

Global Commerce

Tennessee and the International Economy

Export Competitiveness

Comparing Tennessee to the Nation

by Steven G. Livingston

The Tennessee economy is more reliant on exports than that of most American states, and this reliance is increasing. Manufactured exports have more than doubled their share of Tennessee's Gross State Product over the past decade. Only seven other states have seen a similar growth in the relative size of their export sectors. The result is that, today, more than one in 10 dollars of state production is ultimately bound for export. These numbers indicate that the past decade has been a good one, by and large, for Tennessee exporters. As the economic impact of the state's exports grows, it is worth examining whether this success will continue. How well can we expect Tennessee to perform in global markets in the new century?

This is a huge question, and we can only scratch the surface here. However, we do have some indica-

Figure 1. Export Mix: U.S. and Tennessee

(Industries with more than 10 percent of exports)

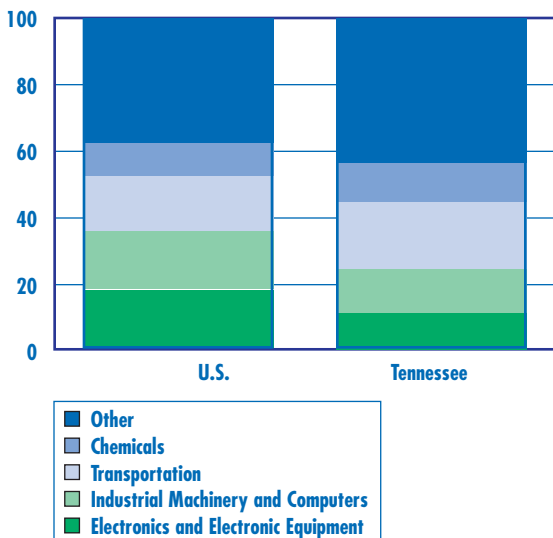
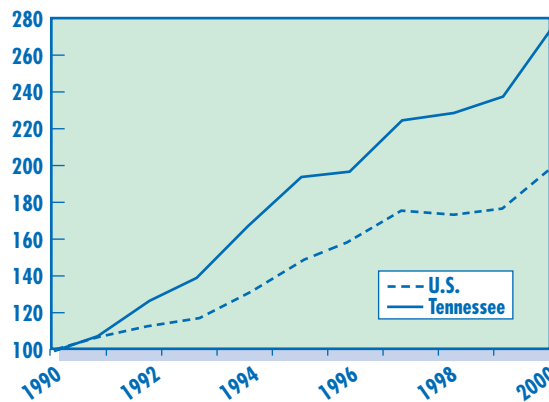


Figure 2. Export Growth Index: Tennessee vs. U.S.
(nominal \$)



tors of how well positioned Tennessee is to compete in the coming years. First, we can review the industry mix. Compared to other parts of the U.S., does Tennessee contain the industries best positioned to export? Second, we can consider the destination of Tennessee's exports. Is the state most active in the foreign markets where American exports have been doing the best? Third, we can compare the competitiveness of Tennessee's industries against the nation's performance.

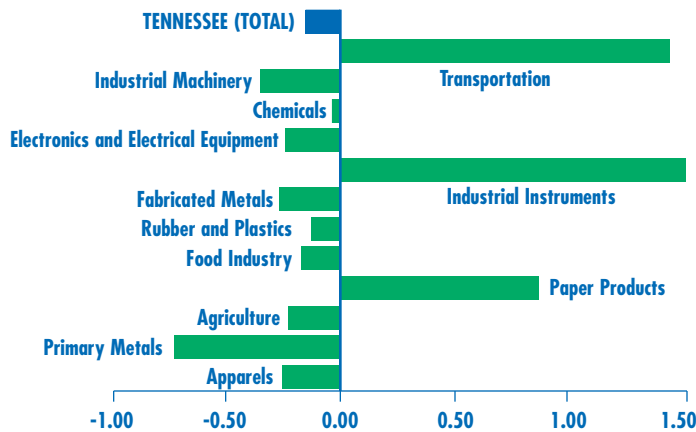
Industry mix can be reviewed from two perspectives. Are Tennessee's exports located in the industrial sectors that nationally are the most export oriented? Does Tennessee contain the export sectors that nationally are the fastest growing? In the case of the former, Tennessee's profile is broadly similar to that of the nation. More than 62 percent of America's exports come from four industries. These same four comprise 56 percent of Tennessee's exports. State exports are more concentrated in the transportation sector, America's premier export sector, than are the nation's, but Tennessee has relatively fewer exports in the electrical and industrial equipment sectors.

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How well can we expect Tennessee to perform in global markets? Does the state contain the industries best positioned to export? Is the state most active in the foreign markets where American exports have been doing the best?

¹ For this, and measures of destination and competitiveness used inside, see Cletus C. Coughlin and Patricia S. Pollard, *Comparing Manufacturing Export Growth Across States: What Accounts for the Differences?* Federal Reserve Bank of St. Louis Review, Jan/Feb 2001.

Figure 3. Export-Directedness: Tennessee Compared to the U.S. by Industry



Competitiveness

continued from front

Overall, Tennessee exports are focused in fewer industrial sectors than are the rest of America's exports. What is striking is how similar the state looks to the nation. In fact, only three states have an industry profile closer to the national profile than does Tennessee.¹ Over the past decade, Tennessee has neared the exact national mix more rapidly than have most other states.

Are Tennessee's exports in the sectors where we can expect the best future growth? Let's look at the nine industrial sectors that have substantially exceeded overall U.S. export growth over the past 10 years. These are the high growth sectors. From this baseline, Tennessee appears to be in good shape, although it could be doing better. Nationally, 54 percent of exports are found in these nine sectors. The Tennessee figure is 46 percent. Tennessee's weakness in the electrical and industrial machinery sectors accounts for the lower number. Six of the other seven high-growth export sectors are more highly concentrated in Tennessee than in the nation as a whole.

We can analyze the impact of foreign markets in the same manner. The big picture is that the destinations of Tennessee exports are very similar to those of the nation. In fact, only New Jersey and North Carolina more closely match the national profile. The

The numbers suggest that Tennessee continues to lag in the export orientation of its firms.

differences, while slight, may be important.

Tennessee exports a significantly higher portion of products (31 percent) to Canada than does the nation (20.5 percent), while it exports a relatively smaller percentage of its exports to Asia (15 percent versus 24.9 percent).

Does this difference in export markets help or hurt the state? Recent American export growth has been highest in the Americas, and gains to Canada have exceeded those to Asia. To this extent, Tennessee appears to hold the better position, at least for the near future.

Looking at the mix of markets and industries, it appears that Tennessee's future export growth should approximately mirror that of the United States. A final factor to consider is industry competitiveness. With the important caveat that it is impossible to provide any easy measurement of competitiveness, we do have two sets of numbers from which to draw some inferences. The first is what we might call "export directedness." A measure of an industry's export directedness is its exports as a percentage of its total production. Compared to the nation, do Tennessee industries sell more or less of their production overseas? We can presume that a globally competitive industry would at least meet the national average on this measure. We can then develop an index. If the national industry exports more of its production than the Tennessee industry, the Tennessee industry will have a negative index number. It is less export-directed than the national industry. Figure 3 shows the index numbers for Tennessee's top 12 industrial sectors.

Figure 5. Comparing the U.S. and Tennessee

Exports in the fastest growing export sectors

	Annual Growth Rate	% U.S. Exports	% Tenn. Exports
Electronics, Electrical Equip.	12.40%	18.22%	13.20%
Apparel	12.40%	1.26%	1.72%
Rubber, Plastics	11.40%	2.50%	4.58%
Indust. Instruments	9.00%	6.40%	5.74%
Textiles	8.70%	1.18%	1.61%
Stone, Clay, Glass	8.40%	1.08%	1.53%
Fabricated Metals	8.10%	3.30%	5.46%

Figure 4. Market Profiles: Tennessee vs. the U.S.

	Compound Annual Growth Rate (1990-2000)	Total U.S. Exports (\$ billions)	% U.S. Exports	% Tenn. Exports
ASEAN*	9.51%	\$47	5.47%	3.47%
Asian NICs	7.60%	\$85	9.88%	6.14%
Canada	7.84%	\$176	20.57%	31.02%
Caribbean	6.30%	\$11	1.33%	0.81%
China	12.95%	\$16	1.89%	0.12%
Japan	2.99%	\$65	7.61%	4.75%

* Association of Southeast Asian Nations

The numbers suggest that Tennessee continues to lag in the export orientation of its firms. There are three major exceptions. The transportation industry, the state's largest sector, is unusually export oriented. Tennessee's paper products industry and its industrial, scientific, and medical instrument firms are also more internationally focused than their national counterparts. Elsewhere, Tennessee firms are typically less focused on overseas sales. Industrial machinery (the sector that includes computers) and

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1st Quarter 2001

Gains were concentrated in the electronics sector.

1st Quarter 2001

A huge initial purchase of toilet paper by Japan led this product to post the best growth numbers of any export for the quarter.

The NAFTA markets slowed markedly.

Tennessee's Largest Export Sectors

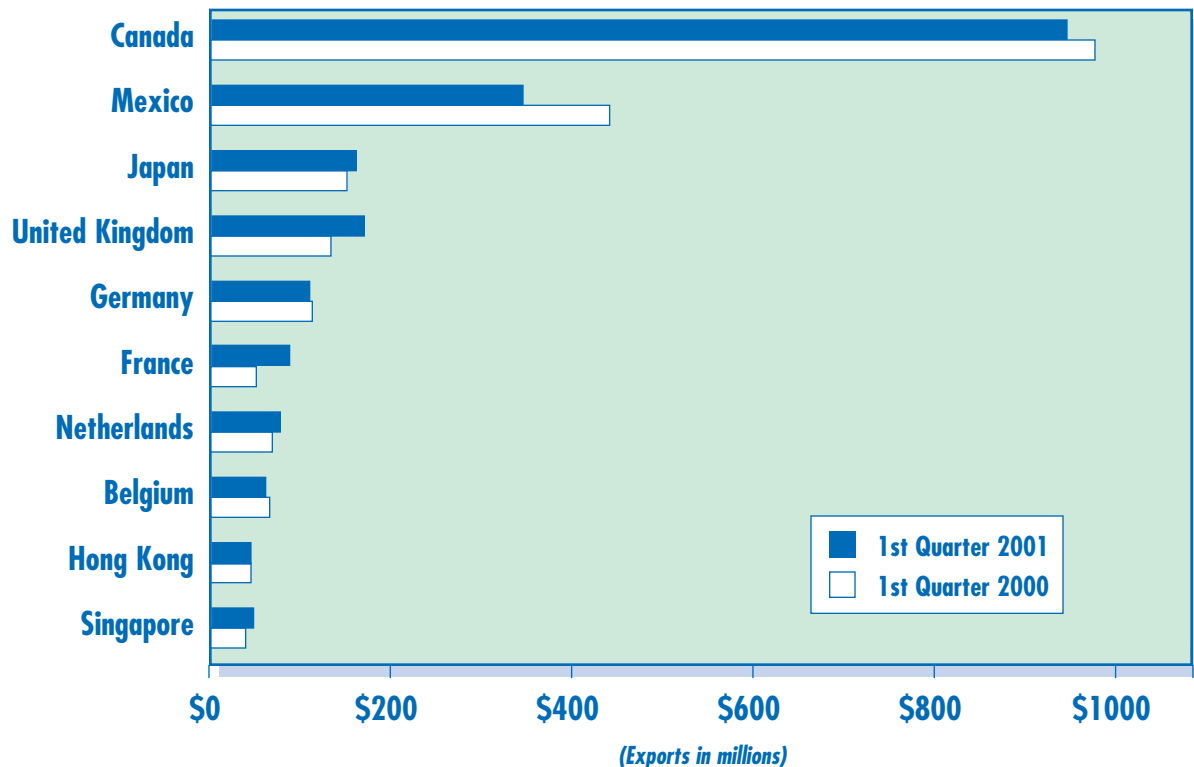
	Exports	Change from Last Year	Change from Last Quarter
Transportation Equipment	\$584,287,996	-7.3%	-6.5%
Computer and Electronic Products	\$371,751,350	16.4%	-3.2%
Chemicals	\$343,106,539	4.8%	-6.5%
Non-Electrical Machinery	\$327,171,266	4.0%	7.5%
Electrical Equipment and Appliances	\$130,348,263	7.9%	-14.5%
Paper	\$129,804,937	15.9%	7.1%

What's Hot and What's Not?

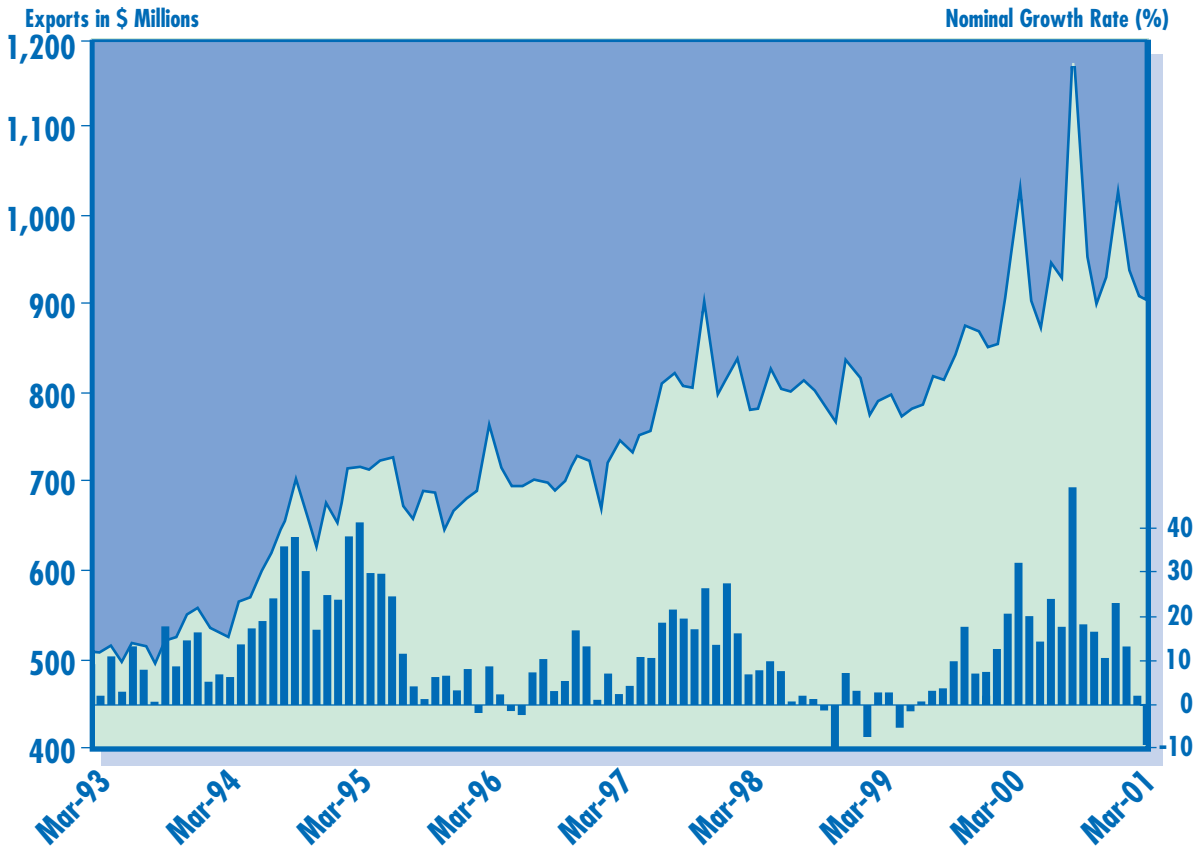
(among Tennessee's top 100 exported goods)

	Value of Exports	Growth	Decline
PRODUCTS WITH THE GREATEST GROWTH			
Toilet Paper	\$14,535,006	25,325.3%	
Telephone Switching Apparatus	\$74,997,513	338.4%	
Polymers	\$6,946,001	207.7%	
Printers	\$17,506,630	204.3%	
Aircraft Parts	\$34,040,538	198.0%	
PRODUCTS WITH THE GREATEST DECLINE			
Prostheses	\$2,809,203		-83.8%
Road Tractors	\$3,676,392		-80.2%
Gear Boxes	\$4,342,362		-65.3%
Wool Jackets and Blazers	\$2,514,328		-63.0%
Polamides	\$3,645,316		-60.8%

Tennessee's Leading Trade Partners



Tennessee's Monthly Exports



March numbers were the worst in two years.

(Seasonally adjusted, expressed in 1993 dollars)

1st Quarter 2001

Fastest Changing Export Destinations

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

	Value of Exports	Gain	Decline
COUNTRIES WITH THE GREATEST GROWTH			
Russia	\$12,928,556	257.2%	
Israel	\$14,300,170	137.7%	
El Salvador	\$14,201,802	84.3%	
France	\$97,780,509	68.7%	
Jamaica	\$3,634,758	64.2%	
COUNTRIES WITH THE GREATEST DECLINE			
Costa Rica	\$3,854,374		-60.8%
Brazil	\$38,016,837		-52.8%
Turkey	\$19,346,680		-51.3%
Panama	\$1,971,611		-49.7%
Egypt	\$3,642,480		-47.0%

Changes

Perhaps you've caught the changes in this issue's tables. The federal government is no longer reporting exports using the Standard Industrial Classification (SIC). Beginning this year, it is using the new North American Industry Classification System (NAICS). Accordingly, *Global Commerce's* industry tables now use the NAICS. We are also introducing a new table showing Tennessee's best and worst performing products for the previous quarter. This table is based on data from the Schedule B, Harmonized Tariff Schedule. Because of these changes, you may notice that some of the trade figures seem lower this quarter. That is because the new data we are using do not impute estimates of unreported exports to Tennessee. ■



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Tennessee International Trade Report

A huge rise in sales of telephony equipment to Canada was wiped out by losses in exports of motor vehicles and automotive parts.

All good things come to an end, and this apparently includes Tennessee's recent export boom. In the first quarter of 2001, the state exported some \$2.811 billion of goods, a drop of one percent from a year ago. This is in stark contrast to the double-digit growth figures of last year. In fact, January exports continued at 2000's clip, gaining more than 12 percent from a year ago, but then things turned sour.

February's numbers were flat, and March exports were down almost 10 percent. As a result, the state turned in poorer export numbers than the nation as a whole, an unusual event in recent times.

Ironically, it is America's own economic slowdown that accounts for Tennessee's weakening export picture, as the fall in automotive sales has led to the state's losses. Exports of automobiles, automotive parts, tires, safety glass—indeed, anything that goes into or onto a car—were down. Most of these products ultimately appear in cars sold in the U.S. or Canada. When car sales are down, Tennessee exports are down. Foreign sales of motor vehicles were off by a third, and many auto parts dropped by more than 40 percent. Exports of other Tennessee products actually gained for the quarter, but they were unable to cover for the losses in the state's dominant industry.

Automotive losses explain a bad quarter in the NAFTA market. Foreign sales to Canada were down about three percent to \$961 million. A huge rise in telephony equipment (up 406 percent to \$76 million for the quarter) was wiped out by losses in exports of motor vehicles (down more than a fifth to \$61 million) and every kind of automotive part. Mexico, where the

automotive trade is more central, was even worse. Sales to Mexico fell by a fifth to \$358.5 million. Products such as car seats were down 90 percent!

Tennessee industries did not do much better in Latin America, where, at \$166 million, sales were down 18 percent. However, much of this was due to economic difficulties in Brazil. The continent's largest market bought only half as many products

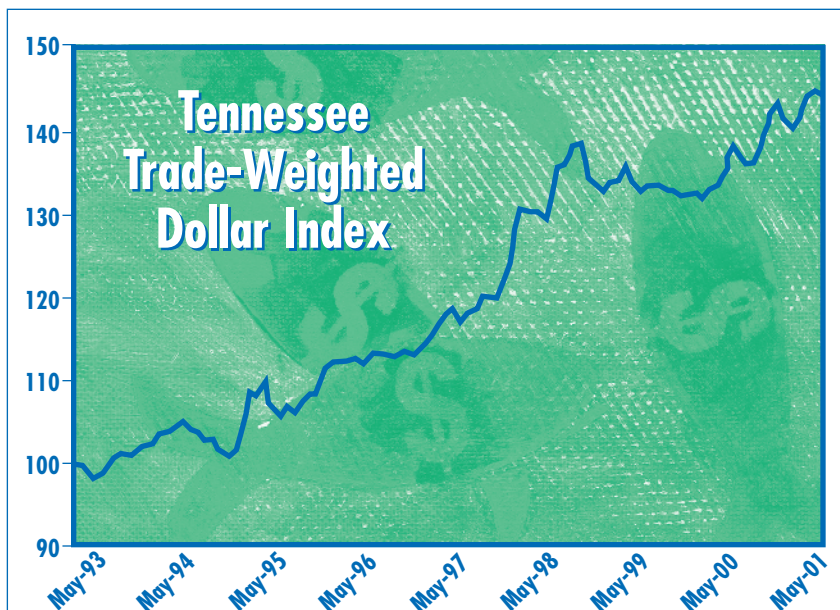
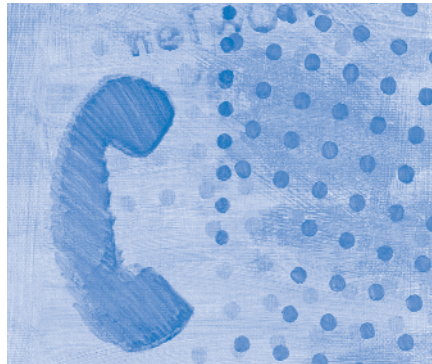
from Tennessee as it did a year ago. Elsewhere, the picture was much brighter. Exports to the "eurozone" of the European Union were up a very healthy 24 percent. The star sector was the aircraft industry. Tennessee aircraft parts sales accounted for \$62 million of the \$363 million in sales to the EU. Pulp, medical instruments, and automatic data processing equipment were other sectors that posted solid gains in this market. Non-euro Europe was

pretty good, too. Sales to Sweden were up 61 percent, and exports to the U.K. grew 27.6 percent to \$181 million. In Great Britain, the lion's share of the gains was also in the aircraft industry. (And, if not in the air, Jack Daniel's and George Dickel must have been at least flying off the shelves. Whiskey exports were up 341 percent for the quarter.)

Japan purchased 7.8 percent more of Tennessee products than a year ago. Not a bad showing, given its continued economic slump. Another sizable drop in automotive trade was overcome by significant increases almost everywhere else. Cellulose and medical instruments were two goods that nearly doubled their quarterly sales from last year. Incidentally, it was a huge initial purchase of toilet paper that led this Tennessee product to post the best growth numbers of any export for the quarter. Tennessee exports grew in the other East Asian markets as well. Sales to China were up 3.3 percent, mostly due to sizable purchases of cotton and artificial filaments. Asia's "Newly Industrializing Countries" were even better. There, the state boosted its export sales by 12 percent to just under \$200 million. Potato chips had a tough time, with sales off by half (\$8 million), but chemicals, electrical circuitry, cotton, and office equipment machinery all did very well.

The best growth numbers came in two smaller markets, Russia and Israel. For the former, it was due to a large purchase of harvesting machinery. The latter, unfortunately, was because of its internal difficulties. Israel bought two million dollars of prepared explosives from the state last quarter.

Until the American economy picks up strength, it is reasonable to expect continued sluggish Tennessee export figures. Falling exports in the transportation industry will be largely to blame. The silver lining, however, is the continued strength across many other Tennessee export industries. ■





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Tennessee's industries, and transportation in particular, have been unusually competitive over the past decade.

Competitiveness

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electrical equipment and machinery are two important sectors where the state lags behind the nation, but even some long-established state industries, such as the apparel and textile sectors, export less of their production than do these industries nationally.

A second measure of competitiveness puts the state in a better light. The Federal Reserve Bank of St. Louis analysis cited above performed what is called a shift-share analysis of export growth for the American states. This is a technique that attempts to disaggregate economic performance into that portion of a state's growth due simply to the national growth of the industries located within its boundaries and that portion due to whether these industries are growing faster or slower in the state than the national average. For this analysis, state export performance was divided into that portion due to industry mix and market effects, on the one hand, and a "competitive effect" on the other. The competitive effect measures the strength of export performance that holds constant the type of industries a state has and the growth rates of the markets to which they are exporting. In this analysis, Tennessee does very well. Virtually the entire amount by which state exports exceeded the

national growth rate is due to competitiveness. In fact, this analysis shows Tennessee to have the fourth highest competitive effect of any state in the country. A problem with shift-share type analyses is that we can only assign a competitive effect, but don't really know what produced it. It does provide evidence for believing Tennessee exports will do well in the future.

As noted at the beginning, this article only skims the surface of a very large question. Overall, industry composition and market orientation appear not to favor or disfavor the state over the long term. The biggest problem may be that, in Tennessee, industries are typically less focused on exports than is the case in other parts of the U.S. Against this weakness we can set the very positive finding that, overall, the state's good growth numbers are due not only to the state's luck in its industry composition or the markets to which it traditionally sells. Tennessee's industries, and transportation in particular, have been unusually competitive over the past decade. This survey suggests that actions to develop the export-directedness of many state industries would be a useful insurance policy for what appears to be otherwise solid evidence that the state is well positioned to continue increasing its exports. The safest conclusion is a prediction: as the export sector becomes an ever more significant part of Tennessee's economy, the question of its global competitiveness will be one that those interested in the state's economy will revisit often. ■