

SHIFTING PATTERNS OF WISCONSIN'S EXPORT TRADE 1988 - 2002

**An Analysis of
Export Markets and Export Products
Over the Past 15 Years**



Department of Commerce

Division of International and Export Services

October 2002

Notes

Any compilation of export statistics is fraught with difficulties, and the reader should be aware of some of the inherent problems. These include changes in how the data is reported, changes in the contents of major categories used by statisticians, descriptions of specific products, and changes in reporting areas, technology and industry practices.

The export figures used in this study are from the Origin of Movement Series. Export values are assigned to the specific states based upon the location from which the merchandise actually starts its journey to the port of export as reported by the exporter or agent on the Shipper's Export Declaration. This may not be the state where the merchandise is manufactured, produced or grown. Wisconsin is thus a large "exporter" of wheat, but that wheat was likely grown in Minnesota and the Dakotas, but exported via Great Lakes ports. Similarly, Louisiana is the export state of record for over \$5 billion in corn, soybeans and other agricultural products barged down the Mississippi from the Upper Midwest. As a general rule, exports from states with major ports will be over-reported, in part because domestic companies frequently make "domestic" shipments to the freight forwarders of customers or to distributors who take ownership of the goods and report them as exports from their locations.

Not all Shipper's Export Declarations contain complete information. Data for the period prior to 1996 was adjusted to assign shipments that lacked a state designation to the most likely location. Data reporting has improved over the years and the unadjusted data has been used since 1996.

It should also be noted that, particularly in smaller markets, the use of base years (1988 and 2001 in this case) can cause distortions. For example, in small markets one large shipment in a given base year can have a dramatic impact on percentage growth. Further, some exports, such as agricultural products, vary widely from year to year in terms of volume, price, and export destination.

The decisions by global corporations to establish regional subsidiaries and regional distribution centers can also distort national data. For example, a U.S. corporation may ship most of its products destined for Europe to a regional distribution center in a free port area in the Netherlands, Belgium or Luxembourg. Similarly, assemblies may be sent to a subsidiary in a foreign country where they are assembled and shipped to other national markets in the region. Problems will also arise since components for most products are not produced within a single state. For example, Wisconsin has many companies that make components for the automotive industry, but those components are reported as exports of automobiles.

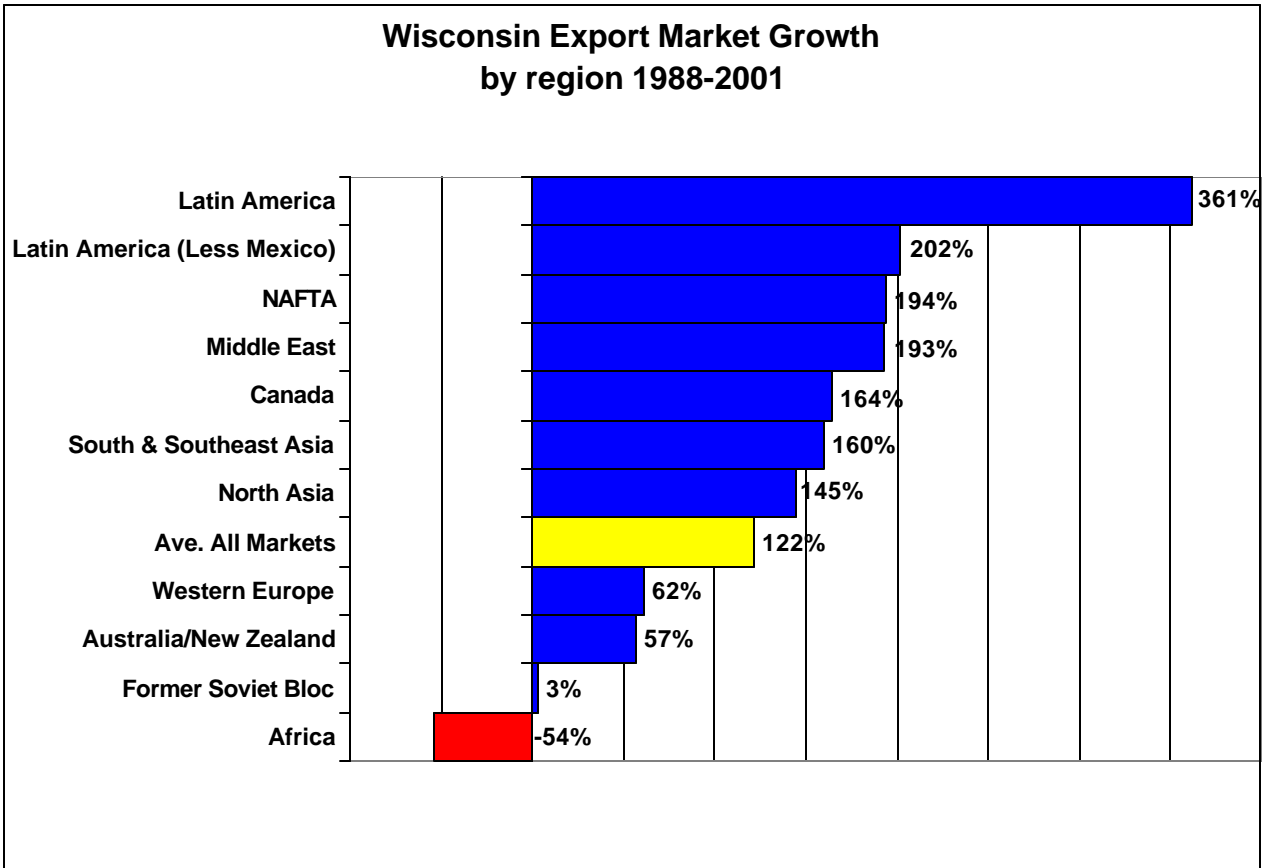
We also wish to call to the reader's attention that countries and groupings of countries change. For example, exports to Germany today were reported as exports to East and West Germany in earlier years. Similar situations exist for the former states of the USSR and Yugoslavia. The composition of the EU has not been static. Prior to its reversion to China, many exports to Hong Kong were destined for China proper.

In sum, the reporting of export statistics is not an exact science. We have done our best to note where data is obviously distorted. Similarly, we have limited our interpretive comments in areas where we felt our expertise was insufficient to draw clear conclusions.

Wisconsin Exports by Region 1988 & 2001
In millions

Country	1988	2001	% Growth	Share of WI Exports	
				1988	2001
Canada	\$1,429	\$3,771	163.90%	30.20%	36.00%
NAFTA (Canada +Mexico)	\$1,512	\$4,441	193.70%	32.00%	42.40%
Latin America	\$263	\$1,212	361.40%	5.60%	11.60%
Latin America (less Mexico)	\$180	\$542	201.60%	3.80%	5.20%
Western Europe	\$1,527	\$2,467	61.60%	32.30%	23.50%
Former Soviet Bloc	\$69	\$72	3.20%	0.10%	0.10%
North Asia	\$649	\$1,590	144.90%	13.70%	15.20%
South & Southeast Asia	\$169	\$440	159.70%	3.40%	4.00%
Australia/New Zealand	\$177	\$278	56.60%	3.80%	2.60%
Middle East	\$119	\$349	192.90%	2.50%	2.60%
Africa	\$290	\$133	-54.20%	6.10%	1.30%
Total	\$4,725	\$10,489	122.00%		

**Wisconsin Export Market Growth
by region 1988-2001**



Shifting Patterns of Wisconsin's Export Trade 1988-2002

Executive Summary:

Wisconsin exports increased 122% from \$4.724 billion in 1988 to \$10.489 billion in 2001. Exports to our NAFTA partners Canada and Mexico were exceptionally strong and Mexico showed the second largest growth rate of any significant Wisconsin market. With a few notable exceptions, exports to Latin America showed superb growth. Mexico and Brazil led the way and Latin America's market share of Wisconsin exports doubled.

Exports to Japan were surprisingly above the overall average despite a decade of economic stagnation in Japan. Exports to China showed the largest growth rate of any significant Wisconsin market and China could well supplant Japan as our largest export market in Asia in the coming years. Exports to Southeast Asia were very good with strong growth in Malaysia and the Philippines with slightly below average increases elsewhere in the region. These decreases were in part due to the political difficulties in Indonesia and the Asian financial crisis of the late nineties. Exports to South Asia were small. There appears to be significant (if latent) potential for major growth in India.

Export growth to mature markets in Europe was about half the worldwide average and, with the exception of Ireland, the export share of every country in Europe saw a decline. Exports to Central and Eastern Europe and the successor states to the USSR, with the exception of Hungary, were at very low levels.

Wisconsin exports to the Middle East were well above average. Sales to the smaller states of the Arabian Peninsula grew remarkably, and exports to Israel showed very impressive growth. Wisconsin exports to Africa have declined precipitously. Africa is now responsible for only 1.3% of Wisconsin exports.

Machinery exports grew by a below average 83.9%, but accounted for a third of all Wisconsin exports. However, they have shown a slow but regular decline in importance. Medical instruments have grown to become our second largest export sector, and represent Wisconsin's major export success over the past decade. Wisconsin agriculture is responsible for about 11.9% of all exports. Trade barriers make sales difficult to impossible to European markets, but Asia and Mexico are important growth areas. Motor vehicle exports are primarily to our NAFTA partners, but there is an important niche market in the Middle East. Although Wisconsin was not a significant player in the global computer chip and telecommunications boom and bust, growth in electrical machinery exports were above the overall state average. Paper and pulp exports have also grown well above average and are primarily directed to our NAFTA partners. Plastic sector exports have grown by 619% since 1988.

Section I – Regional & National Markets

I. THE AMERICAS

The greatest growth in Wisconsin exports in terms of world regions has been the Americas. In 2001, 47.6% of all Wisconsin exports were destined for markets within the hemisphere as opposed to 37.6% in 1988. NAFTA was the primary factor for this growth, but growth across the Americas was very strong. The Free Trade Area of the Americas, pledged to be in place by 2005, could be an important stimulus for future trade growth.

NAFTA

Wisconsin Exports NAFTA Partners In millions					
	1988	2001	% Growth	Share of WI Exports	
				1988	2001
Canada	\$1,429	\$3,771	163.90%	30.20%	36.00%
Mexico	\$83	\$670	707.20%	1.80%	6.40%

Our NAFTA partners have grown in importance with 42.4% of all Wisconsin exports going to our two neighbor nations. Growth to both

countries was above the worldwide average and growth in exports to Mexico exceeded growth worldwide by a factor of 5.8.

LATIN AMERICA

Along with China, Mexico and Brazil have been the most important growth markets for Wisconsin companies worldwide. Chile has been an excellent market and the likely bilateral

free trade agreement with the United States should serve as additional stimulus. The U.S. Congress has been officially informed of the Administration's intent to move rapidly toward a free trade agreement with Chile as well as one with the five members of the Central American Economic Integration System (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua). These agreements should be a further stimulus to trade. Latin America has been subject to a number of financial and political

Wisconsin Exports to Latin America In millions					
	1988	2001	% Growth	Share of WI Exports	
Country				1988	2001
Mexico	\$83.0	\$670.0	707.2%	1.8%	6.4%
Brazil	\$21.2	\$169.4	699. %	0.4%	1.6%
Chile	\$26.7	\$80.9	203.0%	0.6%	0.8%
Venezuela	\$52.5	\$66.2	26.0%	1.1%	0.6%
Argentina	\$9.4	\$56.2	497.8%	0.2%	0.5%
Colombia	\$14.1	\$33.0	134.0%	0.2%	0.3%
Honduras	\$3.5	\$26.2	646.6%	0.1%	0.3%
Dominican Republic	\$13.8	\$22.0	59.4%	0.2%	0.2%
Peru	\$8.4	\$21.3	153.6%	0.1%	0.2%
Costa Rica	\$4.6	\$16.8	265.2%	0.1%	0.1%
Guatemala	\$5.6	\$14.2	153.6%	0.1%	0.1%
Ecuador	\$6.4	\$13.5	110.9%	0.1%	0.1%
El Salvador	\$3.7	\$8.6	132.4%	0.1%	0.1%
Panama	\$7.8	\$8.1	3.8%	0.1%	0.1%
Uruguay	\$1.9	\$5.3	178.9%	0.1%	0.1%
Totals with Mexico	\$262.6	\$1,211.7	361.4%	5.6%	11.6%
Total less Mexico	\$179.6	\$541.7	201.64%	3.8%	5.2%

crises during the period in question. Argentina has been the most recent example, and we expect that such crises will continue and pose ongoing problems for Wisconsin exporters.

II. ASIA

NORTHERN ASIA

There has been a massive increase in Wisconsin exports to China. This is in part due to China's efforts to enter the World Trade Organization (WTO) and its adoption of policies more favorable to international investment and trade. It is conceivable that China could become Wisconsin's largest export market in Asia within a few years. Despite a stubbornly slow Japanese economy over the past decade, Wisconsin's export growth to Japan exceeded the worldwide average during the period, and Japan's share of

Wisconsin's overall exports increased to 7%. Increases in exports to South Korea have been well below the worldwide average. This lack of rapid growth does not appear

to directly relate to the Asian financial crisis, which caused a major drop in exports to Asia in 1998-1999. Korea was the first nation to emerge from that crisis and our exports to that market quickly returned to a pattern of slow growth. China has replaced Korea as our second largest export market in Asia. In 2001, North Asia has 15.2% of our export market share.

Wisconsin Exports to Northern Asia In millions					
Country	1988	2001	% Growth	Share of WI Exports	
				1988	2001
Japan	\$274	\$733	167.90%	5.80%	7.00%
South Korea	\$182	\$221	21.20%	3.90%	2.10%
Taiwan	\$84	\$153	83.60%	1.80%	1.50%
Hong Kong	\$74	\$16	120.10%	1.60%	1.50%
China	\$36	\$320	792.70%	0.80%	3.10%
Total	\$649	\$1,590	144.90%	13.70%	15.20%

SOUTHEAST & SOUTH ASIA

Despite the financial crisis that struck Southeast Asia in 1997-98, Wisconsin export growth was above average for the region with **spectacular growth in the Philippines and Malaysia**. Export growth in these two markets has been tied to offshore production by multinational corporations.

The Indian subcontinent has not been a major market for Wisconsin exports. Market

Wisconsin Exports to South and Southeast Asia In millions					
Country	1988	2001	% Growth	Share of WI Exports	
				1988	2001
Southeast Asia:					
Singapore	\$62.1	\$112.1	80.50%	1.30%	1.10%
Philippines	\$14	\$86	507.70%	0.30%	0.80%
Thailand	\$19	\$44	138.90%	0.40%	0.40%
Indonesia	\$15	\$28	86.70%	0.30%	0.30%
Malaysia	\$7	\$55	720.90%	0.10%	0.50%
Vietnam	\$0	\$7	- - -	0.00%	0.10%
Indian Subcontinent:					
India	\$46	\$82	79.90%	0.90%	0.80%
Bangladesh	\$3	\$17	453.30%	0.10%	0.20%
Pakistan	\$4	\$9	109.70%	0.10%	0.10%
Total	\$169	\$440	159.70%	3.40%	4.00%

penetration has been difficult due to political problems in the area, government policies that favor local production and a variety of informal barriers. There appears to be significant (if latent) potential for major growth in India.

III. AUSTRALIA AND NEW ZEALAND

The increase in Wisconsin exports to the mature markets of Australia and New Zealand has been good, but below the average.

Wisconsin Exports to Australia and New Zealand In millions					
Country	1988	2001	% Growth	Share of WI Exports	
				1988	2001
Australia	\$157.3	\$241.6	53.6%	3.3%	2.3%
New Zealand	\$20.1	\$36.2	80.1%	0.4%	0.4%

IV. WESTERN EUROPE

EUROPEAN UNION

Wisconsin's exports to the European Union grew by only 65.5 % over this 14-year period, about half Wisconsin's worldwide average, and Western Europe's market share for our exports dropped by 8.8% to 23.5%. With the exceptions of the Netherlands and Ireland, every national market has shown a decline in market share of Wisconsin exports.

In 1988, Wisconsin's exports to the European Union's predecessor, the European Economic Community (EEC), were \$1.312 billion and accounted for 27.77% of total Wisconsin exports of \$4.725 million.

Wisconsin Exports to EEC Countries In millions					
	1988	2001	% Growth	Share of WI Exports	
				1988	2001
Germany	\$307	\$376	15.30%	7.00%	3.60%
East Germany*	\$22	----	----	----	----
UK	\$281	\$448	59.40%	5.90%	4.30%
France	\$203	\$366	80.30%	4.30%	3.50%
Italy	\$141	\$254	80.10%	3.00%	2.40%
Belgium	\$128	\$224	75.00%	2.70%	2.10%
Netherlands	\$137	\$312	127.70%	2.90%	3.00%
Spain	\$42	\$72	71.40%	0.90%	0.70%
Portugal	\$26	\$25	-3.20%	0.60%	0.20%
Denmark	\$24	\$33	37.50%	0.50%	0.30%
Ireland	\$10	\$51	414.20%	0.20%	0.50%
Greece	\$13	\$9	-30.30%	0.20%	0.10%
Luxembourg	\$1	\$2	135.40%	0.0002%	0.00002%
Total	\$1,312	\$2,172	65.50%	27.8%	20.7%

Notes: % change for smaller markets was made using non-rounded numbers. West and East Germany were united in 1990. Figures for East Germany are not included in 1988 EEC totals.

Germany, the UK and France comprised 60.3%, or \$791 million, of exports to the EEC. Italy, Belgium and the Netherlands accounted for another \$406 million or 30.9% of all exports to the EEC.

By contrast, in 2001 Wisconsin's exports to the core countries of what was the EEC on 1988 were \$2.171 billion. The UK was our largest market. Exports to the UK, Germany, and France totaled 1.190 billion. Exports to the

Netherlands, Italy and Belgium totaled \$790 million while exports to other 1988 EEC members totaled \$191 million. Total exports to the EEC were 20.69% of all Wisconsin exports of \$10.499 billion.

Germany is Europe's largest nation market, and Germany is a major competitor for Wisconsin products worldwide. This product similarity is not surprising, given Wisconsin's strong German heritage. **Wisconsin sales to Germany in the reference period demonstrated growth well below the average.**

One reason for export growth in the Netherlands, Belgium and Luxembourg has been the tendency of larger Wisconsin companies to set up European regional warehousing in free port areas of the three countries. Keeping merchandise in free port areas delays payment of value added tax and customs duties until the goods in question formally enter the EC. This can significantly improve a company's cash flow. Thus, the growth of exports to these countries reflects significant imports for other parts of Europe in addition to imports for domestic use. It should also be noted that exports to Belgium and France are enlarged disproportionately because of Mercury Marine's European headquarters in Belgium and GE Medical's European operations in France.

In the past decade, Ireland was Europe's most successful growth economy in large part due to major external investment by U.S. multinationals. By contrast, Wisconsin exports to Portugal and Greece actually declined during the worldwide export boom.

OTHER WESTERN EUROPEAN COUNTRIES

Exports to Switzerland were well above the European average but below Wisconsin's worldwide average. Exports to Scandinavia were below average to substandard, with every market showing a smaller share of total Wisconsin exports in 2001.

Wisconsin Exports to other Western European Countries In millions					
	1988	2001	% Growth	Share of WI Exports	
				1988	2001
Switzerland	\$51	\$101	96.70%	1.10%	1.00%
Austria	\$24	\$25	3.30%	0.50%	0.20%
Sweden	\$67	\$93	39.40%	1.40%	0.90%
Finland	\$22	\$20	-8.80%	0.50%	0.30%
Norway	\$28	\$24	-13.00%	0.60%	0.20%
Denmark	\$24	\$33	37.50%	0.50%	0.30%
Totals	\$215	\$295	37.30%	4.50%	2.80%

V. CENTRAL & EASTERN EUROPE & FORMER USSR

Wisconsin Exports to Central & Eastern Europe In millions			
	1988	2001	% Growth
USSR	\$19.6	----	
Former USSR	----	\$23.4	19.40%
Russia	----	\$13.8	
Turkmenistan	----	\$7.8	
Ukraine	----	\$1.8	
Poland	\$14.9	\$17.8	19.50%
Czech Republic	----	\$16.1	
Hungary	\$2.5	\$11.6	364.00%
Yugoslavia	\$9.6	----	
Successors to Yugoslavia	----	\$2.3	-76.00%

Note: % Growth of Former USSR based upon 1988 exports to the USSR and % Growth of Successors to Yugoslavia based upon 1988 exports to Yugoslavia

Despite the hopes of some in the late 80s, **there has been little substantive growth of Wisconsin exports to Central and Eastern Europe or to the former states of the Soviet Union.**

Wisconsin's trade with Chile, for example, exceeds all export trade with this region.

VI. MIDDLE EAST

Wisconsin exports to the Middle East are growing rapidly and well above the overall state average despite ongoing political and economic uncertainties in the region. Exports to Saudi Arabia and the Gulf States are primarily trucks, passenger vehicles, air conditioning equipment, pumps and compressors. The world price for oil is a strong determinant of demand. Egypt and Israel are good customers for medical instruments.

Wisconsin Exports to the Middle East In millions			
	1988	2001	% Growth
Saudi Arabia	\$50.3	\$98.2	95.20%
UAE	\$8.8	\$44.7	408.00%
Kuwait	\$8.5	\$19.3	127.10%
Jordan	\$4.6	\$3.8	-17.40%
Egypt	\$20.0	\$38.8	94.00%
Qatar	\$0.7	\$7.0	900.00%
Yemen	\$0.3	\$5.9	1866.70%
Israel	\$23.0	\$97.9	325.60%
Turkey	\$7.9	\$20.3	157.00%
Cyprus	\$8.2	\$4.0	-70.40%
Total	\$119.0	\$348.6	192.90%

Note: Exports to Lebanon, Syria, Oman and Bahrain are not shown individually but are included in totals.

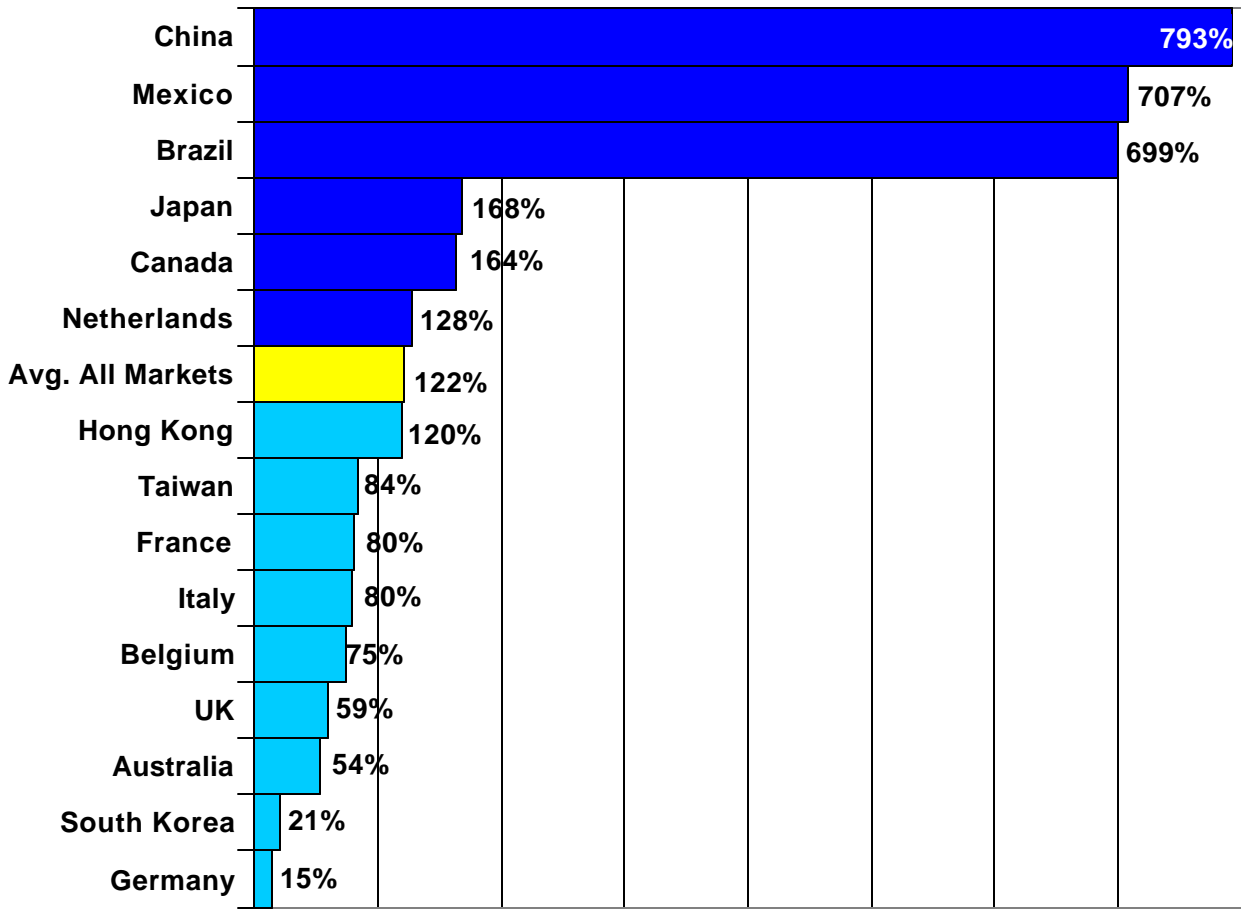
VII. AFRICA (less EGYPT)

Wisconsin exports to Africa have always been small, but declined precipitously during the period both in terms of absolute value and market share. In 1988 Wisconsin exported over \$1 million to 17 separate countries in Africa. In 2001 the number dropped to nine. Africa's market share has dropped from 6.1% to 1.3% in the 14 years in question. In addition, data on "Wisconsin exports" to Africa is skewed because wheat shipments from Minnesota and the Dakotas out of the port of Superior are listed as "Wisconsin exports". In 2001, \$41 million in wheat went to Algeria, \$7.5 million in wheat went to Tunisia and \$2.8 million in wheat went to Morocco. An apparent one-time sale of aircraft parts of \$15.8 million to Algeria and \$9.3 million of bulldozers to Mauritania made up most of the remaining sales to Arab northern Africa. South Africa is Wisconsin's only significant market in sub Saharan Africa.

Wisconsin Exports to Africa In millions			
	1988	2001	% Growth
South Africa	\$43.2	\$54.8	26.90%
Algeria	\$86.0	\$63.2	-26.50%
Morocco	\$10.8	\$12.5	15.70%
Mauritania	\$0.1	\$10.7	1060.00%
Tunisia	\$9.3	\$9.3	0.00%
Nigeria	\$0.9	\$3.8	333.30%
Angola	\$0.3	\$2.1	600.00%
Botswana	\$1.8	\$2.0	11.10%
Ghana	\$6.2	\$1.0	83.90%
Total	\$289.9	\$132.9	-54.20%
Total Africa (- wheat)		\$79.9	

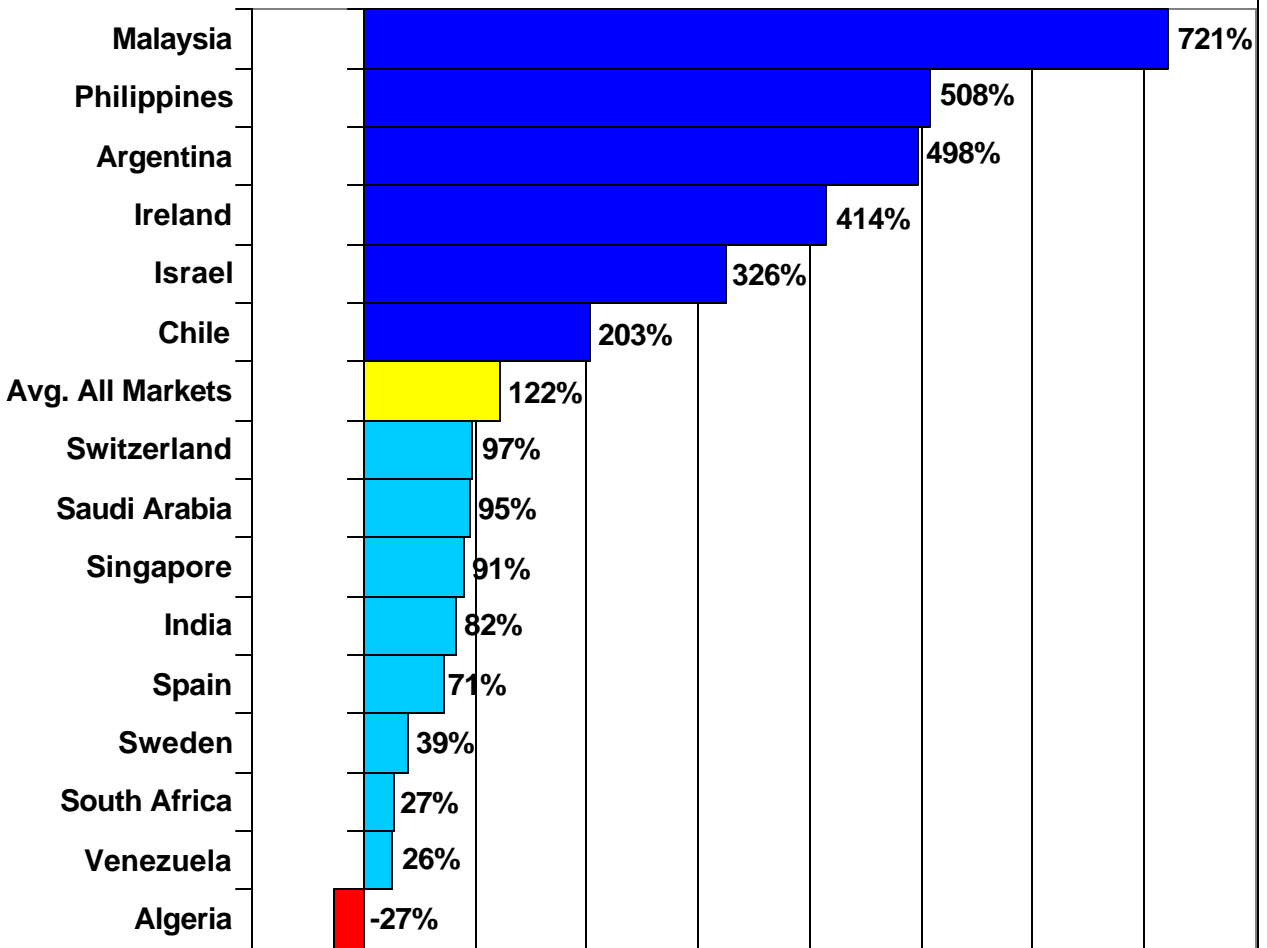
Note: 1988 totals are rounded estimates of all markets. Figures for Egypt are included in Middle East

Wisconsin Export Market Growth (1988-2001) Tier 1

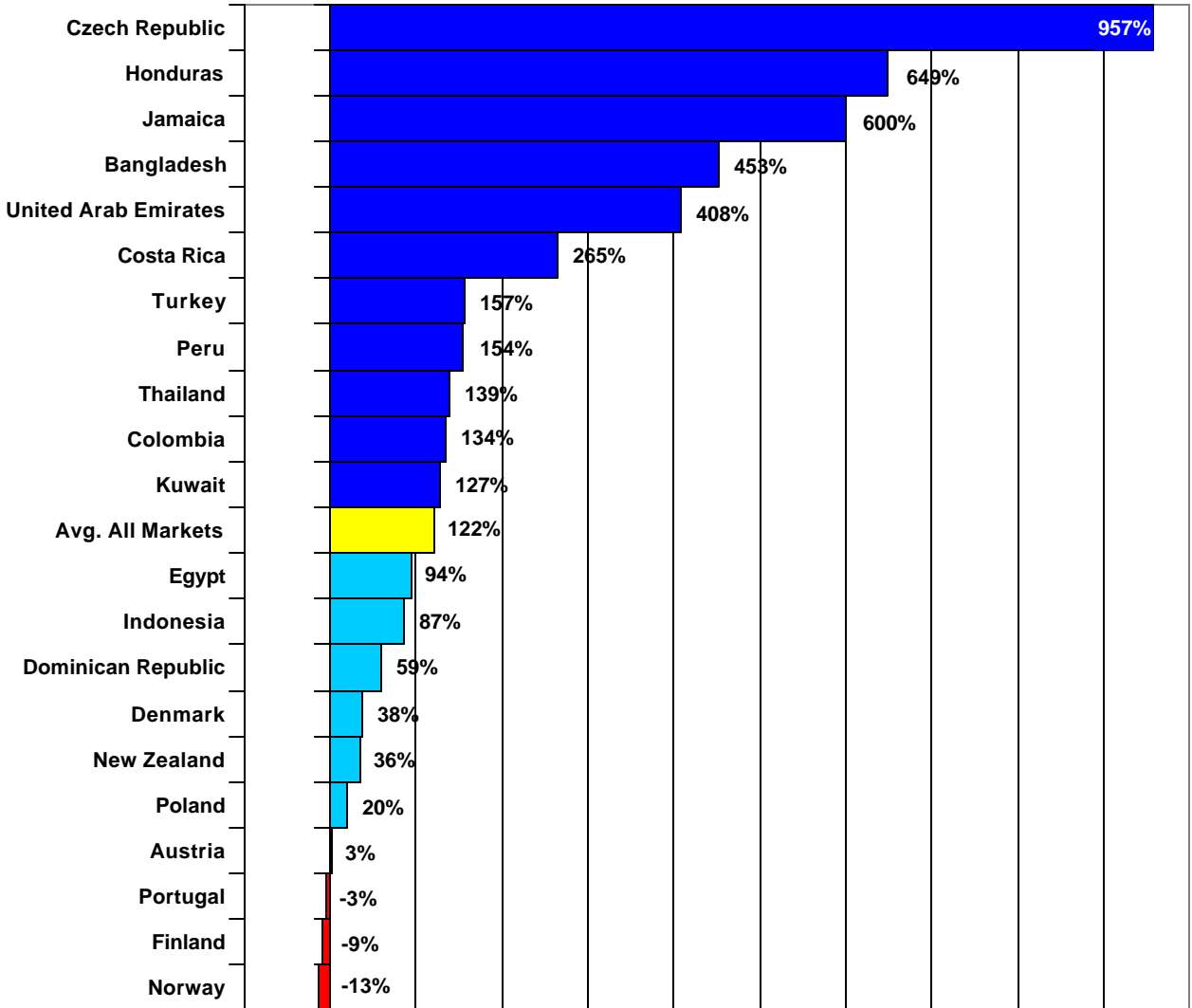


Wisconsin Export Market Growth (1988-2001)

Tier 2



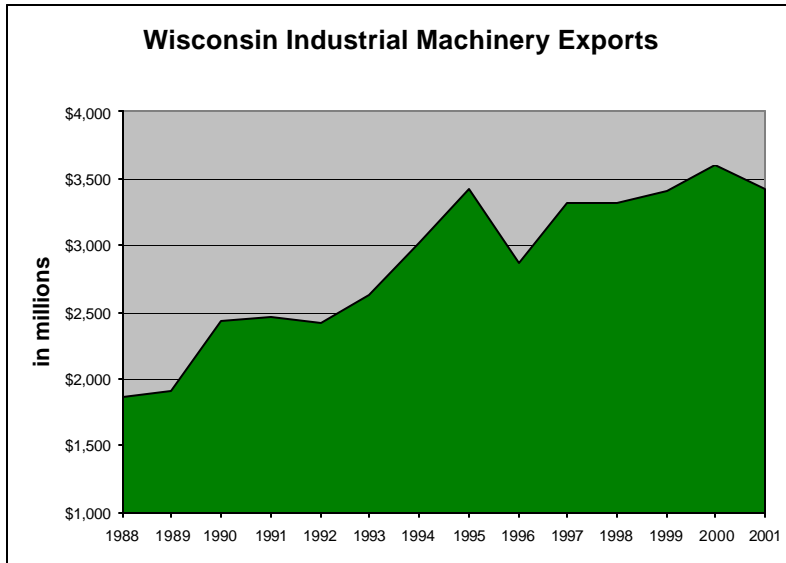
Wisconsin Export Market Growth (1988-2001) Tier 3



Section II - Exports by Major Product Categories

I. INDUSTRIAL MACHINERY & COMPUTER EQUIPMENT

Machinery exports have been and will be for the foreseeable future will continue to be **the largest single component of Wisconsin exports**. Machinery exports, although **increasing by over \$1.5 billion (+83.9%) since 1988**, have shown a **slow but regular decline in their overall share of Wisconsin exports**. Wisconsin typically ranks about 10th among U.S. states in terms of machinery exports and has about 2.4% of total U.S. exports in this category. Exports of



machinery in 2001 accounted for 19.85% of all U.S. exports but 33.61% of Wisconsin exports.

The majority of machinery export growth during the period has been to markets in the Americas with Mexico the fastest growing major market in the Americas. Sales to Asia have declined 8.15% during the period with the exception of China, where sales are up by 49% since 1989.

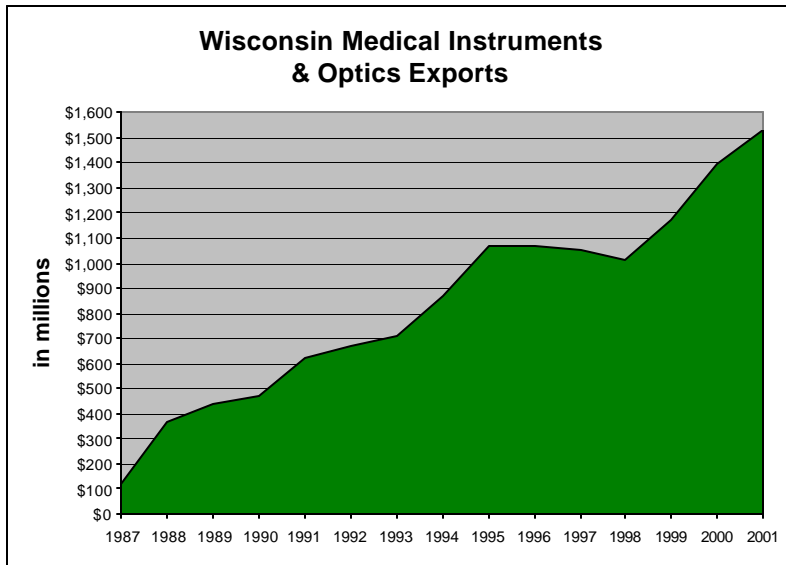
Europe's share of Wisconsin machinery exports is down 28.9% and the Australian and New Zealand share is down 38% since 1989. Factors which have contributed to this decline include the high value of the dollar, intense worldwide competition which has driven prices down sharply, lower sales to Asia following the 1997 financial crisis, strong U.S. domestic demand during the boom of the 90s, and the establishment of subsidiaries by Wisconsin companies in regional markets to meet regional demand.

Major Wisconsin exports in this sector are engines and engine parts, automatic data processing equipment, filters, lawn mowers, mechanical shovels, refrigeration equipment, pumps and paper & pulp making and other specialized production machinery.

Regional Market Share Industrial Machinery			
Market	1989	2001	% Growth
Canada	23.90%	38.11%	59.50%
Mexico	2.69%	6.32%	134.90%
Major Markets in:			
Europe	31.89%	24.74%	-28.90%
Latin America	9.06%	15.54%	71.50%
Asia	13.38%	12.29%	-8.10%
Middle East	1.60%	1.87%	13.10%
Australia & New Zealand	6.76%	4.19%	-38.00%
Note: Analysis begins with 1989 because of lack of comparable figures for 1988			

II. Medical Instruments and Optics

The Medical Instrument and Optics Sector has been **Wisconsin's major success story over the past decade.** Wisconsin's **two medical instrument clusters** in the greater Milwaukee and Madison areas are both world class production centers with 19 subsidiaries of multinational companies maintaining operations in the two locations. GE Medical, which also has production facilities in France, Japan and China, is the largest in-state exporter. **Wisconsin is the largest exporter among U.S. states of x-ray apparatus, electrocardiograph and MRI apparatus and the 3rd largest exporter of ultrasonic scanning apparatus.**



In 1987 Wisconsin exported \$120 million in medical instruments and optics, 3% of its total exports. That amount has increased every year. In 2001, Wisconsin exported \$1.536 billion or 14.6% of all state exports. **Japan and Canada are our two largest markets** and each has been our number one market three times in the past six years. **China and India, the world's two most populous countries, are the fastest-growing major markets.** Asia has overtaken

Europe as our most important regional market. France, Germany, the UK and Brazil are also important export markets. Exports to Latin America (other than Brazil) have not yet shown a major surge.

Since governments are the largest purchasers of medical equipment exports, there is a clear relationship between sales and national economic growth, standard of living and government revenues and policies. Medical instruments are major capital purchases that governments frequently purchase in good years and postpone when budgets are tight.

Regional Market Share Medical Instruments and Optics			
Market	1989	2001	% Growth
Canada	10.51%	15.33%	754.10%
Mexico	2.08%	2.40%	315.90%
NAFTA	12.59%	17.73%	635.00%
Major Markets in:			
Europe	37.40%	29.75%	428.20%
Latin America	---	5.30%	---
Asia	31.22%	35.60%	470.20%
Middle East	2.40%	2.80%	290.50%
Australia & New Zealand	4.60%	2.15%	26.40%

III. Agricultural Exports

“Free trade” is not a characteristic of international trade in agricultural products. **Wisconsin agricultural exports face a complex maze of regulations, quotas and informal barriers worldwide that make exporting difficult.** Examples include the European Union’s restrictions on U.S. beef and genetically modified grains and both European and Canadian restrictions on cheese and other dairy products. These restrictions cause major distortions in trade. For example, Wisconsin is the largest producer and second largest exporter of cheese among U.S. states, but Wisconsin had only \$24.1 million in cheese exports in 2001 and total dairy exports of only \$48 million. These amounted to only 1.8% and 3.6% respectively of Wisconsin’s total agricultural exports of \$1.307 billion.

Wisconsin’s agricultural exports were about 11.9% of all state exports. That figure, however, is misleading because U.S. Census Bureau data for exports is, in most cases, reported as from the port of shipment rather than from the point of production. For example, Wisconsin is credited with \$200.9 million in cereal exports in 2001. Of this, \$153.4 million was wheat grown elsewhere but shipped through Wisconsin ports. Wisconsin is credited with exporting \$45 million in corn (maize) in 2001, but this clearly understates corn exports. Wisconsin’s corn exports, like those of most Midwest states, are included in Louisiana’s total of \$1.765 billion.

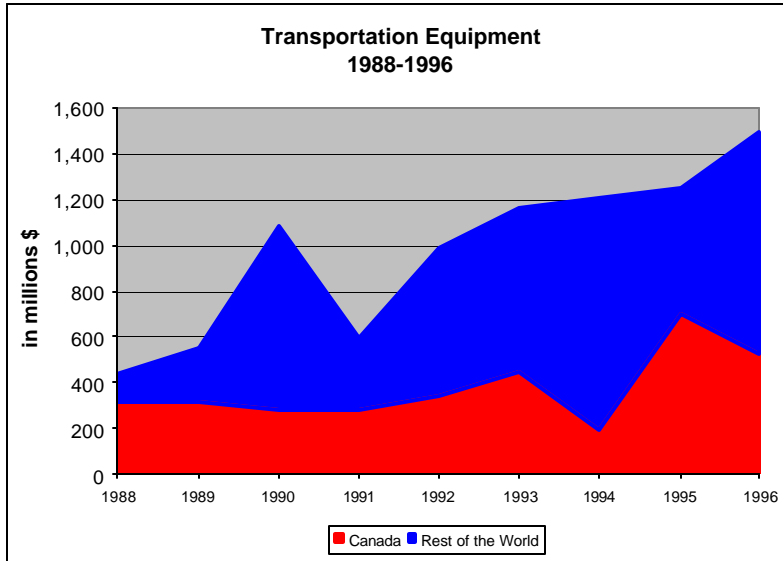
A similar problem exists with soybeans. Wisconsin is listed as exporting \$101.7 million in 2001, while Louisiana is listed at \$3.254 billion. Again, it is unclear as to the original Midwest origins of “Louisiana” exports. Given the above, we can estimate Wisconsin **exports of animal feeds** (corn and sorghum, soybeans, miscellaneous grains and seeds, food waste, and other animal waste) **as a minimum of \$254.4 million.**

Wisconsin exports of meat to Asia have grown rapidly. In 2001, Wisconsin exported \$155.6 million of meat and prepared meat products – primarily chilled beef, frozen beef, beef by-products and sausage. Major customers for beef are Japan and Korea while Canada and Japan are the largest export markets for sausage. **Wisconsin is the nation’s second largest exporter of sausage.** Hide and skins exports, primarily to Korea and China, totaled an additional \$130.8 million in 2001.

Wood products (not including paper and pulp) totaled \$112.7 million. Four countries took 80.8% of all exports. Over two-thirds went to NAFTA partners Canada (63.2%) and Mexico (4.2%), with the UK (8.7%) and Japan (4.7%), the only other large markets.

Exports of **baking related products** (cereals, flour and starch) have grown very rapidly in recent years and totaled \$78.6 million in 2001. This was **a 240% increase over 1996.** **Wisconsin is the nation’s largest exporter of canned sweet corn** with exports of \$41.6 million and overall exports of fresh, dried, canned and frozen vegetables totaled \$67.1 million in 2001. Beverage exports totaled \$27.2 million of which beer comprised \$20.6 million. **Wisconsin is United States’ third largest beer exporter.** Wisconsin is the **largest U.S. state exporter of bovine semen** (\$24.4 million). Wisconsin **ginseng exports** of \$13.4 million **were 52.3% of all U.S. ginseng exports.**

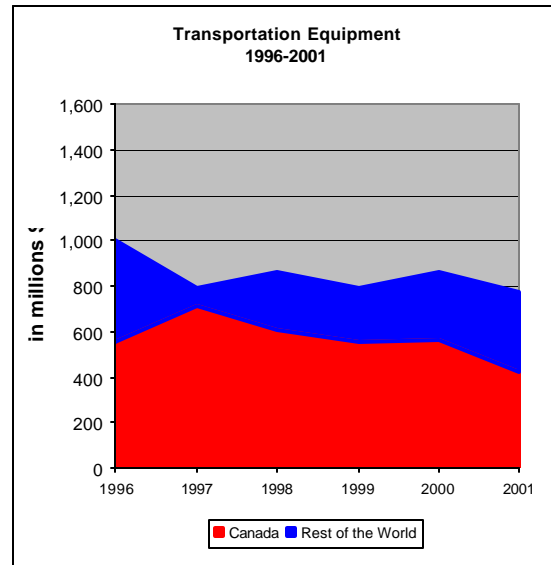
IV. Transportation Equipment



Obtaining comparable data for the 1988-2002 period was difficult due to federal changes in how this category was defined, and two different sets of data for the earlier and later part of the period. The problem is compounded by wide swings in annual sales to individual national markets, and the fact that the motor vehicle sector is a global industry. Factors such as the relative value of currencies, internal changes in production in particular plants (e.g.; minivans to pickup trucks) or

entry into production in new markets (e.g.; Mercedes and BMW U.S. assembly operations) have important impacts on the data. An important growth in vehicle part exports to Mexico in the initial years following NAFTA, presumably reflecting exports of parts for assembly in Mexico, is evident.

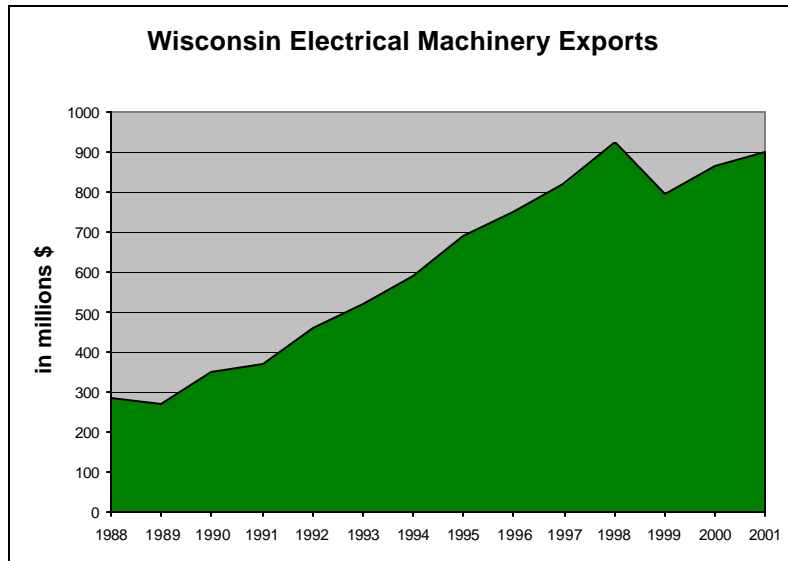
Most Wisconsin passenger vehicle exports go to Canada, but there is an important niche market for large passenger vehicles in the states of the Arabian Peninsula. Primary markets for passenger vehicle parts are Canada and Mexico, with good small markets in France, Germany and the United Kingdom. Canada is the primary market for tractors, with good small markets in Australia, France, the UK, Germany and, in 2001, Turkmenistan. The majority of trailer exports is to our NAFTA partners. Truck exports are primarily to Canada and the Persian Gulf region, but there is some significant export trade with France, Germany and the UK.



Regional Market Share Transportation Equipment						
Market	1996	1997	1998	1999	2000	2001
Canada	44.13%	51.50%	61.05%	69.90%	65.46%	55.16%
Mexico	0.75%	1.90%	3.87%	4.10%	3.77%	5.70%
NAFTA	44.88%	53.40%	64.92%	74.00%	69.23%	60.86%
Europe	19.18%	17.19%	11.26%	10.44%	12.68%	17.68%
Middle East	24.16%	12.80%	12.15%	8.83%	6.84%	12.08%

V. Electrical Machinery

Wisconsin exports of electrical machinery grew by 217.3% from 1988 to 2001. They comprised about 6.4% of all Wisconsin exports during the first half of the period and 8.2% during the second half of the period. Canada is a market for 25-30% of all electrical machinery exports while Mexico typically takes between 7% and 9%. The United Kingdom is responsible for between 7% and 10% of all exports.



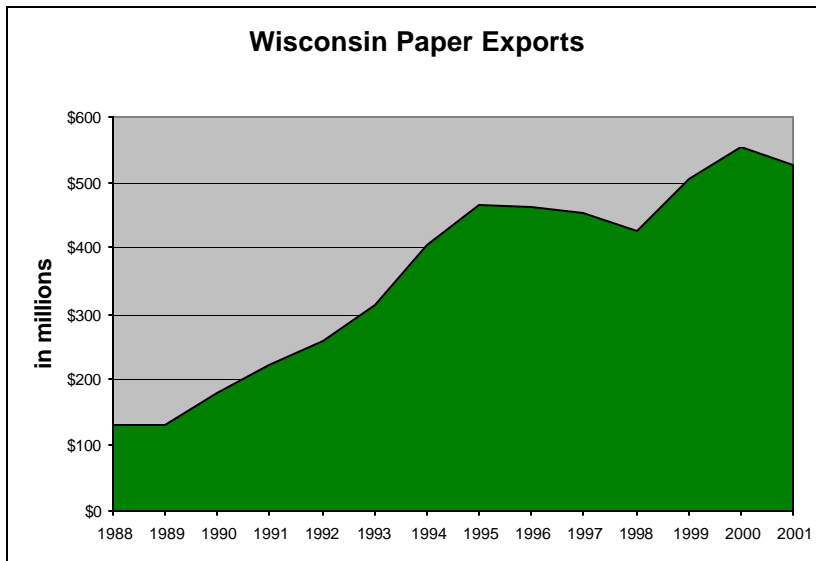
Wisconsin's exports of electrical machinery differ dramatically from the overall U.S. picture. Almost half of all U.S. exports fall into three categories - integrated circuits, telecommunications apparatus and transmission apparatus. Texas and California combined provide about half of all U.S. exports in these categories. Integrated circuits comprised 34.4% of all U.S. exports of electrical machinery in 2001 but only 2.9% of Wisconsin exports. Telecommunications

apparatus was the second-largest national export; Wisconsin contributed only 0.36% of that total. Transmission apparatus for television, radio and telephone was the third-largest export and Wisconsin contributed 0.02% to the national total. Wisconsin is also not an important exporter of TV, radio or radar apparatus or light emitting diodes. For better or worse, **Wisconsin was not part of the global telecommunications boom and bust of the past decade.**

Although Wisconsin is only 25th overall among U.S. states in exports of electrical machinery, we are an **important exporter in many subsectors. Important subsectors, followed by Wisconsin's national rank, are:**

- hand tools (#3)**
- lasers (#4)**
- batteries (#5)**
- automatic data processing (#7)**
- storage batteries (#7)**
- recorded sound media (#8)**
- control boards & panels (#8)**
- electrical generators and motors, (#9)**
- electrical appliances (#11)**

VI. Paper and Pulp



Wisconsin exports of paper and pulp increased by 299.1% from 1988 to 2001 and the industry's overall share of Wisconsin exports has risen from 2.8% to 5.0%. Exports have increasingly gone to our NAFTA partners, Canada and Mexico, who together accounted for 80.67% of our \$429.4 million in 2001 exports. In terms of the household paper products subcategory, sales to Canada and Mexico comprised 93.66% of all

exports. By comparison, the UK, the third largest market in this subcategory, accounted for only 1.99% of total exports and less than \$10.5 million in 2001 sales. Writing papers, however, are the exception and are shipped globally rather than just to our North American neighbors.

VII. Plastics & Rubber Products

Exports of plastic and rubber products have increased by 619% since 1988. Almost all recent growth in this category has been in the plastics portion of the category. Plastics now account for \$427.6 million, or 4.08% of all Wisconsin exports. About 55-60% of all plastics exports go to our NAFTA partners. Over a quarter of worldwide exports (\$116.4 million) are plates, sheets, film, foil and strips of plastic. About 60% of this total goes to Canada, 20% to Western Europe and another 9% to Asia. Plastic containers accounted for \$72.4 million in 2001 exports with Canada (52.3%), Japan (11.1%) and Mexico (7.1%) the most important markets. Rubber products amount to \$27.3 million and have remained static in recent years.

