

Global Commerce

Tennessee and the International Economy

Measuring Tennessee's Imports

by Steven G. Livingston

How much does Tennessee import from other countries? Though the question is frequently asked, there has not been a reliable answer. The U.S. Department of Commerce has not published import data for states since the late 1980s. This is due to a variety of methodological problems, including the inability to track imported goods once they enter the United States. Thus, true figures for a state-level "trade balance" do not exist.

However, this does not mean that we cannot estimate the impact of imports on Tennessee's economy. Imports can affect the state economy in one of two ways. First, imports can compete with local production. This competition, of course, would occur not only in Tennessee, but in every state of the union. Tennessee goods vie for sales with international competitors throughout the United States. Second, imports can support local production. They may be important components used by Tennessee industries to make the goods they offer for sale. In this case, the import is needed to *be* competitive. These two effects are obviously opposed in their consequences for the state, but the recognition of either allows us to design a proxy for the economic impact of imports into Tennessee.

Researchers at the Chicago Federal Reserve have suggested a technique for allocating U.S. imports to each state based on the size of the manufacturing sectors in that state. The central idea is that the larger an industry is in a particular state, the larger the percentage of U.S. imports in that industry that either compete with or complement the state's production. We can apply this technique to estimate the portion of imports affecting

Table 1. Year 2000 Imports Allocated to Tennessee

	Allocated Imports	Exports
Transportation	\$6,113,295,530	\$2,501,539,390
Chemicals	\$1,937,680,703	\$1,443,874,461
Food Products	\$648,802,090	\$542,927,280
Fabricated Metals	\$836,538,352	\$682,565,411
Industrial Machinery	\$3,896,389,860	\$1,647,189,780
Electrical Equipment	\$4,281,440,950	\$1,427,584,904
Rubber and Plastics	\$835,365,942	\$572,370,418
Primary Metals	\$1,238,407,052	\$352,500,111
Printing and Publishing	\$105,257,734	\$147,922,194
Paper Products	\$650,649,948	\$496,002,193

Tennessee, and then see how Tennessee stacks up against the nation and other states in the relative size of these imports.

Employing this technique, we allocate imports valued at \$29.97 billion for the year 2000 to the state. Table 1 shows the allocated import levels for the top 10 manufacturing industries in Tennessee for the year 2000. Export figures are shown by way of comparison. As you can see, Tennessee shares in the large American trade deficit. Only the printing and publishing industry posts export numbers larger than its allocated imports. (Among smaller industrial sectors, the medical, industrial, and scientific instrument industry and the miscellaneous manufacturing sectors also have export figures larger than their allocated imports.)

Of equal interest is how Tennessee compares to other states in this dimension. One measure of the relative impact of imports on Tennessee is the ratio of the share of Tennessee's allocated imports to the share of its exports. About 1.6 percent of America's exports come from Tennessee, whereas 2.7 percent of its imports are allocated to the Volunteer State. This suggests that imports have an unusually large impact on this state's economy. A second measure of importance is simply compar-

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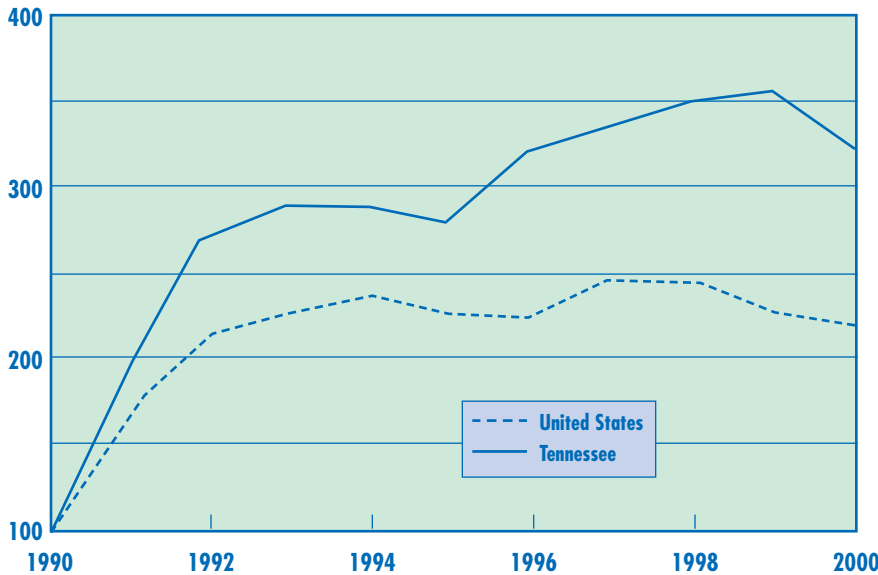
The Argentinean collapse may have an economic impact of about \$60 million on the state of Tennessee.

A Note on Argentina

The collapse of the Argentine financial system is the international economy's first big story of 2002. The consequences of this disaster are borne most heavily by its own citizens, but there is justifiable concern over its global fallout. Tennessee might seem rather remote from this event, but even this state may feel appreciably the

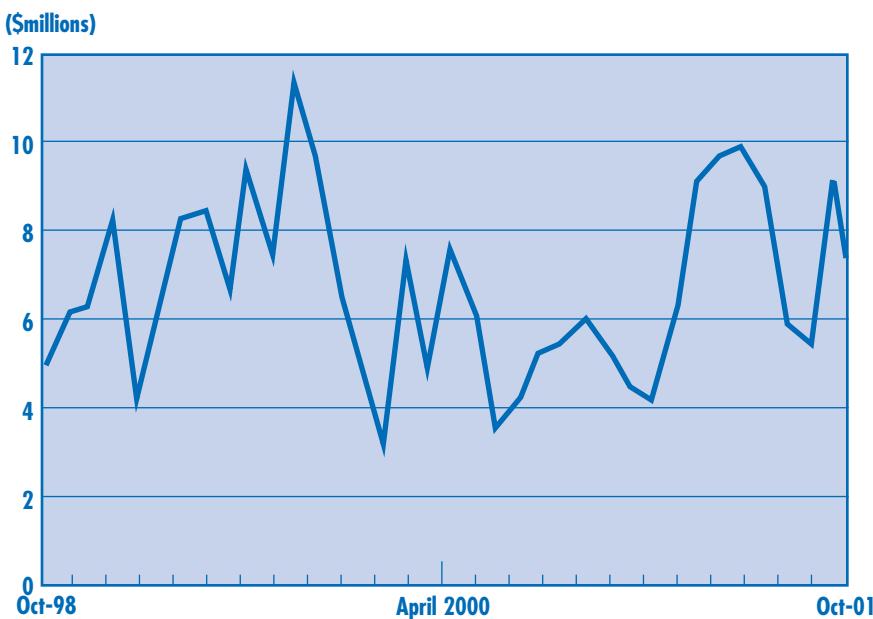
meltdown in Argentina. That country has been one of Tennessee's most robust markets over the past decade. Exports have grown better than 300 percent over that period. This is significantly higher than the export growth rate for the entire United States. Through November, Argentina purchased more than \$83 million in goods from Tennessee in 2001, making it the state's 20th biggest foreign market. As importantly, exports to Argentina are diverse, spanning many industries and products. What impact can the state reasonably expect from Argentina's economic difficulties?

A Nine-Year Boom (Export Index, 1990 = 100)

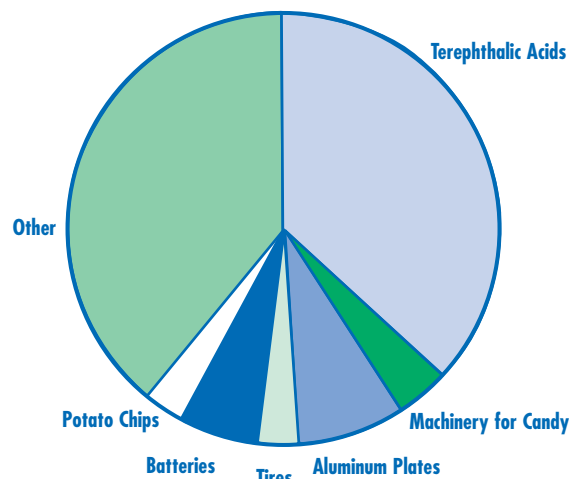


In fact, the export numbers were actually heralding the country's impending problems, and a portion of the "hit" has already occurred. U.S. exports peaked in May 2001 and have fallen about 20 percent since then. Tennessee exports peaked in early 1999, though they have yet to significantly decline. As of November, no sector has suffered substantial reverses. Though the very diversity of the state's trade may be protecting it from severe losses, it is reasonable to expect some decline in exports as Argentina's recession and dual exchange rate regime take effect. Assuming the state eventually mirrors U.S. performance, Tennessee exporters can expect to lose some \$16 million dollars in foreign sales in 2002. Adding indirect exports and multiplier effects, the Argentinean collapse may have an economic impact of about \$60 million dollars on the state of Tennessee. This will persist for the next several years during which Argentina is expected to remain in recession. A distant event in a faraway place can have a sizable affect on the Tennessee economy. ■

Two Volatile Years: Tennessee Exports by Month October 1998 to October 2001



Tennessee Exports to Argentina (January-November 2001)



3rd Quarter 2001

Most industries posted negative numbers.

Tennessee's Largest Export Sectors

	Exports	Change from Last Year	Change from Last Quarter
Transportation Equipment	\$608,184,104	-17.2%	-0.6%
Computer and Electronics	\$421,050,714	11.2%	8.9%
Chemicals	\$286,336,075	-18.0%	-30.9%
Non-Electrical Machinery	\$267,959,404	-5.7%	-29.3%
Electrical Equipment and Appliances	\$114,615,979	-26.6%	-9.6%
Paper	\$116,664,198	-6.3%	-6.2%

3rd Quarter 2001

Auto part exporters had a tough quarter.

What's Hot and What's Not?

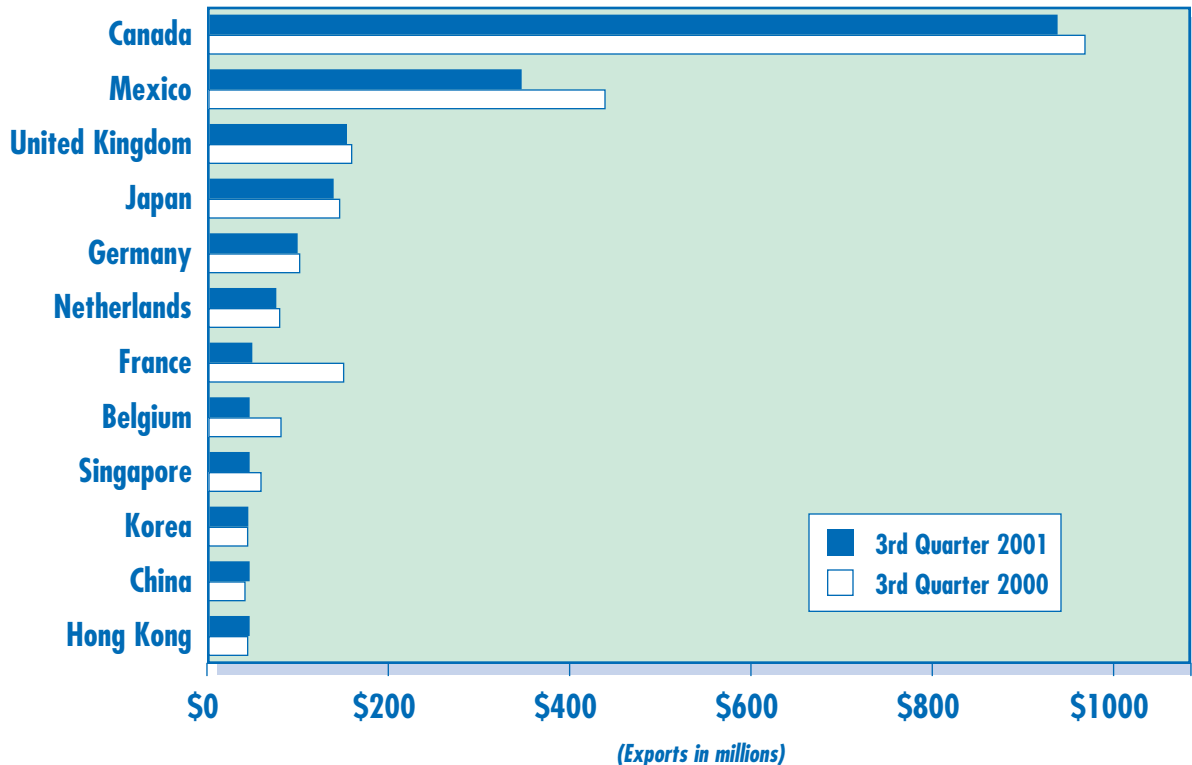
(among Tennessee's top 100 exported goods)

	Value of Exports	Growth	Decline
PRODUCTS WITH THE GREATEST GROWTH			
Electrical Calculators	\$10,619,153	*	
Terephthalic Acid and its Salts	\$6,477,687	*	
Electric Telephonic Apparatus	\$16,612,716	48,980.0%	
Portable Computers	\$20,416,204	901.2%	
Transmission Apparatus	\$6,434,000	576.5%	
PRODUCTS WITH THE GREATEST DECLINE			
Automobile Batteries	\$9,152,578		-238.8%
Vending Machine Parts	\$6,551,040		-204.5%
Toilet Paper	\$1,161,197		-87.5%
Manganese Dioxide Batteries	\$5,170,905		-69.4%
Auto Regulating Instruments	\$3,354,666		-60.8%

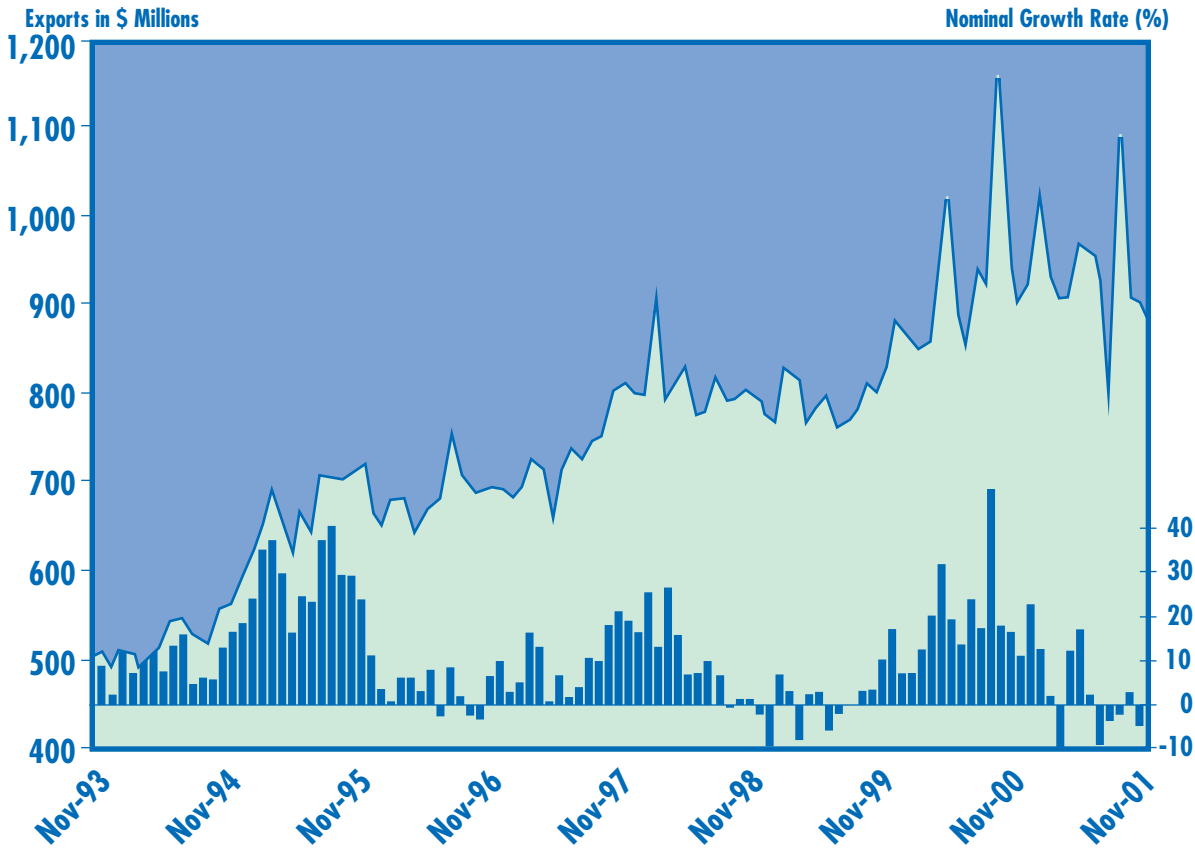
* = not exported last year

Exports to France were down \$100 million.

Tennessee's Leading Trade Partners



Tennessee's Monthly Exports



(Seasonally adjusted, expressed in 1993 dollars)

3rd Quarter 2001

GlobalCommerce

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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			
Bangladesh	\$4,026,613	214.8%	
India	\$30,011,062	188.6%	
Costa Rica	\$10,945,396	178.3%	
Malaysia	\$25,715,032	105.1%	
Ireland	\$18,864,788	56.1%	
COUNTRIES WITH THE GREATEST DECLINE			
Kuwait	\$2,327,265		-78.1%
France	\$54,376,430		-64.6%
Panama	\$1,682,713		-55.0%
Lebanon	\$1,346,342		-42.2%
Belgium	\$53,078,803		-37.6%

Tennessee International Trade Report

Only two smaller sectors joined electronics and agriculture to post significant gains in one of Tennessee's poorest quarterly performances in some time.

The global recession led to a substantial reduction in Tennessee exports this past quarter. State exports stood at \$2.677 billion, almost a tenth less than in 2000. Twenty-one of the state's 31 NAICS (North American Industry Classification System) export sectors lost ground over the quarter. Bucking the trend were the computer and electronics sector, which gained 11 percent (for a total of \$421 billion), and the agricultural sector, which increased its exports more than 88 percent (to \$144 billion). Each of these gains was quite specific geographically. Huge exports of cotton to India and Bangladesh account for the robust gains in the agricultural sector, while some four-fifths of the electronics gains were due to increased exports of telephony equipment to Canada.

Most of Tennessee's major export sectors posted very anemic numbers for the quarter. Increased automotive exports to Mexico could not offset a sizable drop in aircraft-related exports to Europe and Canada, as the transportation sector lost more than \$120 million for the quarter. (This performance is not quite as bleak as it seems. Last year's aircraft exports included several large one-

time sales that were unlikely to be repeated under the best of circumstances.) The chemical sector, too, had a tough quarter, losing nearly a fifth of its exports from a year ago. Among major markets, only in Mexico and Hong Kong was the industry able to hold its own. The heavy industrial sectors all lost ground, with reverses particularly severe in Mexico. None fared worse than the state's electrical

equipment manufacturers, who saw their sales drop by two-thirds not only in Mexico, but in Europe as well. Nor did apparel makers have a good quarter. Apparel exports fell from \$44 million to \$18 million, with losses concentrated in Mexico and the Caribbean. Textiles, however, were unchanged for the quarter.

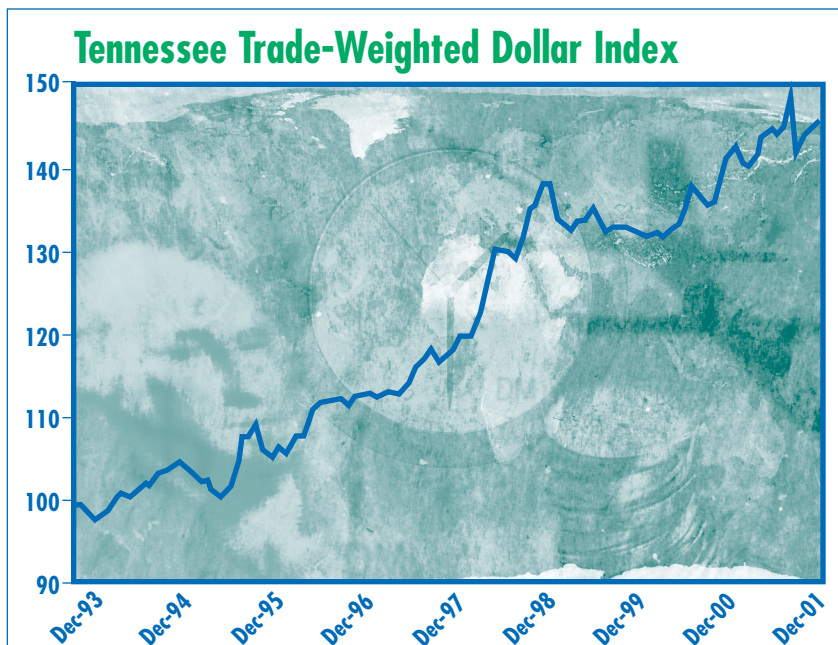
Only two smaller sectors joined electronics and agriculture to post significant gains in one of the state's poorest quarters in some time. The printing and publishing industry boosted exports by \$6 million, an 18 percent increase, and the beverage sector—led by a \$40 million increase in whiskey exports—increased its foreign sales by 75 percent for the quarter. Whiskey appears to be Tennessee's most recession-proof product!

As this summary suggests, the gloom was global. NAFTA, the state's largest market, fared poorly. Exports were off three percent to Canada and 18 percent to Mexico. European sales fell by 22 percent, and Latin American sales by seven percent. Exports to Japan dropped a little less than three percent, to \$145 million. In this environment, the fact that exports to the Chinese Economic Area (China, Taiwan, and Hong Kong) were flat for the quarter must count as good news. Indeed, in only two regions of the world could state exporters make any headway. As noted above, a sizable shipment of cotton overcame losses in other areas to produce solid gains in South Asia, while cotton and non-electrical machinery sales led to a small but positive (2.65 percent) increase in the state's exports to Southeast Asia.

The good news is that export losses seem to have bottomed out in July. October exports were actually in the black, and November's figures, while again down (by four percent), compare very favorably to America's overall 14 percent decline in exports for the month. ■



Tennessee Trade-Weighted Dollar Index



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The importance of manufacturing in these states makes them unusually vulnerable to the impact of imports.

Table 2. Import Impact Index (U.S. = 100)

	Import Index
TENNESSEE	149
Alabama	142
Arkansas	167
Georgia	86
Kentucky	151

Import Activity

continued from front

ing the size of Tennessee's allocated imports to that of the entire nation. Creating a state index of imports that adjusts allocated imports to the size of the state's economy (Table 2), we see that Tennessee scores quite high in the impact of imports on its economy. However, if we look at the state's neighbors, we see that most of the southeastern states score similarly. This suggests that Tennessee is not uniquely vulnerable to imports. Rather, it reflects the unusual importance of manufacturing to all of these states' economies. (Georgia, less dependent upon manufacturing, also scores significantly lower on the index.)

These calculations are all at the two-digit industry code level and could be improved by further industrial disaggregation. They cannot separate the competitive from the complementary impact of imports. Nevertheless, they are a good first cut at a very important issue. They take us a long way toward understanding the relative size and economic importance of imports to the state of Tennessee. ■

Visit the *Global Commerce* website

The screenshot shows the BERC website interface. At the top, there is a navigation bar with links for 'what's new', 'publications', 'staff', 'resources', 'studies', 'databases', and 'about us'. Below this is a header for 'INTERNATIONAL'. The main content area features a globe icon and a list of links: 'Trade Links', 'State of Tennessee', 'Online Trade Links', 'Tennessee Trade Contacts', 'Global Commerce', 'Tennessee Trade Statistics', and 'About This Database'. A paragraph of text describes the Tennessee International Trade Database, stating it contains extensive information on virtually all facets of Tennessee's global involvement, including statistics on 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. Another paragraph mentions that 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. At the bottom of the page, there is an email address 'email:berc | mtsu home' and a search bar.

http://www.mtsu.edu/~berc/trade_database.html