

October 2004

The North American Free Trade Agreement after Ten Years: Its Impact on Minnesota and a Comparison with Wisconsin

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Summary

This article begins by examining the overall impact of NAFTA on the U.S. economy and comparing this impact with what had been predicted in the early 1990s. We next examine the impact of NAFTA on the economy of Minnesota, focusing on the pattern of exports and production. We compare data on the performance of Minnesota exports with corresponding data for our neighboring state, Wisconsin, which has expanded its exports to Mexico far more than Minnesota has done. We ask the questions, “Is Wisconsin’s greater success in expanding exports to Mexico due to a less Eurocentric attitude on the part of large firms that were already established exporters?” or “Was this greater success due to a greater willingness on the part small and medium-sized firms in Wisconsin to enter a new export market?” We find significant evidence for affirmative answers to both questions, especially the second, and we hypothesize that this greater willingness of small and medium-sized firms in Wisconsin to begin to export to Mexico may have been due to more aggressive export promotion policies on the part of the Wisconsin state government.

* The authors would like to thank Thu-Mai Ho-Kim of the Analysis and Evaluation Office of the Minnesota Department of Employment and Economic Development for helpful advice and discussions. A version of this paper is forthcoming in the *CURA Reporter*, a publication of the University of Minnesota’s Center for Urban and Regional Affairs (CURA). The data used in this article are available at <http://www.econ.umn.edu/~tkehoe/>. The views expressed here are those of the authors and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.

Introduction

January 1, 2004, marked the 10th anniversary of the enactment of the North American Free Trade Agreement (NAFTA), which expanded the free trade area formed by the Canada-U.S. Free Trade Agreement in 1989 to include Mexico. The liberalization of trade has had a dramatic impact on trade flows in North America. Between 1988 and 2003, total merchandise trade between the United States and Canada increased by 162.8%, and trade with Mexico increased by 438.9%, whereas trade with non-NAFTA countries increased by only 138.7%.

The success of NAFTA in promoting U.S. exports, especially exports to Mexico, has created the impetus to further expand the scope of free trade into Latin America. The United States and Chile signed a free trade agreement in September 2003, which has since been approved by the congresses of both countries. In addition, the United States has finished the negotiation of the Central American Free Trade Agreement with Costa Rica, the Dominican Republic, Guatemala, Honduras, El Salvador, and Nicaragua, and has begun negotiations of agreements with Bolivia, Colombia, Ecuador, Panama, and Peru. With NAFTA now 10 years old and more free trade agreements on the horizon, it makes sense to ask the questions, “What has been the impact of NAFTA on the U.S. economy?” and “How has Minnesota fared under NAFTA compared with the rest of the United States?”

This article begins by examining the overall impact of NAFTA on the U.S. economy, and compares the actual economic impact with predictions made in the early 1990s. We then examine the impact of NAFTA on the economy of Minnesota, focusing on the pattern of exports and production. We compare data on the performance of Minnesota exports with corresponding data for our neighboring state, Wisconsin, which has expanded its exports to Mexico far more than has Minnesota. We also consider why Wisconsin has had greater success in expanding exports to Mexico; is it because of a less Eurocentric attitude on the part of large, established exporters, or because of a greater willingness on the part small- and medium-sized firms in Wisconsin to enter a new export market? We find significant evidence for both explanations, especially the second, and we hypothesize that this greater willingness of small- and medium-sized firms in

Wisconsin to begin to export to Mexico may have stemmed from more aggressive export promotion policies on the part of the Wisconsin state government.

This study evolved out of research originally supported by a grant from CURA's Faculty Interactive Research Program in 1992. The original research project involved the construction of an applied general equilibrium model to analyze the impact of NAFTA on Minnesota's economy. Unfortunately, that model — like the other economic models described below that were developed to analyze the impact of NAFTA — failed to predict the large increase in trade flows in some sectors that has occurred during the past decade. The present study was directed at understanding why the earlier models were so wrong in their predictions. Additional support for this research was provided by the National Science Foundation.

Predictions about the Impact of NAFTA

The year preceding the approval of NAFTA by the U.S. House of Representatives in November 1993 was one of intense public debate. Some opponents of NAFTA, including Ross Perot and many labor union leaders, predicted that the trade agreement would result in a “giant sucking sound,” with jobs and incomes being sucked south of the border and U.S. income levels dropping sharply. Some proponents, including business groups and members of the Clinton administration, predicted that NAFTA would result in miraculous economic growth in Mexico and large trade surpluses in the United States. Ten years later, it is safe to say that none of these extreme predictions were accurate.

Economists who developed models to analyze the potential impact of NAFTA in the early 1990s were fairly unanimous in their predictions: NAFTA would have small but favorable overall impacts on Canada and Mexico, but virtually no macroeconomic impact on the United States, due to the differences in the relative sizes of the three North American economies. The models predicted that NAFTA would result in modest increases in trade volumes, with the largest increases occurring in sectors that already had significant amounts of trade. Unfortunately — at least for the economists involved — these predictions were also inaccurate. Trade volumes have exploded in North America, and some of the largest increases occurred in sectors where there had been little or no previous trade.

The Actual Impact of NAFTA

In what follows, we examine the changes in trade patterns that occurred between 1990 and 2000. We start in 1990 to focus our attention on NAFTA and the period leading up to it; we end in 2000 because of limitations on data availability. We focus on merchandise trade — that is, trade in goods — because of the availability of these data at the state level. Furthermore, the data indicate that the explosion of trade volumes in North America has been in merchandise trade, not services trade.

Increased Exports to Canada and Mexico. As Figure 1 illustrates, the ratio of U.S. exports to Canada to U.S. Gross Domestic Product (GDP) increased by 24.4% from 1990 to 2000. For exports to Mexico, this ratio increased by 126.6%. For exports to the rest of the world, this ratio increased by only 2.5%. In 2000, Canada was the United States' largest export market, accounting for 22.6% of its exports (up from 21.1% in 1990), whereas Mexico had passed Japan to become the United States' second largest export market, accounting for 14.1% of its exports (up from 7.2% in 1990). To put these numbers in perspective, in 2000 Canada and Mexico purchased far more U.S. exports — almost 70% more — than did the 15 members of the European Union, even though these 15 countries had more than six times the GDP of Canada and Mexico combined.

From 1990 to 2000, imports from NAFTA countries into the United States also increased, and the United States currently runs large trade deficits with both Canada and Mexico. It is important to note, however, that these trade deficits are far smaller proportionally than are the deficits that the United States runs with its other trade partners. In 2000, for example, Canada accounted for only 11.7% of the U.S. trade deficit, compared to 22.6% of U.S. exports; and Mexico accounted for only 5.6% of the deficit, compared to 14.1% of exports. In contrast, China accounted for 19.3% of the deficit, compared to 2.1% of exports. The large U.S. trade deficits of the late 1990s were largely a product of relatively high levels of productivity in the United States, which made it an attractive target for investment by foreigners. For the most part, the large trade deficits of the early 2000s have been a product of large U.S. government deficits. In each case, foreigners buy something else from the United States besides U.S. goods: U.S. private assets, including equities or corporate bonds, or U.S. government bonds.

Increased Employment and Productivity. Discussions of the gains and losses resulting from NAFTA often revolve around the number of jobs created and destroyed. Proponents of NAFTA claimed that it would result in 200,000 jobs created every year. Opponents argue that, in fact, it has resulted in 750,000 jobs destroyed. To put these numbers in perspective, consider that, every year in the United States, about 10% of all jobs are destroyed by quits, involuntary terminations, and firm closures, and about an equal number of jobs are created. During the 10 years since NAFTA was enacted, the average number of jobs in the United States has been about 130 million, which means that, during the past decade, roughly 130 million jobs have been destroyed and a similar number of jobs created.

The expansion of any trade relationship — like the expansion of trade with Canada and Mexico induced by NAFTA, or the current expansion of trade with China — results in both jobs created and jobs destroyed, much like the introduction of new technologies such as word processing. The important questions are the following: Are more jobs created or destroyed? And are the jobs created better or worse, in terms of productivity and pay, than the jobs destroyed? Figure 2 shows that the period following passage of NAFTA was one of net job creation in the United States, with the number of jobs per 100 persons aged 15–64 rising from 72.3 in 1993 to 76.0 in 2000. In other words, the employment rate increased by 3.7%. At the same time, labor productivity, as measured by real output per worker, rose by 15.0%, as shown in Figure 3.¹ Total compensation per worker showed similar gains during this period. The point of Figures 2 and 3 is not that NAFTA has been the sole cause of increased employment and rising labor productivity in the United States during the period 1994–2000. The economists who analyzed the potential impact of NAFTA in the early 1990s were right in pointing out that its macroeconomic impact would be small. American trade with Canada and Mexico has only increased from 4.1% of U.S. GDP in 1994 to 6.7% in 2000, whereas real U.S. GDP has increased by more than 30%. Nor is the point of Figures 2 and 3 to deny that some workers suffered losses as a result of the increased trade and investment flows that resulted from NAFTA. The point is, rather, that it is difficult to argue that NAFTA has

¹ Incomplete data for the years 2001–2004, which are not shown in Figures 2 and 3, indicate that the employment rate fell in 2001 and 2002 and began to rise again in 2003 and 2004, whereas labor productivity has continued to increase throughout this period.

resulted in falling employment or income levels in the United States, as Ross Perot had predicted it would, whereas it is far easier to argue that NAFTA has played an important role in increasing productivity.

NAFTA Exports Grew More in Wisconsin than in Minnesota. As the data in Figures 2 and 3 indicate, the period 1994–2000 was one of increased employment and productivity in both Minnesota and Wisconsin. The employment rate increased by more than 6% in each state, and real output per worker increased by 19.2% in Minnesota and 10.6% in Wisconsin. The data depicted in Figures 4 and 5 show that NAFTA had a very different impact on Minnesota’s trade patterns than it did on Wisconsin’s, however. Although Minnesota’s exports to Canada and Mexico expanded only modestly, Wisconsin’s exploded.

From 1990 to 2000, the ratio of Minnesota exports to Canada to the Minnesota Gross State Product (GSP) actually fell by 7.9%; for exports to Mexico, this ratio increased by 46.7%; and, for exports to non-NAFTA countries, the ratio fell by 7.1%. Canada was Minnesota’s number one export market throughout this period, whereas Mexico moved from number nine to six, passing Italy, France, and Korea, but still behind Canada, Japan, the United Kingdom, Germany, and the Netherlands. Overall, the ratio of Minnesota exports to GSP fell by 5.9%.²

In contrast, during this period of time, the ratio of Wisconsin exports to Canada to the Wisconsin GSP increased by 17.2%; for exports to Mexico, this ratio increased by 212.4%; and, for exports to non-NAFTA countries, the ratio fell by 2.8%. Canada was Wisconsin’s number one export market throughout this period, whereas Mexico moved from number eight to number three, still behind Canada and Japan. Overall, the increase in exports to NAFTA countries led Wisconsin’s ratio of exports to GSP to increase by 10.3%.

² These data were obtained from the Massachusetts Institute for Social and Economic Research (MISER) at the University of Massachusetts at Amherst, which adjusts raw data from the U.S. Census Bureau’s Foreign Trade Division by filling in missing industry and state information. No state import data are available. Raw data from the U.S. Census Bureau indicate that between 2000 and 2003, Mexico fell to seventh on the list of Minnesota’s trade partners, as Ireland shot up from number seven to number two. In July 2004, MISER moved to Holyoke Community College and became the World Institute for Strategic Economic Research (WISER). Since 2000, MISER/WISER has not made adjustments to the U.S. Census Bureau data.

The decline in the relative importance of exports in Minnesota was reflected in the decline in the relative importance of the sectors that produce merchandise exports — agriculture, mining, and manufacturing. In 1990, these sectors accounted for 26.0% of Minnesota GSP; in 2000, they accounted for only 19.5%. In Wisconsin, the drop was proportionally smaller, from 32.1% to 26.9%. We should remember, however, that, in both Minnesota and Wisconsin, the decline in the importance of these sectors was only relative. Other sectors — construction, utilities, and services — had both real output and prices that grew faster. In both Minnesota and Wisconsin, the real output at 1996 prices produced by agriculture, mining, and manufacturing increased substantially from 1990 to 2000, by 40.0% and 49.4%, respectively. In Minnesota, however, the real output of construction, utilities, and services increased even faster, by 55.3%, during this period, whereas in Wisconsin, the real output of these sectors increased more slowly, by 41.8%.

The data on employment and productivity in Figures 2 and 3 show that the period following NAFTA has been a good one for Minnesota at a macroeconomic level. Nevertheless, there are at least two reasons to be concerned by the relatively poor performance of Minnesota firms in expanding their exports to Canada and Mexico. First, NAFTA serves as a prelude to further economic integration in the Americas, and the failure of Minnesota firms to take advantage of export opportunities in Canada and Mexico may point to problems that will limit Minnesota's ability to reap future gains. Second, the inability to expand exports as rapidly as states such as Wisconsin will lead to a further shrinking of the sectors that produce exports, which could make Minnesota more vulnerable to external shocks that increase the prices of the goods produced by these sectors relative to those of other sectors. In the event of a real devaluation of the U.S. dollar, for example, the prices of traded goods such as agriculture, mining, and manufacturing would increase relative to the prices of nontraded goods such as construction, utilities, and services. Such a devaluation would have a larger negative impact on Minnesota than on Wisconsin. It is likely that this sort of devaluation will eventually occur: Economic theory says that the massive trade deficits currently being run by the United States eventually will be followed by trade surpluses that will be accompanied by a real devaluation of the U.S. dollar.

Different Explanations for Why NAFTA Exports Grew More in Wisconsin

As the data in Figure 5 show, if Wisconsin had not expanded its exports to NAFTA countries — especially to Mexico — it, like Minnesota, would have seen its ratio of exports to GSP fall from 1990 to 2000, and it, like Minnesota, probably would have experienced a decline in the relative importance of its exporting sectors. Why were firms in Wisconsin more able than Minnesota firms to take advantage of NAFTA to expand exports? There are at least two alternative explanations of Wisconsin's superior performance in exporting to NAFTA countries.

First, large Minnesota firms have been slow to take advantage of export opportunities in Mexico because of Eurocentric export strategies. An April 27, 1999, article in *Fortune* magazine cites 3M, Minnesota's largest publicly traded firm, as a particular case in point. Some additional evidence in favor of the argument that Minnesota firms are more Eurocentric in their export strategies than are Wisconsin firms is provided by data on the distribution of exports before NAFTA was enacted. These data indicate that Minnesota exports are far more skewed to European countries than are the exports of either Wisconsin or the rest of the United States.

Second, the state of Wisconsin has adopted policies that assist small- and medium-sized firms to set up export operations in Mexico. Wisconsin operates a State Trade Office in Mexico City that helps firms conduct market research and search for distributors and consumers. The Minnesota Department of Employment and Economic Development, located in St. Paul, has a limited ability to provide some of the same services. In a June 2004 interview with Minnesota Public Radio, Mary Regel, International Director at the Wisconsin Department of Commerce, said, "We have a very good office, and it works with many, many hundreds of Wisconsin companies to help them sell into Mexico."

Although both of these explanations, and even other factors, may have some part in explaining the difference between the export performance of Minnesota and that of Wisconsin, recent economic research — much of it conducted in the Department of Economics at the University of Minnesota — suggests that the crucial factors are those that affect the decisions made by small- and medium-sized firms to begin to export to a specific market. The models that were used in the early 1990s to analyze the likely

impact of NAFTA did not focus on this sort of decision and, consequently, failed to predict large increases in exports in sectors that had done little or no exporting before NAFTA.

Recent research on international trade focuses on the problem of an individual firm faced with the decision of whether or not to begin exporting to a given foreign market. There are two types of costs associated with exporting. The first are per-unit costs, such as shipping, insurance, and tariffs. The second are setup costs, which are one-time costs that must be incurred to begin exporting. Setup costs include the costs associated with conducting market research, redesigning packaging, training a new sales force, and setting up distribution networks.

If a firm is to undertake exporting, it must believe that the profits made from selling the good in another country will be large enough to cover the setup costs. Factors that affect the profits a firm can make from exporting include the per-unit exporting costs and the competition it faces from other producers selling similar products. Both the setup costs and the shipping and tariff charges will vary across firms, but on average, because of geographic proximity and more liberal trade policy, a firm's costs of exporting to Canada will be lower than the costs of exporting to a European country. Thus, it is more likely that a firm will be able to make enough profits to cover the setup costs if it exports to Canada rather than to Europe. In 2000, Minnesota firms exported more than 4.7 times as much to Canada than they did to the United Kingdom, Minnesota's most important European market. The Wisconsin data are even more striking: In 2000, Wisconsin firms exported 8.3 times as much to Canada as they did to the United Kingdom, which was also Wisconsin's most important European market.

This theory also provides a link between expanded exports and increased productivity: The firms that decide to start exporting tend to be more productive than the ones that do not. As these more productive exporting firms grow, they increase the competition for resources — such as workers — which makes it more difficult for less productive firms to turn a profit. Over time, the increased competition forces less productive firms to shrink or even shut down. The growth of high-productivity firms and the decline of low-productivity firms leads to an increase in aggregate productivity, as illustrated in Figure 3.

Methodology

With this theory in mind, we examined the data on exports to see whether the expansion of Wisconsin's exports to Mexico was generated by a few large firms exporting more of the same sorts of goods to Mexico that they had been exporting before NAFTA, or whether it was generated by new firms that began to export after NAFTA. Ideally, we would have liked to use data on which firms were exporting and to where, but these data were not available. To get around this data limitation, we used an indirect approach. Instead of looking at firms that were not exporting to Mexico, we looked instead at goods that were not being exported. We know that if a good such as bituminous coal was not being exported to Mexico before NAFTA, then there were not any firms exporting bituminous coal to Mexico. If we see that, after NAFTA, some bituminous coal was being exported to Mexico, then we know that there were firms that decided to begin exporting bituminous coal to Mexico.

To perform this analysis, we examined data on exports to Mexico from Minnesota and Wisconsin by type of good being exported. The data are organized by the Standard Industrial Classification (SIC) System, which uses categories that group together goods with similar characteristics.³ For example, there is a group for *fabricated metal products* and another for *nonmetallic minerals, except fuels*. The data we examined fell into 28 different major groups, ranging from *agricultural products—crops* to *electronic and electric equipment, except computer equipment*.⁴ The different major groups are listed in Table 1.

³ The data reported in Table 1 are at the two-digit level of disaggregation. For example, the one-digit division *1—mining* is subdivided into the four major groups with SIC codes that begin with a 1: *10—metal mining*, *12—bituminous coal*, *13—oil and gas extraction*, and *14—nonmetallic minerals, except fuel*. The major groups could be subdivided further—into three-digit industry groups or even four-digit industries. The two-digit SIC data that we studied are the most disaggregated state data readily available for the entire period 1990–2000, however. It would be useful to study more disaggregated data. Since 2000, the U.S. Census Bureau's Foreign Trade Division has published state export data using the North American Industry Classification System (NAICS), rather than the SIC. The NAICS was developed in cooperation with Canada and Mexico. In contrast to SIC, which provides up to four-digit disaggregation of data, NAICS provides six-digit disaggregation.

⁴ The data that we used included four additional major groups—*scrap and waste, used or second-hand merchandise, charity and military shipments*, and *special classification provisions*—that we ignored as groups but included in our data for total exports and classified as *other*.

We expanded the range of goods we were focusing on to include not only the goods that were not being exported at all before NAFTA, but also the goods that were being exported very little. We started by ranking the major groups of goods by how much they were being exported in 1990. Then, starting with the major groups that were exported the least, we added together as many major groups as needed to make up 10% of total exports. For the set of least-exported goods to account for exactly 10% of total exports, we had to split the last major group added to the set. This set of goods contains the “least-exported” goods for that trade relationship. For Minnesota’s exports to Mexico, for example, this set of goods consists of 21 of the 28 major groups. We used 77.8% of the last major group — *rubber and miscellaneous plastic products* — so that the set of goods was exactly 10% of total exports. The set of least-exported goods from Wisconsin to Mexico also contained 21 of the major groups, but not the same 21 as Minnesota’s set. The major group *agricultural products—crops* is in the set of least-exported goods for Wisconsin, for example, but not for Minnesota.

Analysis

Figure 6 tracks the share of the least-exported goods as a percentage of total exports from Minnesota and Wisconsin to Mexico from 1990 to 2000. For both states, the set of least-exported goods was constructed so that it constituted 10% of total exports to Mexico in 1990. Notice that there was a significant jump in the share of least-exported goods as a percentage of total exports for both states between 1993 and 1994, as NAFTA induced firms to begin to export to Mexico.

For Minnesota, the share of least-exported goods as a percentage of total exports fluctuated a little, but increased to about 15% during the period, accounting for 17.0% of exports in 2000. Total exports from Minnesota to Mexico grew by 171.7%, whereas the exports of the set of least-exported goods grew by 361.9%. Within the set of least-exported goods, the major groups *fishing, hunting, and trapping; bituminous coal and lignite mining; forestry; and oil and gas extraction* included goods that were not exported from Minnesota to Mexico at all in 1990 but that were exported in 2000. The two major groups of least-exported goods with the largest increases in exports were *paper and allied products* and *transportation equipment*. Two major groups of least-exported goods—

apparel and other textile products and *metal mining*—both had declines in exports during this period. With the exception of a few industries, the composition of exports from Minnesota to Mexico has remained relatively constant throughout the 1990s.

Unlike Minnesota, Wisconsin has seen a major change in its trade pattern with Mexico as a result of NAFTA. Goods that accounted for only 10% of Wisconsin's exports to Mexico in 1990 grew to be 25.6% of its exports to Mexico in 1995 and accounted for 21.8% of these exports in 2000. Within the set of least-exported goods, the major groups *bituminous coal and lignite mining* and *oil and gas extraction* were goods that were not exported from Wisconsin to Mexico at all in 1990 but that were exported in 2000. The two major groups of least-exported goods with the largest increases in exports were *chemicals and allied products* and *rubber and miscellaneous plastics products*. In contrast to Minnesota, where the two major groups of least-exported goods with the largest increases in exports had a total increase of 599.5% (from \$5.4 million in 1990 to \$37.7 million in 2000), the two major groups of least-exported goods in Wisconsin with the largest increases in exports had a total increase of 1,568.9% (from \$5.6 million in 1990 to \$93.1 million in 2000).

It is the differences in the exports of least-exported goods that accounts for most of the differences between Minnesota and Wisconsin in their patterns of export growth to Mexico following NAFTA. The sets of most-exported goods from these two states to Mexico display considerable overlap and more similar growth rates than do the sets of least-traded goods. For example, Table 1 shows that the five major groups of most-exported goods from Minnesota to Mexico in 1990 were *industrial machinery and computer equipment; agricultural products—crops; food and kindred products; electronic and electric equipment, not computer equipment; and instruments and related products*. Together, these five groups accounted for 83.8% of Minnesota's exports to Mexico in 1990. By 2000, the exports of these five groups had increased by 152.8%, from \$136.4 million to \$344.8 million. Table 1 also shows that the five major groups of most-exported goods from Wisconsin to Mexico in 1990 were *industrial machinery and computer equipment; instruments and related products; electronic and electric equipment, not computer equipment; paper and allied products; and fabricated metal products*. Together, these five groups accounted for 76.7% of Wisconsin's exports to

Mexico in 1990. By 2000, the exports of these five groups had increased by 354.8%, from \$105.0 million to \$477.8 million.

That Wisconsin's exports of most-exported goods increased more than those of Minnesota is further indirect evidence of Eurocentric export strategies on the part of Minnesota firms. Nevertheless, a look at the other groups of goods being exported shows a far more dramatic difference between the two states. Minnesota saw the exports of goods not in the five most-exported major groups increase by 269.8%, from \$26.3 million in 1990 to \$97.2 million in 2000. Although this increase is impressive, the corresponding increase for Wisconsin was far larger: 712.6%, from \$31.8 million in 1990 to \$258.7 million in 2000.

Conclusions

The enactment of NAFTA has had a dramatic effect on the pattern of U.S. trade. From 1990 to 2000, exports to Canada (adjusted for U.S. GDP growth) grew 8 times faster—and exports to Mexico grew 42 times faster—than exports to the rest of the world. Our research shows that not all states have responded to NAFTA in the same way. Minnesota and Wisconsin, two very similar states, have had very different experiences under NAFTA. In Wisconsin, trade with Mexico has boomed, whereas in Minnesota, trade with Mexico has grown only slightly faster than trade with the rest of the world. One striking difference between the growth of trade in these two states has been the ability of each state to export goods that either were not being exported or were being exported very little before NAFTA. As summarized in Figure 6, the exports of these least-exported goods grew much more quickly in Wisconsin than in Minnesota.

Our results suggest that some difference in policy between the state government in Minnesota and that in Wisconsin has helped Wisconsin firms expand their export markets in NAFTA countries, especially in Mexico. One possibility, along the lines of the theory outlined here, is that the Wisconsin Trade Office in Mexico City has encouraged small- and medium-sized Wisconsin firms to begin to export to Mexico by reducing their export setup costs.

More research is needed on the relationship between state export-promotion policies and the growth of state exports. Frequently cited research by Timothy Wilkerson

at the University of Akron and Lance Eliot Brouthers at the University of Texas at San Antonio has fostered the perception that foreign state trade offices do little to encourage state exports. Their research is based on regression analysis that uses 1990 data on the levels of state exports. It would be useful to analyze more recent data on the growth — rather than the levels — of state exports. More important, future research could employ the sort of economic theory outlined here, rather than relying on purely statistical analysis, as in the work of Wilkerson and Brouthers.

It is essential that research on the effectiveness of state export promotion policies be couched in terms of economic theory. Only then can we answer the question of whether or not it is good public policy for a state government to pay some of the export setup costs of small and medium-sized firms in terms of conducting market research and searching for distributors and consumers. Is it better public policy to leave these costs to be paid for by the firms themselves? The theory that we have outlined here suggests that state export promotion may be good public policy. There are likely to be increasing returns involved in the collection of information on export possibilities in a country by a state office. This information can then be distributed as a public good to firms from the state.

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If states are to take advantage of the further expansion of free trade into Latin America, it is important that they learn as much as possible from NAFTA. Although both Minnesota and Wisconsin have been able to export successfully to the geographically close, English-speaking country of Canada, there may be a larger role for state

governments to play in encouraging exports to countries such as Mexico. Larger Minnesota firms may also want to be wary about concentrating their export strategies in Europe, where opportunities for expanding exports during the last decade have been smaller than opportunities for expanding exports to Latin America, and are likely to be smaller still during the next decade.

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This study evolved out of research originally supported by a grant from CURA's Faculty Interactive Research Program in 1992. The program was created to encourage University faculty to carry out research projects that involve significant issues of public policy for the state and that include interaction with community groups, agencies, or organizations in Minnesota. These grants are available to regular faculty members at the University of Minnesota, and are awarded annually on a competitive basis. Additional support for this study was provided by the National Science Foundation.

Table 1
Merchandise Exports to Mexico by 2 Digit SIC Code^a
(Thousand U.S. dollars)

SIC	description	United States		Minnesota		Wisconsin	
		1990	2000	1990	2000	1990	2000
01	agricultural products - crops	1,338,690	3,108,919	17,039	42,663	200	5,902
02	agricultural products - livestock	102,673	146,705	3,642	658	7,844	4,514
08	forestry	22,010	39,949	0	47	17	77
09	fishing, hunting, and trapping	20,183	56,462	0	54	0	0
10	metal mining	36,600	50,080	104	3	0	0
12	bituminous coal and lignite mining	8,210	34,762	0	51	0	27
13	oil and gas extraction	109,616	656,348	0	33	0	5
14	nonmetallic minerals, except fuels	41,181	113,644	37	677	66	4,791
20	food and kindred products	1,155,746	3,523,776	15,847	38,107	6,285	43,116
21	tobacco manufactures	3,513	8,749	0	0	0	0
22	textile mill products	438,501	3,466,293	1,108	1,561	739	5,582
23	apparel and other textile products	542,192^b	2,854,859	866	191	56	2,979
24	lumber and wood products	292,227	522,265	455	1,344	324	4,498
25	furniture and fixtures	343,273	274,140	230	1,584	800	4,315
26	paper and allied products	946,615	3,085,086	3,184	23,877	8,305	40,957
27	printing and publishing	118,541	551,359	251	4,332	366	9,632
28	chemicals and allied products	2,336,344	8,147,373	2,455	6,987	3,470	51,161
29	petroleum and coal products	697,454	3,678,873	96	276	62	935
30	rubber and misc. plastic products	972,144	6,066,880	3,373^c	12,550	2,109	41,954
31	leather and leather products	134,449	770,665	123	457	747	5,179
32	stone, clay, and glass products	341,325	1,078,733	1,386	1,720	462	3,090
33	primary metal industries	1,635,573	4,978,683	708	6,946	2,239	9,247
34	fabricated metal products	1,267,620	5,695,395	4,987	10,596	8,044	63,215
35	industrial machinery and computer equipment	4,001,232	14,293,643	78,064	160,744	62,356	239,540
36	electronic and electric equipment, except computer equipment	5,462,291	28,142,548	15,811	77,547	11,457	80,612
37	transportation equipment	3,933,715	13,699,706	2,200	13,789	3,838^d	42,001
38	instruments and related products	1,046,013	3,760,750	9,626	25,760	14,886	53,526
39	misc. manufacturing industries	496,263	1,101,571	440	1,453	1,840	9,387
	other ^e	531,274	1,812,662	648	8,059	369	10,286
	total	28,375,468	111,720,878	162,680	442,065	136,880	736,528

Source: The Massachusetts Institute for Social and Economic Research (MISER) and the U.S. Census Bureau, Foreign Trade Division.

^a Exports in **bold italics** are least traded goods in 1990.

^b 60.7% of this group is included in the set of U.S. least-exported goods.

^c 77.8% of this group is included in the set of Minnesota least-exported goods in Figure 6.

^d 5.0% of this group is included in the set of Wisconsin least-exported goods in Figure 6.

^e 91 scrap and waste, 92 used or second-hand merchandise, 95 charity and military shipments, and 99 special classification provisions.

Figure 1. U.S. Merchandise Exports by Country, 1990–2000.

United States Merchandise Exports by Country

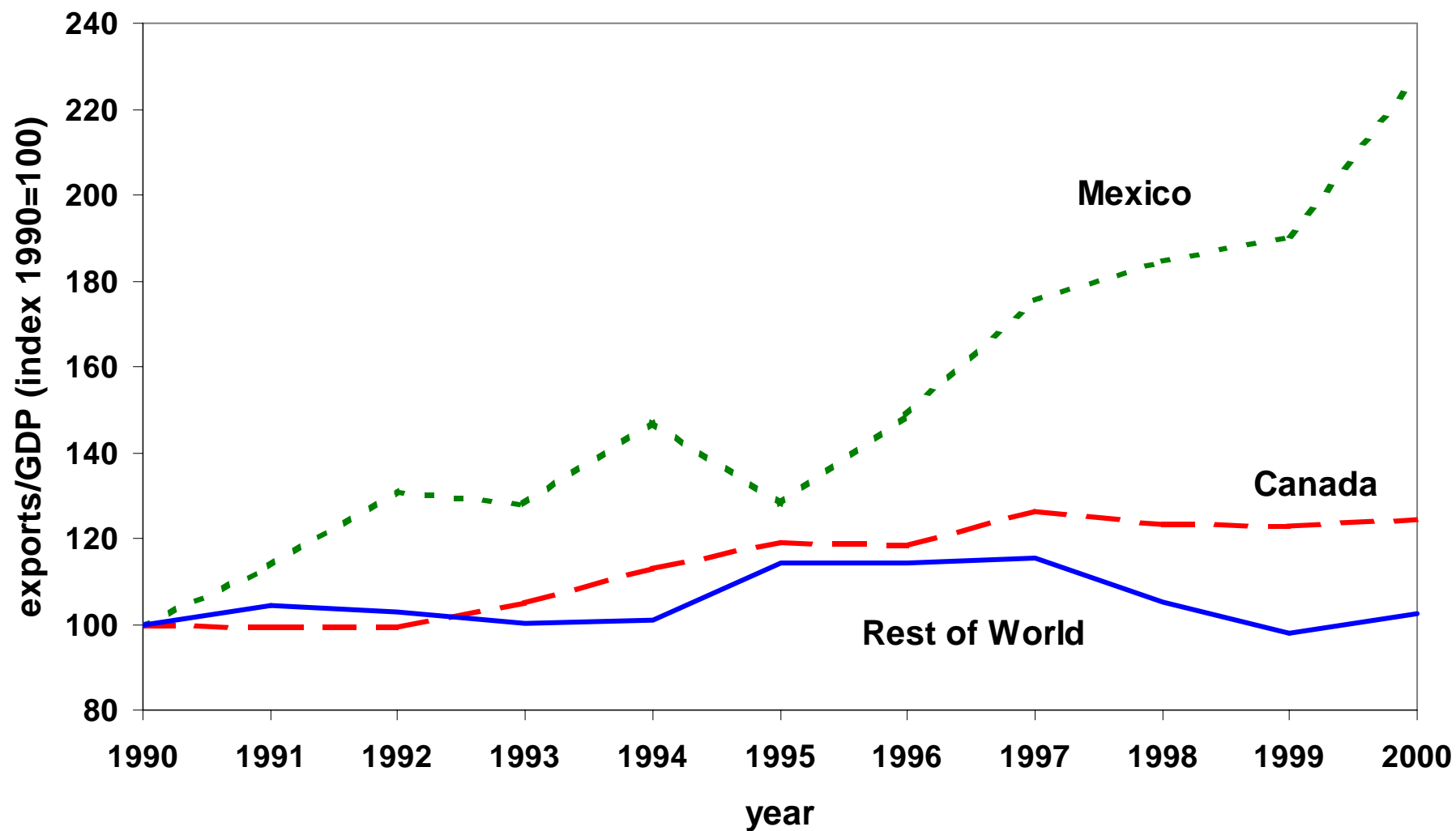


Figure 2. Employment Rate for the United States, Minnesota, and Wisconsin, 1990–2000.

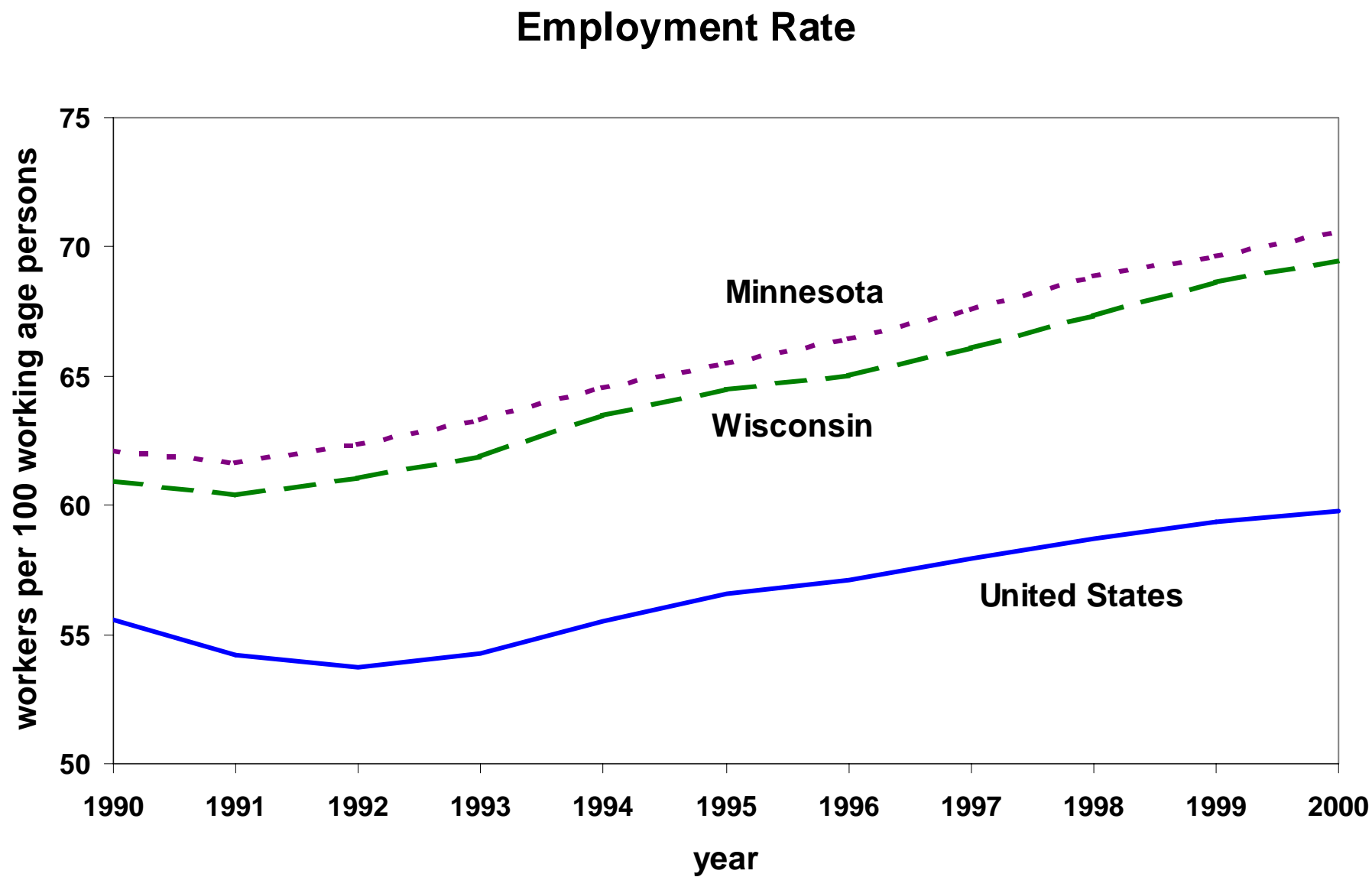


Figure 3. Real Output per Worker in the United States, Minnesota, and Wisconsin, 1990–2000.

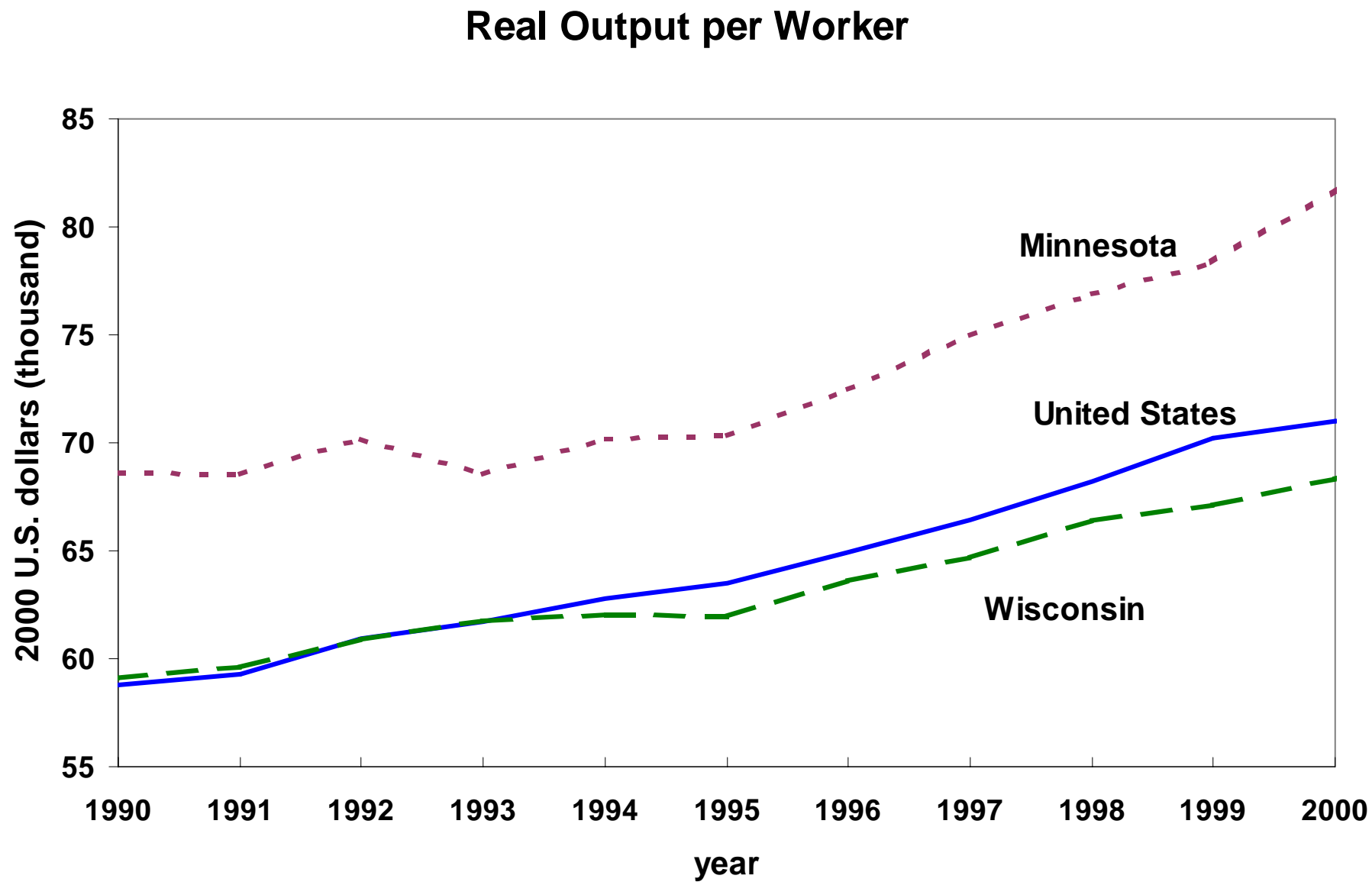


Figure 4. Minnesota Merchandise Exports by Country, 1990–2000.

Minnesota Merchandise Exports by Country

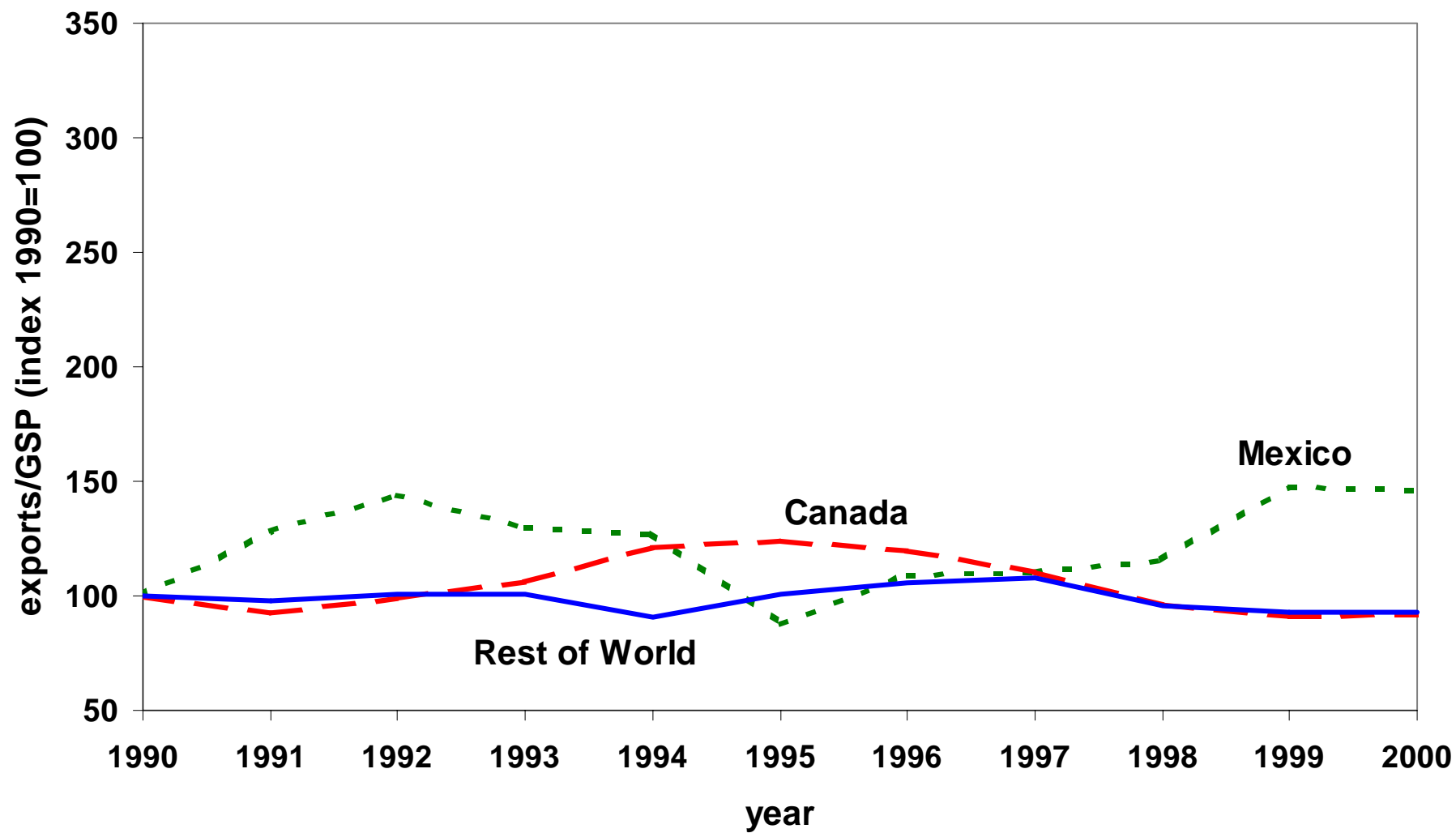


Figure 5. Wisconsin Merchandise Exports by Country, 1990–2000.

Wisconsin Merchandise Exports by Country

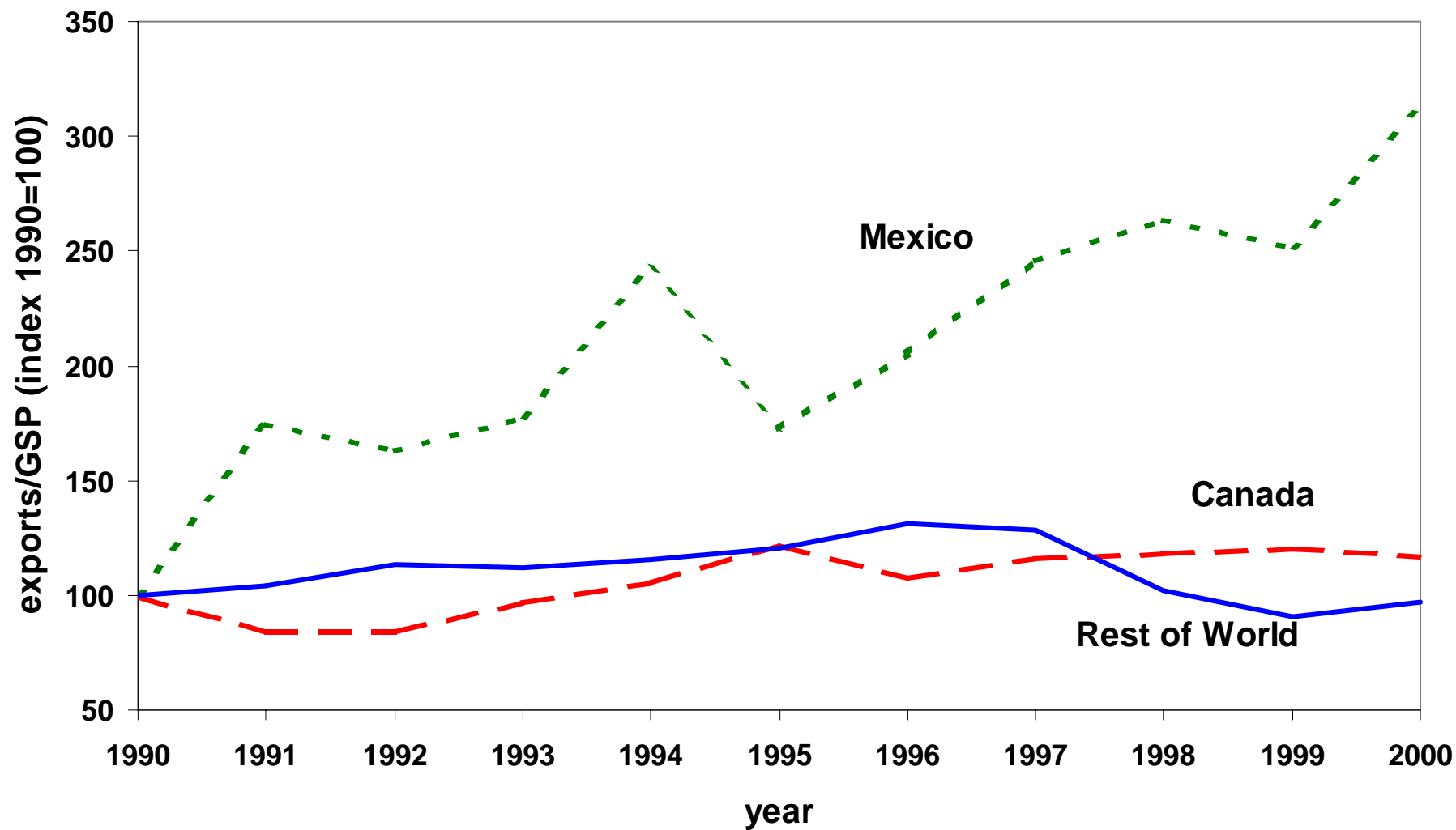


Figure 6. Share of Least Exported Goods as a Percentage of Total Exports from Minnesota and Wisconsin to Mexico, 1990–2000.

Share of Least Traded Goods in Total Exports to Mexico

