

# Global Commerce

Tennessee and the International Economy

## The Impact of Foreign Exports on Tennessee Counties

by Raman Vishwanathan

Like the rest of the United States, Tennessee is becoming an increasingly active participant in today's global economy. The share of foreign exports of goods and services in Tennessee's economy has been growing steadily, and foreign trade is becoming an increasingly important part of local economies across the state. This article is based on the first research to examine the magnitude of foreign exports in various sectors of the Tennessee economy at the county level. The models in this study were constructed with "IMPLAN," an input-output model that analyzes interdependencies among industries in a county economy.

The IMPLAN model, with 1995 data, was used to simulate the economic structure of each county. Both direct and indirect sales of goods and services that result in foreign exports were taken into account. Indirect exports are products or services produced in one county that are shipped to another county where they are used in the production of other goods or services that are then exported. Thus, some of the counties which may not actually have any reported direct exporters may actually have hidden export figures as a result of their indirect exports.

### Profile of Tennessee Exports

In 1995, Tennessee's foreign exports (both direct and indirect) stood at \$17.5 billion. Two-thirds were from metro areas. Tennessee's total foreign exports were 16 percent of its GDP, making them an important part of the state economy. Tennessee ranked 20th overall amongst all the states in total merchandise exports. The manufacturing sector constituted two-thirds of these exports. On average an export worker's annual compensation was \$28,300—12 percent more than that of the non-export sector worker,

Table 1. Top Five Exporting Counties in Key Sectors

Sector	County				
Agriculture	Haywood	Gibson	Dyer	Crockett	Tipton
Mining	Knox	Davidson	Weakley	Campbell	Shelby
Construction	Shelby	Davidson	Knox	Hamilton	Sullivan
Manufacturing	Shelby	Davidson	Rutherford	Maury	Sullivan
TCPU*	Shelby	Davidson	Hamilton	Knox	Sullivan
Trade	Shelby	Davidson	Knox	Hamilton	Rutherford
Services	Davidson	Shelby	Rutherford	Knox	Hamilton

\* transportation, communications, and utilities

who had average compensation of \$25,200. These exports resulted in a total economic (or output) impact on state gross domestic product of \$31.2 billion. In other words, every additional dollar in exports increased the state's total economic output by \$1.70.

### Impact

#### Metropolitan Counties

The 27 counties in Tennessee classified as metropolitan exported \$11.7 billion in goods and services. These exports generated total employment (direct and indirect/induced) of 188,837, of which 87,281 jobs were *direct export employment*, while the remaining 101,556 jobs were *supporting export employment*. On average, in metro counties, an

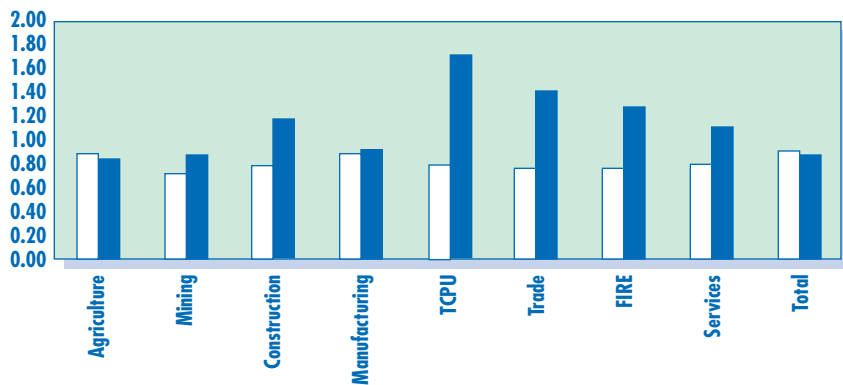
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In 1995, every additional dollar in exports increased the state's total economic output by \$1.70.

Table 2. Comparison of Key Statistics Between Tennessee, Metro, and Non-Metro Counties

	Tennessee	Metro	Non-Metro
Number of Counties	95	27	68
GDP	\$110,494,860,000	\$82,304,080,000	\$28,190,780,000
Population	5,246,723	3,567,147	1,679,576
Per Cap GDP	\$21,060	\$23,073	\$16,784
Foreign Exports	\$17,770,000,000	\$11,878,500,000	\$5,891,500,000
Per Cap Exports	\$3,387	\$3,330	\$3,508
Exports as % of GDP	16%	14%	21%
Total Employment	3,144,300	2,301,500	842,800

**Figure 1. Ratio of Total Output Impact Per Dollar of Export (Metro and Non-Metro) to Tennessee Average**



## Impact

*continued from front*

export worker’s annual compensation of \$31,394 was 18 percent more than the non-export sector worker’s (\$26,496). Exports of \$11.7 resulted in a total economic impact of \$19.6 billion, and the impact on total value added was \$10.3 billion.

### Non-Metro Counties

In 1995, 68 counties in Tennessee were classified as non-metropolitan. Together they had total exports of \$5.8 billion. The non-metro counties, as a result of their export activities, generated a total employment (direct and indirect) of 104,548. Of these, 51,414 jobs were “direct export employment,” while the remaining 53,134 jobs were “supporting export employment.” Manufacturing and agriculture provided the major share of export employment, at 63 percent and 24 percent, respectively.

Agriculture, regardless of its high export orientation, accounts for less than 6 percent of total exports by non-metro counties. Nearly two-thirds of export employment in non-metro counties was in manufacturing. On average, in non-metro counties, an export worker’s annual compensation of \$22,805 was only 6 percent more than the non-export worker’s of

**In 1995, an export worker’s annual compensation was 18 percent more than the non-export worker’s in metro counties, but only 6 percent more in non-metro counties.**

**Table 3. Top Ten Exporting Counties in Agriculture**

County Name	Agriculture
Haywood	\$31,414,930
Gibson	\$27,127,250
Dyer	\$26,515,340
Crockett	\$21,824,770
Tipton	\$21,578,810
Obion	\$21,512,710
Lauderdale	\$20,240,000
Robertson	\$18,866,070
Fayette	\$16,005,490
Weakley	\$14,345,850

**Table 4. Top Ten Exporting Counties in Total Exports**

County Name	Total Exports
Shelby	\$3,438,252,388
Davidson	\$1,888,855,797
Knox	\$865,198,521
Hamilton	\$834,718,699
Rutherford	\$808,077,482
Sullivan	\$752,956,066
McNairy	\$718,544,658
Montgomery	\$432,341,144
Hamblen	\$346,194,333
Greene	\$329,584,611

\$21,468. Exports of \$5.9 billion in goods and services resulted in a total economic impact of \$9.5 billion, and the impact on total value added was \$4.1 billion.

### Comparison between Metro and Non-Metro Counties

Some key statistics for metro and non-metro counties and the state are shown in Table 2. In almost all sectors, non-metro counties had a higher economic impact per dollar of exports than did metro counties, but for the entire economy, the economic impact per dollar of exports was slightly less for non-metro than metro counties.

Another way to examine the difference in the economic impact of exports in metro and non-metro areas is to compare each against the state average. Figure 1 shows the deviations in the size of the impact from the state figure. A ratio of one means that the county figures are the same as the state figure.

### Conclusion

If Tennessee is to grow and prosper in the midst of an increasingly global economy, it must capture its fair share of the U.S. export market. Tennessee businesses must be poised to reap the benefits of increasing export opportunities as a result of the opening up of several emerging markets. In this study we found that foreign exports significantly benefit county economies in several ways and that export-related employment pays higher wages than non-export related employment within the same sector.

Regarding the differences between metropolitan and non-metropolitan areas of Tennessee in terms of exports, there seem to be only minor differences except in export wages: the metro export wages are estimated to be over 35 percent higher than those in non-metro areas. However, this gap in income is also true in non-export related wages: metro county wages are 23 percent higher than non-metro county wages.

In the metro areas, about 8 percent of total employment was involved in export, as compared to nearly 12 percent in the non-metro areas. In terms of per capita exports, rural and metro counties export at almost the same rates. Firms in non-metro counties are almost as likely to be exporting as those in metro counties but at slightly lower volumes. This suggests no real distinctions between the type of county (metro or rural) and its ability to participate in the global economy. ■

*Raman Vishwanathan is a research assistant in the Department of Agricultural Economics at the University of Kentucky. He acknowledges the help of Dr. David Freshwater, professor of agricultural economics at University of Kentucky, and the support of TVA Rural Studies. Staff Paper 99-5 of the TVA Rural Studies Program contains the full report of his findings.*

## 4th Quarter 1999

Food exports soared in the fourth quarter.

## Tennessee's Largest Export Sectors

	Exports	Change from Last Year	Change from Last Quarter
Transportation Equipment	\$595,111,698	13.1%	13.6%
Industrial Machinery	\$397,346,090	12.9%	3.3%
Chemicals	\$379,066,941	8.8%	-1.5%
Electronics	\$302,465,349	4.7%	7.5%
Industrial and Medical Instruments	\$187,414,749	6.0%	15.2%
Food and Food Products	\$182,292,778	60.2%	46.9%

## 4th Quarter 1999

It was a tough year for the state's furniture industry.

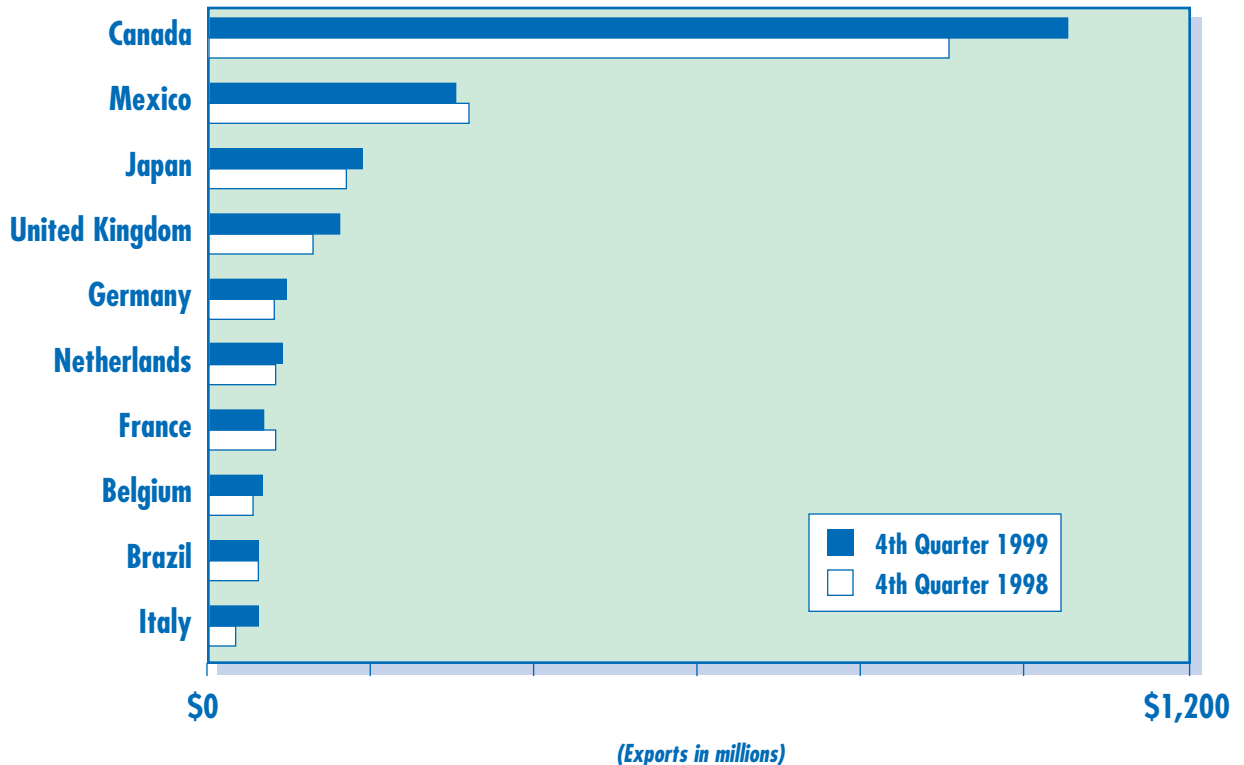
## Greatest Growth and Decline in Exports by Industry

(among sectors averaging exports of more than \$2 million per quarter)

	Value of Exports	Growth	Decline
<b>SECTORS WITH THE GREATEST GROWTH</b>			
Livestock	\$4,018,228	127.9%	
Metal Mining	\$6,948,318	125.4%	
Fabricated Metals	\$144,142,597	76.9%	
Food and Kindred Products	\$182,292,778	60.1%	
Environmental Quality	\$9,180,468	24.9%	
<b>SECTORS WITH THE GREATEST DECLINE</b>			
Furniture and Fixtures	\$22,993,645		-61.5%
Agricultural Crops	\$80,392,381		-44.4%
Primary Metals	\$39,004,924		-32.3%
Apparels	\$46,228,611		-26.0%
Printing and Publishing	\$40,656,675		-5.0%

Italy makes its first appearance as one of the state's top ten markets.

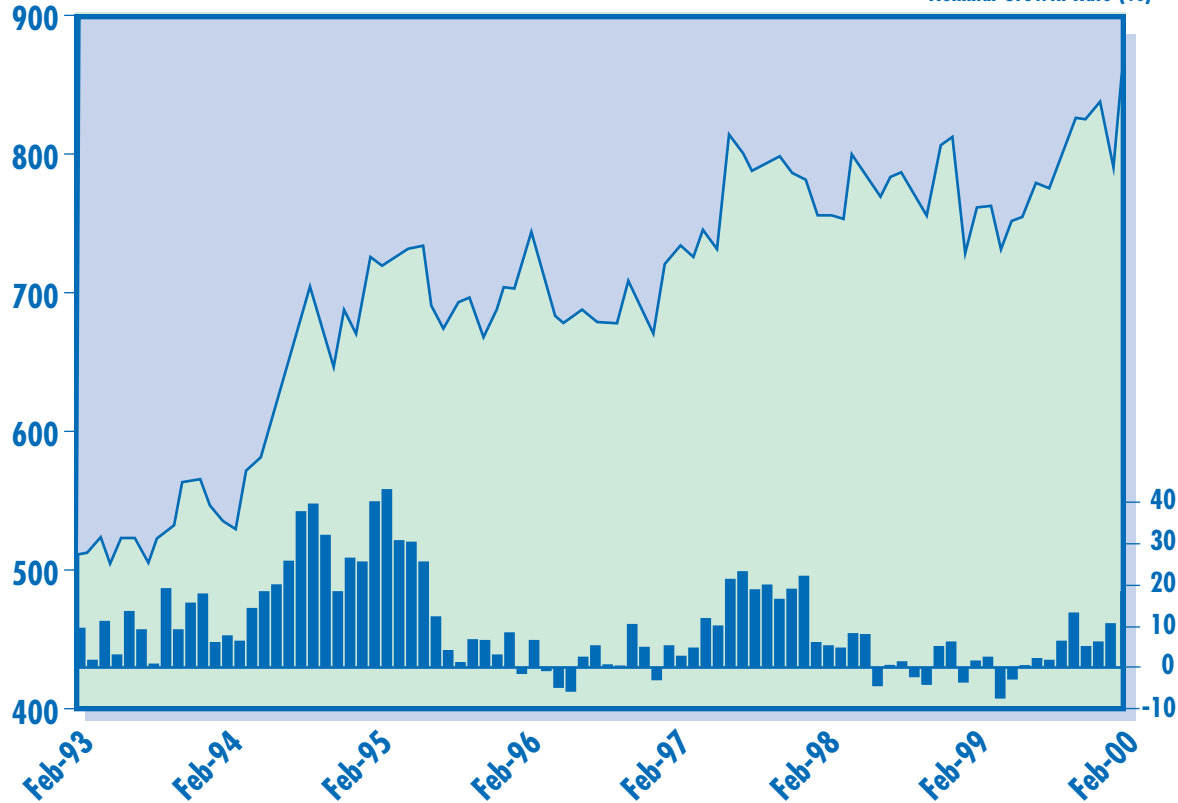
## Tennessee's Leading Trade Partners



# Tennessee's Monthly Exports

Exports in \$ Millions

Nominal Growth Rate (%)



The year ended on a strong note.

(Seasonally adjusted, expressed in 1993 dollars)

4th Quarter 1999

## GlobalCommerce

*Global Commerce: Tennessee and the International Economy*, published quarterly by Middle Tennessee State University's Business and Economic Research Center, is available free of charge to interested individuals and institutions.

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AA239-0400

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## Fastest Changing Export Destinations

(among countries averaging more than \$2 million in sales per quarter)

	Value of Exports	Gain	Decline
<b>COUNTRIES WITH THE GREATEST GROWTH</b>			
Russia	\$4,480,875	726.8%	
Austria	\$9,311,403	247.5%	
Turkey	\$32,639,668	174.2%	
Costa Rica	\$11,000,711	95.8%	
Egypt	\$9,528,306	89.9%	
<b>COUNTRIES WITH THE GREATEST DECLINE</b>			
Ecuador	\$1,282,008		-86.6%
Norway	\$1,437,309		-52.7%
El Salvador	\$6,766,015		-47.6%
Poland	\$2,000,484		-42.9%
Hong Kong	\$55,092,641		-37.5%

# Tennessee International Trade Report

**The strong fourth quarter saved the state from turning in what would have been its first annual trade decline in memory.**

The fourth quarter was, in dollar terms, the biggest ever for state exporters. Tennessee foreign sales were a record \$2.939 billion. This was an increase of 9.36 percent and made up for many of the state's weak figures earlier in the year. Total 1999 exports were valued at \$10.797 billion, a 2.43 percent increase from 1998. The strong fourth quarter saved the state from turning in what would have been the first annual trade decline in memory.

Once again, it was the NAFTA market that led the way. Sales to Canada exceeded the billion-dollar mark for only the second quarter ever, gaining 16 percent from a year ago. This was enough to cover a 3.9 percent decline in exports to Mexico (a loss of \$12 million).

Automotive-related products accounted for the overall positive numbers: industry-related sales increased close to \$100 million dollars in the NAFTA market. This more than offset losses in apparel, primary metals, and chemical exports to Mexico.

Sales to the rest of the world grew more slowly but were still up a little over 8 percent from last year. European markets finally turned positive after three slow quarters. Exports to the European Union were up 18 percent, with the U.K. (25.1 percent) and Italy (86.5 percent) leading the way. Among the major markets, only France posted lower numbers for the

quarter. Industrial instruments, industrial machinery, and chemicals were sectors that performed particularly well throughout Europe. Japan also turned in some good numbers, especially given its continued economic recession. At \$192.5 million, sales to Japan were up 12.2 percent.

Automotive-related exports again, as well as a big increase in food sales, account for these numbers.

The East Asian emerging markets continued their recovery. The state posted big gains in Korea and Indonesia.

Unfortunately, stiff losses in the Chinese Economic Area, where exports were off 40 percent, put total Asian trade numbers in the red.

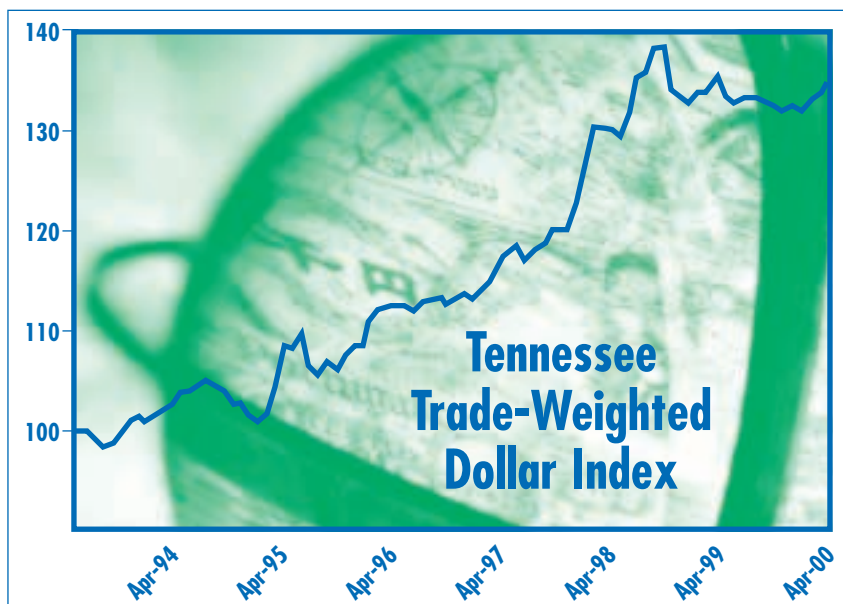
Gains in industrial machinery could not overcome losses in chemical and

electronic sales. In spite of strong numbers in the Southern Cone countries, Latin American sales were anemic. Tennessee exports were down 4.4 percent to \$189 million. Much of this was due to sizable losses in Central America and Ecuador and in transportation exports across the continent. There are two final bright notes: Russia reappeared on the export radar screen, with the largest trade increase of any Tennessee market, and exports to Africa were up a solid 22.3 percent.

Sectorally, the patterns of the past several years continued. Agriculture turned in another poor quarter despite an increase in livestock exports due to a big sale in the Dominican Republic because of large losses in Canada and Mexico.

Huge losses in Canada also continued the woes of the furniture industry, while apparels were hit hard by round-the-world losses. Among the state's largest export sectors, chemicals sales were flat, with gains in Canada and much of Asia equaled by losses in Mexico and Hong Kong. The sectors associated with the auto industry all did well. A large jump in sales to Italy, along with continuing increases in NAFTA, account for the very good performance of instrument exports for the quarter. Finally, big gains in Japan, Korea, and Europe combined to make the food industry the star sector of the quarter, as it posted a gain in exports of over 60 percent.

Early signs indicate that this recent surge in Tennessee exports is continuing into the first quarter of 2000. February's foreign sales were up 17 percent, after a 9 percent January gain. ■






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## INTERNATIONAL

The Tennessee International Trade Database contains extensive information on virtually all facets of Tennessee's global involvement. It includes statistics on the state's international trade; Global Commerce: Tennessee in the International Economy - a quarterly report; sources of local, state, and federal trade assistance; and links to other Internet sites that contain valuable information on international trade and investment.

The database will better allow businesses, academics, local and state governments, and interested individuals to better understand and analyze the economic impact of international trade and investment flows on the region.

Email questions, comments, or suggestions to [slivings@mtsu.edu](mailto:slivings@mtsu.edu).

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