

UPDATING THE INDEX

TENNESSEE TRADE-WEIGHTED DOLLAR

by Steven G. Livingston

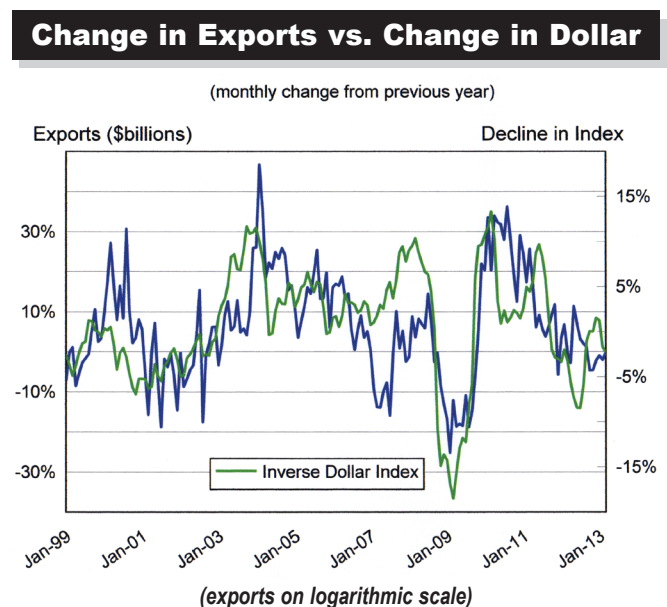
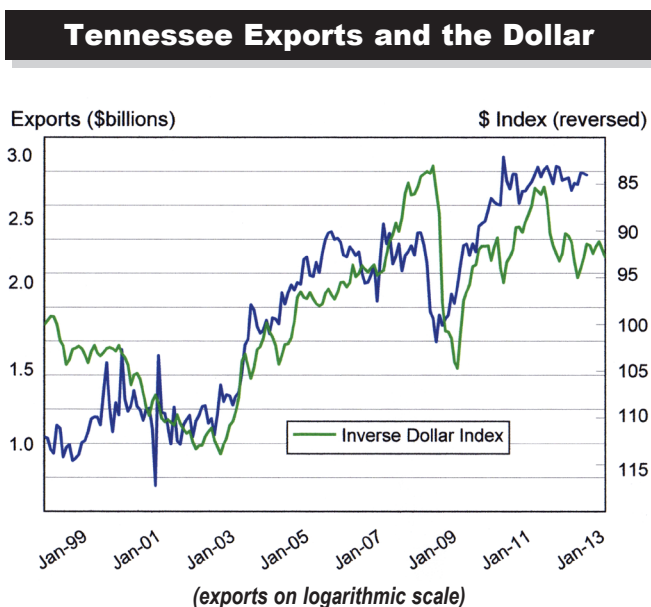
In this issue, we update the Tennessee Trade-Weighted Dollar Index. Doing so also provides us with an overview of how the geography of the state’s trade has been changing. That the value of the dollar has a large impact on trade is hardly a controversial statement. For Tennessee, two simple graphs illustrate the point. The first displays the state’s export growth against the Tennessee dollar index. The index is shown reversed (it goes up when the dollar goes down).¹ The fit is quite remarkable. If we graph the change in each month’s exports versus each month’s change in the dollar index, we see the same strong relationship. The fit between state exports and the strength of the dollar is actually even stronger than we were seeing a decade ago.

The strength of the dollar is measured using a trade-weighted index. “Trade-weighted” simply means the index is composed of each major export market adjusted by its size. For Tennessee, as an example, the exchange rate with Canada counts for a great deal but that with Argentina not so much. Our revised index is created from the 24 markets that each account for at least 0.5% of the value of the state’s foreign shipments, as averaged over the years 2010–2012. (The nations using the euro are treated as one market.) These markets together account for more than 90% of total Tennessee exports. Each market and its percentage in the index is given in a chart at the end of this article.

The 2010–2012 index includes new entrants Chile, Colombia, and Russia. They replace Kuwait, Malaysia, and Sweden, all of which now account for less than 0.5% of state exports. The most significant change in the index is the relative decline of Canada. It composed 35% of our previous index but just over 30% of our revision. India nearly

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1. Exports are shown on a logarithmic scale, though the numbers on the axes are the real value of exports. The scale essentially indexes the export level.



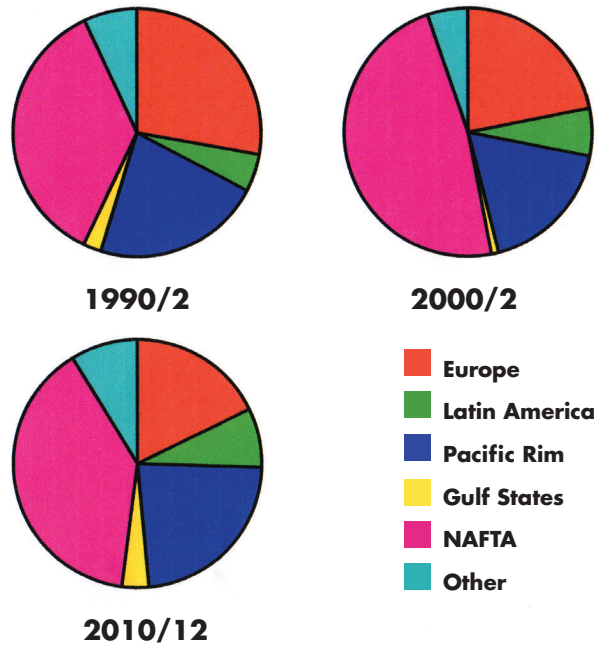
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doubled its importance to the index, the largest percentage change, but it remains a rather small market, still receiving less than 1% of the state's foreign sales.

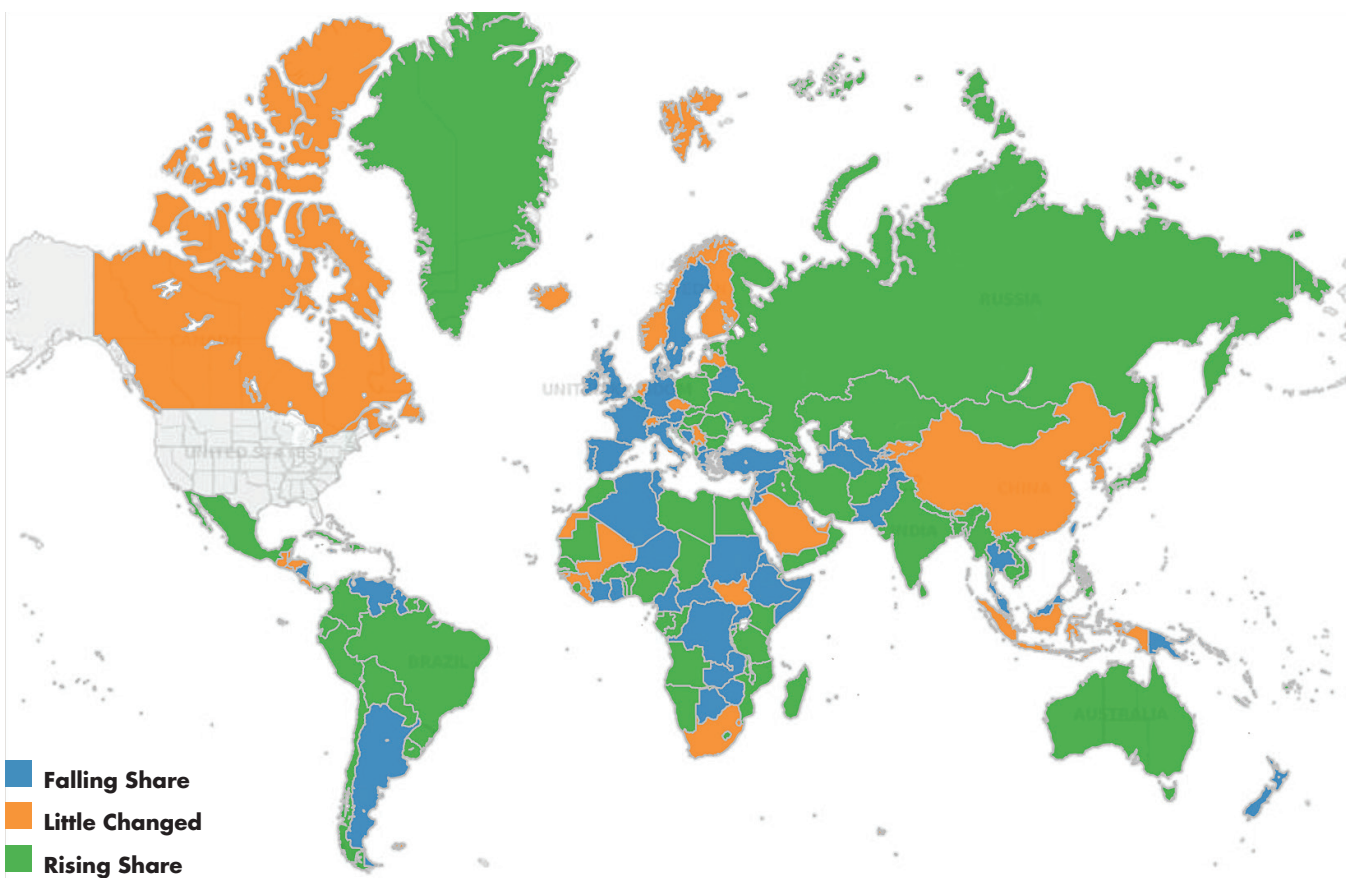
The new index (page 5) points to the slow evolution of the state's export geography. Over the past two decades, the state has seen reduced trade flows to Europe and a slow but steady growth in Latin America. (Our very first Index, back in the 1990s, had only Mexico and Brazil included; we now have five Latin American nations.) NAFTA and the Pacific Rim, the other two major trading regions, are a bit more difficult to summarize. The former was taking a larger share of state exports for most of the 1990s and the first part of the past decade but has retreated somewhat in the past several years. It remains a bigger piece of the state exporters' pie than it was before the NAFTA agreement began, however. The Pacific Rim shows the reverse pattern, falling as a share of state exports after the mid-1990s but then gaining it back and

Tennessee's Changing Global Market



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Changing Market Share 2010/2012 vs. 2005/2007



1st Quarter 2013



Tennessee's Largest Export Sectors

| | Value of Exports | Change from Last Year | Change from Last Quarter |
|------------------------------|------------------|-----------------------|--------------------------|
| Medical Equipment | \$900,508,413 | 14.3% | 14.4% |
| Motor Vehicle Parts | \$741,361,776 | 6.5% | 2.2% |
| Motor Vehicles | \$597,660,797 | 46.2% | 52.2% |
| Computer Equipment | \$546,266,482 | -5.2% | 3.6% |
| Basic Chemicals | \$527,735,803 | -10.9% | 11.4% |
| Synthetic Fibers & Filaments | \$423,247,829 | 0.8% | 2.8% |
| Instruments & Controls | \$377,597,441 | 6.7% | -11.1% |

1st Quarter 2013



What's Hot and What's Not*

| | Value of Exports | Growth | Decline |
|--|------------------|----------|---------|
| SECTORS WITH THE GREATEST GROWTH | | | |
| Photosensitive Semiconductor Devices | \$37,599,866 | 1,519.6% | |
| Paper | \$23,046,791 | 142.8% | |
| Bandages | \$13,553,267 | 105.5% | |
| Electric Motors and Generators | \$34,852,899 | 98.5% | |
| Miscellaneous Plastics | \$28,989,549 | 89.5% | |
| SECTORS WITH THE GREATEST DECLINE | | | |
| Commercial Trucks | \$10,153,772 | | -82.0% |
| Video Game Consoles | \$8,590,468 | | -69.5% |
| Electric Storage Batteries | \$4,848,496 | | -68.6% |
| Raw Tobacco | \$11,113,752 | | -53.6% |
| Titanium Dioxide Pigments | \$121,538,673 | | -44.9% |

*Among Tennessee's top 100 exported goods.

1st Quarter 2013

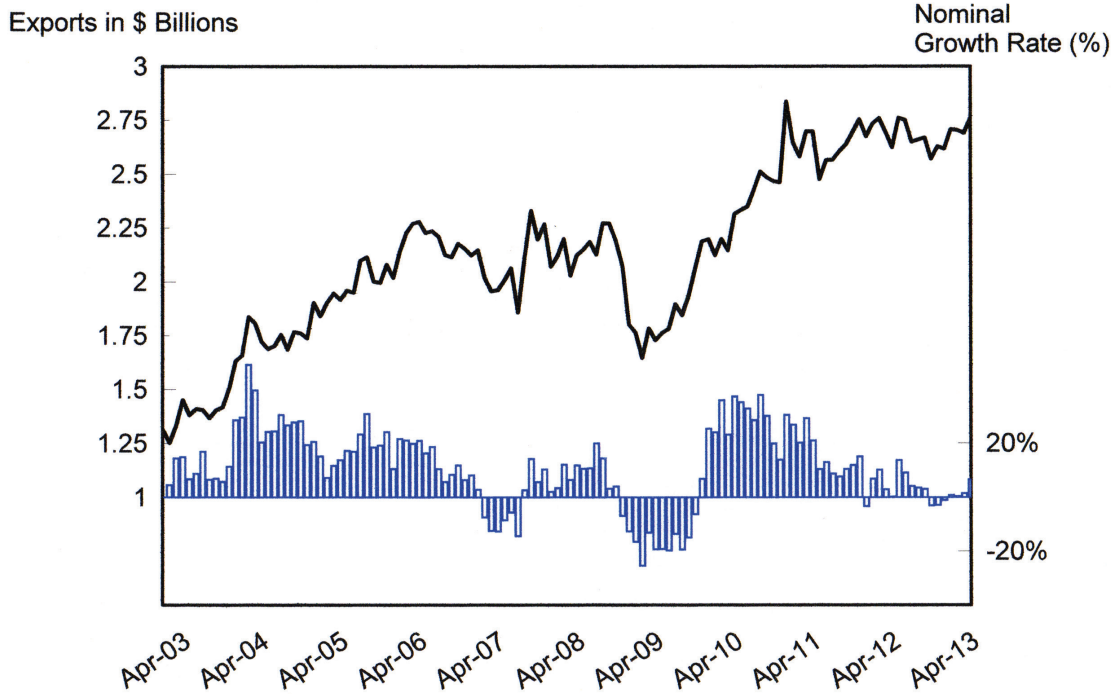


Fastest-Changing Export Destinations

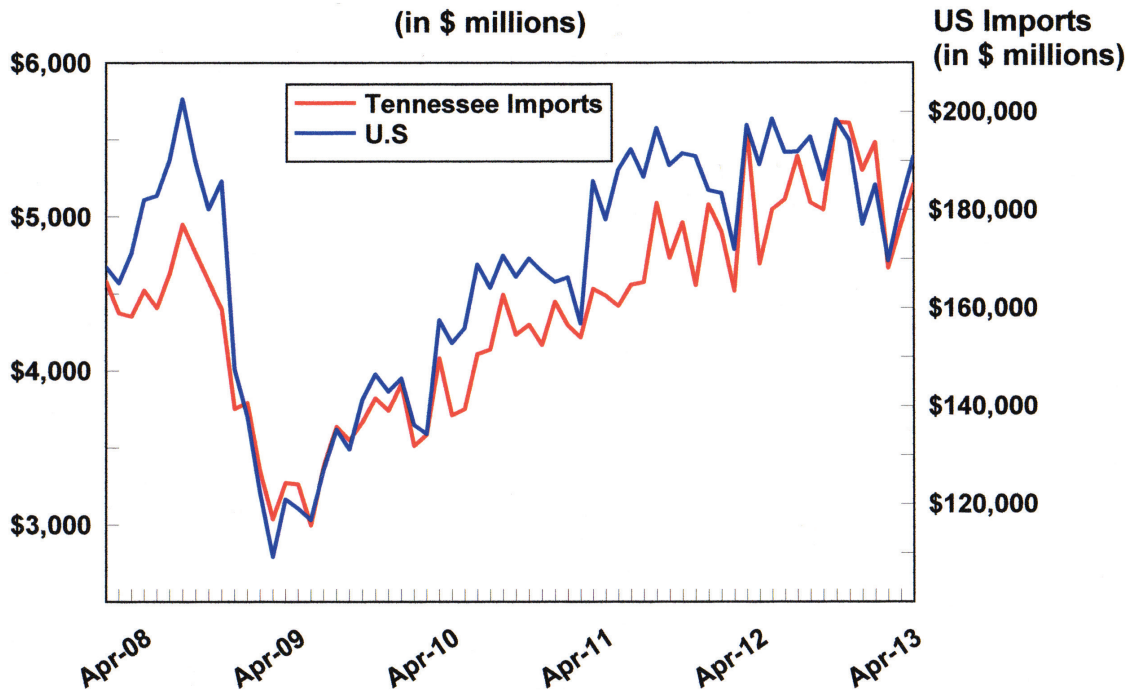
| | Value of Exports | Gain | Decline |
|--|------------------|--------|---------|
| COUNTRIES WITH THE GREATEST GROWTH | | | |
| Luxembourg | \$9,622,104 | 645.3% | |
| Morocco | \$7,345,481 | 169.1% | |
| United Arab Emirates | \$224,648,909 | 72.6% | |
| Pakistan | \$23,661,873 | 72.6% | |
| Singapore | \$253,242,093 | 63.0% | |
| COUNTRIES WITH THE GREATEST DECLINE | | | |
| New Zealand | \$7,389,620 | | -55.4% |
| Venezuela | \$16,981,623 | | -40.5% |
| Czech Republic | \$7,463,089 | | -39.9% |
| Oman | \$19,732,606 | | -37.7% |
| Hong Kong | \$61,851,406 | | -36.1% |

(Among countries averaging more than \$5 million in sales per quarter)

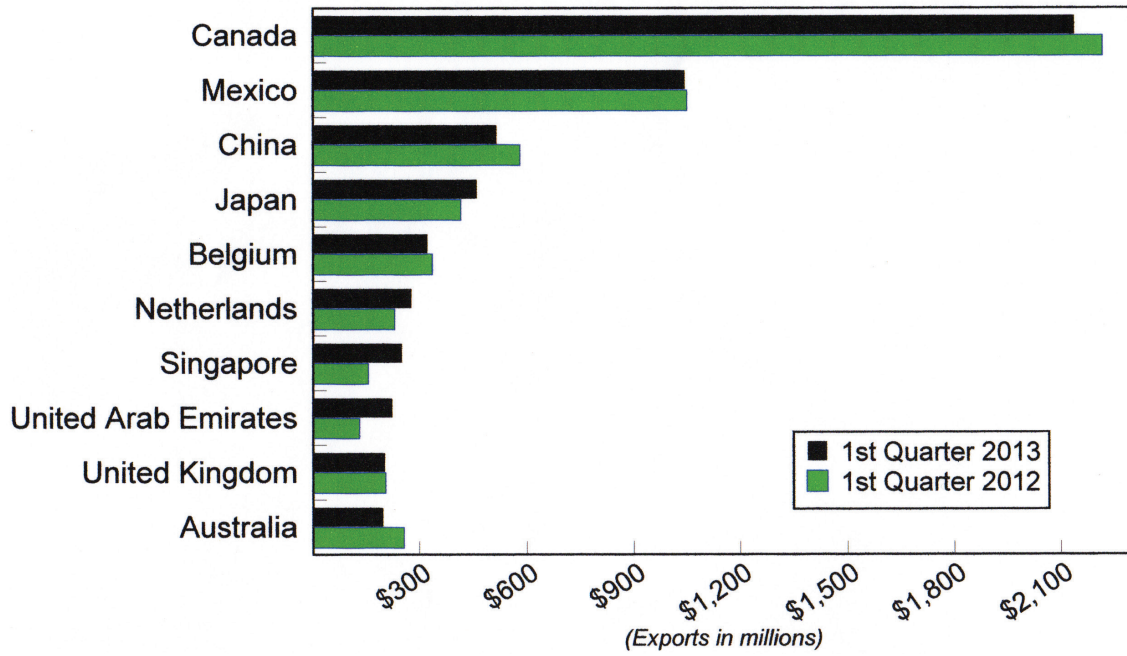
Tennessee Monthly Exports



Tennessee Monthly Imports

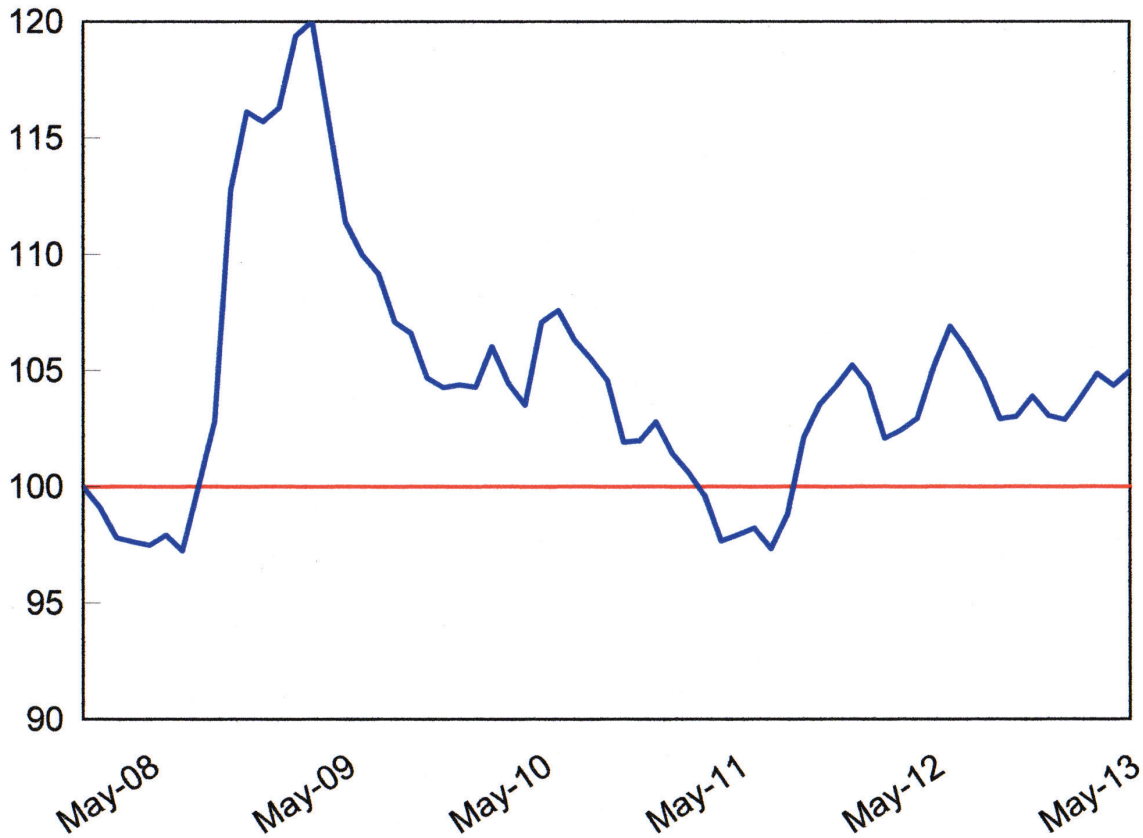


Tennessee's Leading Trade Partners



Tennessee Trade-Weighted Dollar Index

January 2008 = 100





ALL IN ALL, THE QUARTER WAS A DECIDEDLY MIXED BAG.

Tennessee exporters eked out a 1.32% gain in the first quarter of 2013. This at least surpassed last quarter's decline and, in fact, exceeded national export performance. U.S. exports were up just 0.43% for the quarter. At \$7.942 billion in foreign shipments, Tennessee ranked 14th among the American states.

Though the overall value of the state's exports was stagnant, there was substantial movement in many traded goods. Foreign shipments of cars, for example, were up more than \$200 million for the quarter, a two-thirds increase, while auto part exports gained 13% (to \$433 million). Sales of orthopedics (up 39%, to \$273 million) also increased substantially. Goods as varied as cellulose, cell phone parts, pharmaceuticals, solar cells, and scrap all had good quarters. Of course, as these gains must indicate, other products had equally difficult quarters. Cotton suffered the largest dollar loss (dropping \$129 million, to \$208 million for the quarter) though titanium dioxide preparations fared even worse in percentage terms (off \$79 million, or 45%). Diesel engines, software and video/computer games, mowers, and trucks also saw substantial export declines. So below a placid exterior, a lot was going on.

The fundamental reason for the state's slow export growth is close to home. Tennessee's exports to Canada, its largest market by far, fell by more than \$70 million from 2012. Though shipments of cars and auto parts grew vigorously, these gains were outweighed by large losses in computer sales (from \$309 to \$237 million), computer and video games (off by nearly half), and mowers. Industrial machinery generally did not have a good quarter north of the border. The destination of more than a quarter of all state exports, Tennessee's export numbers are likely to continue to be weak until there's a Canadian turnaround. For the past several quarters, the Canadian slowdown has been mitigated by solid growth in Mexico, but that ended this past quarter. Shipments to Mexico were flat (\$1.050 billion in the first quarter of 2012 versus \$1.046 billion this past quarter). Most exports to Mexico are automotive related, and declines in auto parts, tires, and car engines accounted for the weak quarter here, although there was also a significant drop in cotton shipments.

The stalling global economy had its impact as well, most notably in China. Exports to China fell more than 11%, to

\$517 million. If we include Hong Kong and Taiwan, shipments to the region fell by more than \$100 million (almost 20%). The good news, if we wish to call it that, is that the loss was concentrated in cotton shipments. If we subtract cotton sales, Tennessee exports to these markets actually increased a small amount. Essentially exports of final goods (orthopedics, aircraft, computers) were up, while intermediate goods used in Chinese factories were down. Europe, with its well-known "austerity," was a similar story. Total Tennessee exports to that continent were up, but just barely (less than 1%), and even that was only because of a single country. A \$50 million gain in the Netherlands (mostly orthopedics and cars) was just enough to counterbalance a decline in every other major eurozone market. Outside the euro, the U.K. was basically unchanged as well.

There was better news from the Asian rims. In the northeast, exports to both South Korea and Japan were robust. For Japan, where almost half the state's exports are now in the medical sector, the gains were built on increased orthopedic exports and new shipments of solar cells. The story in Korea was cars. Exports of automobiles soared from \$3 million in the first quarter of 2012 to \$56 million last quarter. This spearheaded a 30% gain in the Korean market. Though much of Southern and Southeast Asia mirrored the slowdown in China, Singapore was a tremendous exception. A huge increase in medical instrument shipments and pharmaceuticals to Singapore added nearly \$100 million in exports to that country. Finally, at the other end of Asia, a surge of auto sales led to a 20% growth of exports to the Persian Gulf states. Most of the autos were Altimas that were shipped to the United Arab Emirates.

TENNESSEE'S EXPORTS TO CANADA, ITS LARGEST MARKET, FELL OVER \$70 MILLION FROM 2012.



We end our survey with Latin America. A sizable increase in paper exports was enough to push the Central American market up a bit (adding \$5 million from a year ago), while sales to South America increased by a solid 6.4%. The lion's share of the gain was in Brazil, Chile, and Peru. Chile in fact was one of the state's best global markets for the quarter, growing almost by 30%, thanks largely to new computer sales. Not all the continent's markets were up, however. Argentina and Venezuela, in particular, saw significant reverses due to declines in the chemical sector.

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TRADE REPORT

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All in all, the quarter was a decidedly mixed bag. A number of goods and several markets turned in very solid numbers. The automotive and medical sectors continued their strong performances. But the global slowdown clearly struck state

THE GLOBAL SLOWDOWN CLEARLY STRUCK STATE EXPORTERS.



exporters, and a series of major markets— NAFTA, China, and the European Union—proved difficult. These markets will have to reignite before the state can again count on the sort of export growth it has known in recent years. ■



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more over the past several years. The pattern to the Pacific Rim trade has been driven most significantly by a sharp drop in exports to Japan in the late 1990s that has been decidedly reversed in recent years.

The map of state export markets allows us to examine the patterns more closely. While a number of changes might be spotted, clearly the largest is that we find nations that have been rising in their share of state exports mostly across the Asian rim and Latin America, while the declines seem concentrated across much of Europe and the interior of Africa. It might be interesting to note that for all the hoopla, China has not become a relatively more important market for Tennessee over the past five years. (A needed footnote however, is that cotton remains the largest Tennessee export to China, and its sales have declined in the past couple of years. China would show better if we excluded cotton from the picture.)

Our revised index (page 5) begins in 2008, so it essentially starts with the surge in the value of the dollar that accompanied the global economic crisis that was then still spreading. After that initial first peak, the index has been hovering somewhat higher than where it began but has remained relatively stable over the ensuing five years, all things considered. The good news, at least, is that the dollar has not been a significant headwind to state exports over recent years. Whether the recent interest rate volatility will affect this will be one of the more interesting economic stories over the rest of the year. ■

Weighting Tennessee's Trade

| | % Exports | % Index |
|----------------|-----------|---------|
| Canada | 27.81% | 30.56% |
| Eurozone | 13.71% | 15.06% |
| Mexico | 12.72% | 13.98% |
| China | 6.91% | 7.59% |
| Japan | 5.53% | 6.08% |
| United Kingdom | 2.87% | 3.15% |
| Australia | 2.75% | 3.02% |
| Singapore | 2.24% | 2.46% |
| Brazil | 2.22% | 2.44% |
| Korea | 2.07% | 2.28% |
| U.A.E. | 1.41% | 1.55% |
| Hong Kong | 1.25% | 1.37% |
| Chile | 1.18% | 1.30% |
| Saudi Arabia | 1.09% | 1.19% |
| Colombia | 1.03% | 1.14% |
| Taiwan | 1.03% | 1.13% |
| India | 0.87% | 0.95% |
| Turkey | 0.73% | 0.80% |
| Thailand | 0.65% | 0.72% |
| Indonesia | 0.64% | 0.71% |
| Switzerland | 0.62% | 0.68% |
| Argentina | 0.59% | 0.65% |
| South Africa | 0.59% | 0.65% |
| Russia | 0.54% | 0.59% |

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