation--An Overview and Special Focus on Selected Georgia Industries*, Atlanta, Ga.: Georgia Tech Economic Development Institute, 1993.
- Crandall, Robert W., *Manufacturing on the Move*, Washington, D.C.: The Brookings Institution, 1993.
- Davis, Steven J., and John Haltiwanger, "Gross Job Creation, Gross Job Destruction, and Employment Reallocation," *Quarterly Journal of Economics*, August, 1992, pp. 819-863.
- De Melo, Jaime, and David Tarr, *A General Equilibrium Analysis of U.S. Foreign Trade Policy*, Cambridge, Mass.: M.I.T. Press, 1992.
- Herzog, Henry W., and Alan M. Schlottman, *Industry Location and Public Policy*, Knoxville, Tenn.: University of Tennessee Press, 1991.
- Hoover, Edgar M., and Frank Giarratani, *An Introduction to Regional Economics*, 3rd edition, New York, N.Y.: Alfred A. Knopf, Inc., 1984.
- Hufbauer, Gary Clyde, and Jeffrey J. Schoot, *North American Free Trade: Issues and Recommendations*, Washington, D.C.: Institute for International Economics, 1992.
- Nourse, Hugh O., *Regional Economics*, New York, N.Y.: McGraw Hill Book Company, 1968.
- Office of the U.S. Trade Representative, *The NAFTA: Expanding U.S. Exports, Jobs and Growth*, Washington, D.C.: U.S. Government Printing Office, 1993.
- Reinert, Kenneth A., and Clinton B. Shiells, *Estimated Elasticities of Substitution for Analysis of a North American Free Trade Area*, Washington, D.C.: U.S. International Trade Commission, 1992.
- Richardson, Harry W., *Input-Output and Regional Economics*, New York, N.Y.: John Wiley & Sons, 1972.
- Siebert, Horst, *Regional Economic Growth: Theory and Policy*, Scranton, Pa.: International Textbook Company, 1969.
- Truett, Lila J., Dale B. Truett, and Bobby E. Apostolakis, "The Translog Cost Function and Import Demand: The Case of Mexico," *Southern Economic Journal*, January, 1994, pp. 685-700.
- U.S. Department of Commerce, *Annual Survey of Manufactures, and North American Free Trade Agreement: Opportunities for U.S. Industries*, Washington, D.C.: U.S. Government Printing Office, 1993.
- U.S. Department of Commerce, *Statistical Abstract of the United States, 1992*, Washington, D.C.: U.S. Government Printing Office, 1992.