

# Bureau of Transportation Statistics Special Report

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## Increased Trade Spurs Growth in North American Freight Transportation

by Michael J. Sprung

Freight Transportation between the United States and our North American Free Trade Agreement partners – Canada and Mexico – continues to grow at a strong pace. In 2006, the U.S. transportation system carried goods for export worth \$364 billion and imports worth \$502 billion in trade with Canada and Mexico. Transporting this merchandise requires an enormous amount of transportation equipment – trucks, railcars, aircraft, pipeline, and maritime vessels plus millions of containers.

- Between 1996 and 2006, U.S. merchandise freight with our NAFTA partners more than doubled in value, increasing from \$419 billion to \$866 billion. In 2006, imports accounted for over half (58 percent) of this freight activity, slightly up from 55 percent in 1996.
- Growth in this trade, whether outbound exports or inbound imports, results in higher levels of international freight movement and the demand for expanded freight transportation services in the United States.

### Modal Perspective

- In 2006, land modes of transportation (truck, rail, and pipeline) carried the bulk, \$760 billion worth (88 percent), of U.S. freight with Canada and Mexico.
- Trucks remain the dominant mode for transporting U.S.-North American freight, carrying \$534 billion, or 62 percent, of the total value in 2006. Rail accounted for 15 percent and pipeline

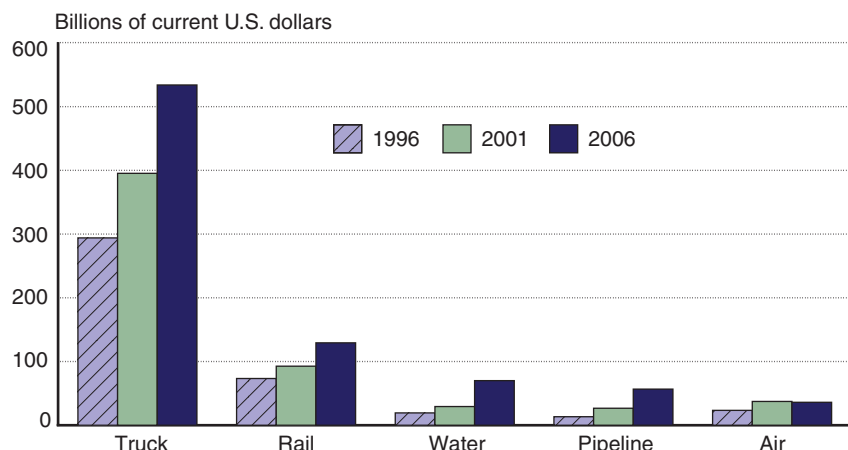
7 percent. Of the remaining value, 8 percent moved by maritime vessels, 4 percent by air, and 5 percent by other and unknown modes. Between 1996 and 2006, trucks accounted for most of the growth in the value of U.S.-North American freight.

- In 2006, U.S.-Canada freight transported by land modes was valued at \$488 billion (64 percent of total land trade value). The remaining 36 percent was with Mexico and was valued at \$272 billion.
- Measured by tonnage, water transportation carried more freight in 2006 than any other mode. An estimated 251 million short tons moved over water, accounting for about 35 percent of the weight of NAFTA trade.

Water is dominant in terms of weight because it moves more heavy bulk products (e.g., grain and crude petroleum), while higher value-per-ton products (e.g., machinery and electrical products) are more often transported by truck, air, and rail. By tonnage, water was followed by truck, rail, pipeline, and air.

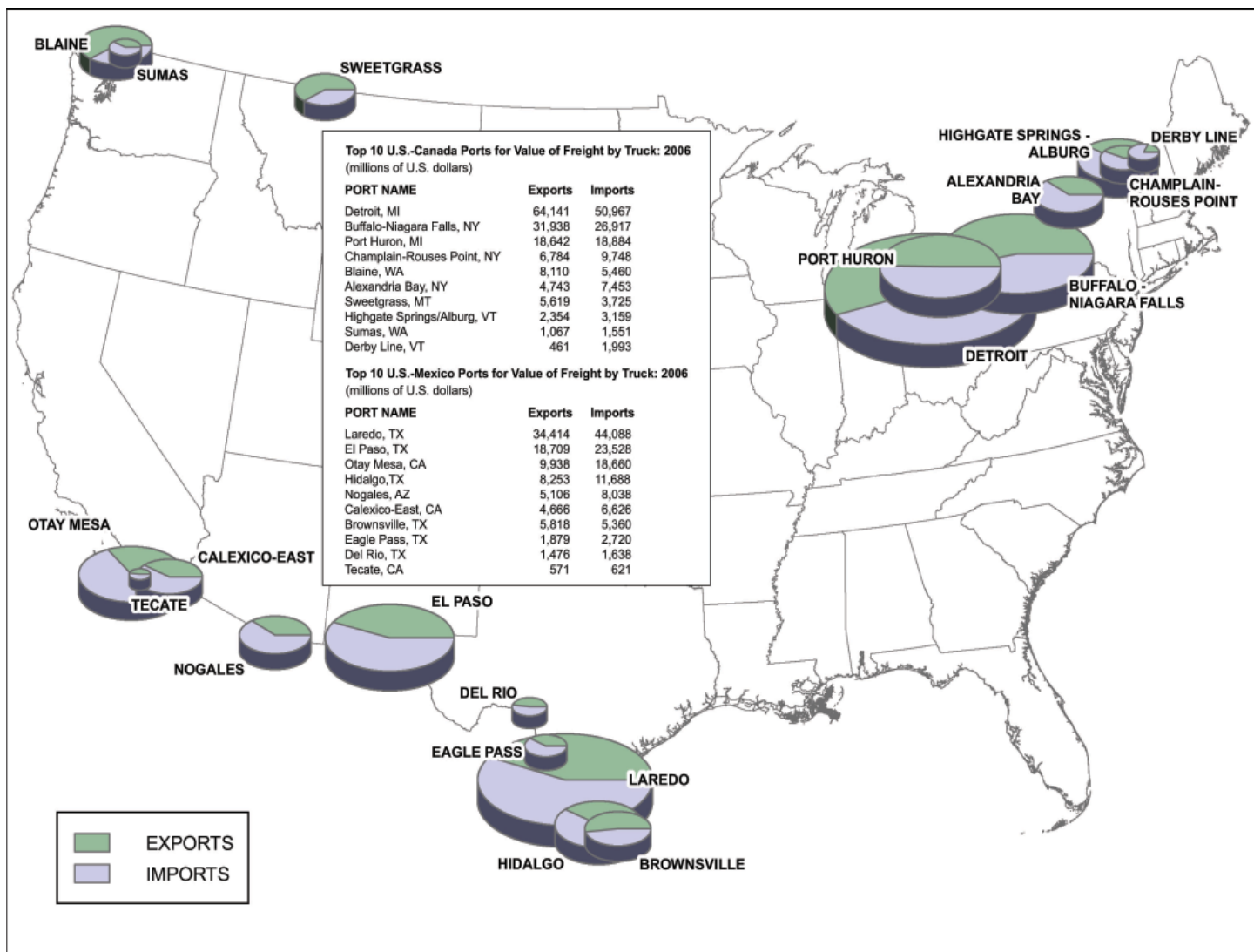
*Of all goods moved in U.S.-International trade, more than one out of every three dollars is with Canada and Mexico.*

**Value of Goods Exchanged in U.S. Trade with Canada and Mexico by Mode: 1996, 2001, and 2006**



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data, March 2007.

## Top Ports for Transborder Merchandise Freight by Truck: 2006



SOURCE: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data, as of March 2007. Prepared by BTS Geospatial Information Program

### Key Land Border Gateways

The distribution of U.S. trade with Canada and Mexico and the movement of this freight impact the U.S. transportation network, especially at the major border gateway entry and exit ports and nearby north-south highway corridors.

- In 2006, the leading overall truck gateway was Detroit, Michigan, with \$115 billion of freight, followed by Laredo, Texas, (\$79 billion), and Buffalo-Niagara Falls, New York (\$59 billion).
- The leading rail gateway was Port Huron, Michigan, with \$26 billion, fol-

lowed by Laredo, Texas (\$25 billion) and Detroit, Michigan (\$21 billion).

#### Northern Border

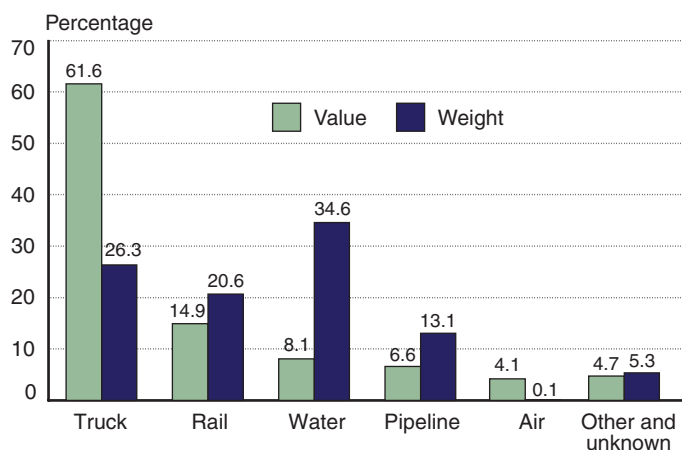
- While there are over 85 land entry and exit ports on the northern border with Canada, the leading ports handle the majority of the transborder freight and serve as national gateways. In 2006, the top 10 ports alone handled \$288 billion, or 92 percent, of the truck freight crossing the northern border.
- Two of the four largest U.S. land ports are in Michigan – Detroit and Port Huron. Serving as national gateways, in 2006 these two ports, combined,

handled \$200 billion of freight transported by truck and rail.

#### Southern Border

- There are 25 land entry and exit ports on the southern border with Mexico that serve as gateways and yet the leading 10 ports handle nearly all of the transborder freight. In 2006, these ports alone handled \$214 billion worth or 97 percent of the truck freight crossing the southern border.
- On the southern border, the land ports of Laredo, El Paso, and Hidalgo, all in Texas, serve as national gateways, handling trade valued at \$170 billion.

## Modal Shares of U.S. Goods Trade with NAFTA Partners by Value and Weight: 2006



**NOTE:** The Bureau of Transportation Statistics has estimated the land mode export tonnage using value-to-weight ratios derived from imported commodities.

**SOURCE:** U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data, March 2007.

This trade includes freight moving through Texas, to and from other states. By comparison, Texas was the origin or destination for \$107 billion worth of trade in 2006. The three Texas ports accounted for 22 percent of all U.S.-NAFTA land trade in 2006.

## Trade by State

In 2006, Texas was the top state by value of freight transported by all modes, with over \$141 billion in trade with our NAFTA partners, an increase of 11 percent from 2005. Michigan had a more modest increase of 5 percent, reaching \$103 billion. California ranked third at \$88 billion. Together, these top three states were the origin and destination for 38 percent of the total value of U.S.-NAFTA goods trade in 2006.

- The top 2 states trading with Mexico accounted for 50 percent of the value of total U.S.-Mexico merchandise trade in 2006. Texas was the number one ranked state by value of goods transported to and from Mexico followed by California and Michigan.
- Michigan topped the list of states for value of merchandise trade with Canada in 2006. Goods transported between Michigan and Canada totaled \$73 billion, which was nearly double the value of goods moved between Illinois (the second ranked state) and Canada. Illinois was followed by New York and California.
- Between 2005 and 2006, the fastest growing U.S. states in terms of percentage increase in value of NAFTA merchandise trade were Mississippi and Connecticut. In terms of a change in the actual value of NAFTA merchandise trade, Texas grew the most in 2006.
- Overall in 2006, US-NAFTA merchandise trade declined in five states—Virginia, Georgia, Oklahoma, Maine, and Ver-

## Value of U.S.-NAFTA Shipments by State of Origin and Destination for All Modes: 2005 and 2006 (Millions of current U.S. dollars)

Ranked by order in 2006	2005	2006	Percent change
<b>All U.S. states</b>	<b>789,537</b>	<b>866,099</b>	<b>9.7</b>
Texas	126,590	141,027	11.4
Michigan	97,771	102,507	4.8
California	80,335	87,944	9.5
Illinois	42,735	49,769	16.5
New York	39,389	42,901	8.9
Ohio	37,100	40,475	9.1
Pennsylvania	23,108	26,794	15.9
Tennessee	19,768	22,099	11.8
Indiana	21,073	22,034	4.6
Washington	20,067	21,732	8.3
New Jersey	14,856	18,068	21.6
Minnesota	15,485	16,132	4.2
North Carolina	13,744	14,874	8.2
Wisconsin	13,266	14,860	12.0
Kentucky	12,681	14,646	15.5
Georgia	14,561	14,500	-0.4
Arizona	12,302	13,936	13.3
Massachusetts	11,524	12,416	7.7
Florida	10,949	12,105	10.6
Missouri	10,407	11,317	8.7
Louisiana	8,934	10,709	19.9
Connecticut	6,544	8,627	31.8
Iowa	7,697	8,440	9.6
South Carolina	7,362	8,148	10.7
Oregon	7,537	7,817	3.7
Mississippi	5,477	7,313	33.5
New Hampshire	5,970	6,949	16.4
Virginia	6,635	6,583	-0.8
Colorado	5,972	6,439	7.8
Kansas	5,058	6,143	21.5
Alabama	5,572	5,660	1.6
Maryland	4,801	4,913	2.3
Vermont	6,280	4,340	-30.9
Montana	3,692	4,304	16.6
Oklahoma	4,220	4,135	-2.0
Utah	2,813	3,219	14.4
Maine	3,793	3,218	-15.2
Wyoming	2,476	3,130	26.4
Nebraska	2,393	2,977	24.4
Arkansas	2,602	2,811	8.0
West Virginia	2,600	2,779	6.9
North Dakota	2,056	2,335	13.6
Delaware	1,667	2,123	27.3
Nevada	1,877	2,061	9.8
Rhode Island	1,946	2,044	5.1
Idaho	1,307	1,487	13.7
New Mexico	943	1,214	28.7
South Dakota	1,106	1,185	7.1
Alaska	770	984	27.8
Hawaii	153	198	29.7
District Of Columbia	126	141	11.6
U.S. State Unknown	31,447	33,538	6.7

**SOURCE:** U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data, March 2007.

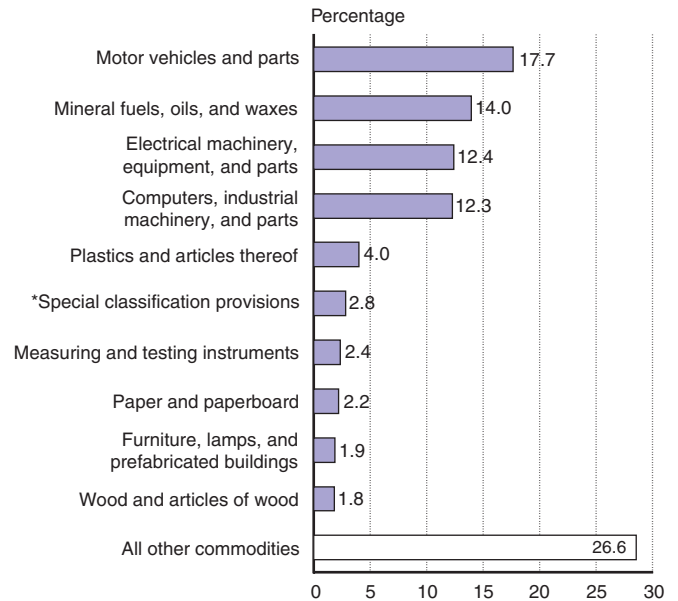
mont. Of these states, Vermont's decline was steepest, 31 percent, reflecting a sharp drop in trade with Canada.

## Major Commodities Transported

Ten commodity groups, with shipments valued at \$619 billion, accounted for 71 percent of all U.S.-NAFTA freight shipments in 2006. Exports of these top 10 commodity groups were valued at \$243 billion, amounting to 67 percent of the total U.S. exports to Canada and Mexico. Imports of the 10 commodity groups were valued at \$376 billion – 75 percent of the total imports from our NAFTA partners.

- Ranked by value, motor vehicles and parts was the leading commodity group transported between the United States and our NAFTA partners in 2006.
- Over \$1 out of every \$6 (17.7 percent) of freight shipments between the United States and its NAFTA partners involved motor vehicles and parts, totaling \$153 billion. Of this, \$107 billion was traded with Canada and \$45 billion was traded with Mexico.
- Motor vehicles and parts was the leading commodity in U.S.-Canada land mode trade and second for U.S.-Mexico land mode trade.
- The dominance of motor vehicles and parts reflects the continued integration of automotive production across the borders of the three countries.

## Top 10 Commodities' Share of the Value of U.S. Merchandise Trade with Canada and Mexico by All Modes: 2006



**NOTE:** \*\*Special classification provisions\*\* is primarily made up of U.S. goods exported and returned without having been improved in value or condition for imports and an estimate of low value shipments for exports.

**SOURCE:** U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data, March 2007.

### About the report

This article was prepared by Michael J. Sprung, International Transportation Specialist, of the Bureau of Transportation Statistics. Felix Ammah-Tagoe and Steve Beningo provided special assistance. BTS is a component of DOT's Research and Innovative Technology Administration.

This Special Report presents findings from the BTS TransBorder Freight Data. Released monthly, the TransBorder data presents statistics on freight movements between the United States and our North American trading partners—Canada and Mexico.

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#### Data -

- **TransBorder Freight Data**—monthly release of U.S.-Canada and U.S.-Mexico trade data
- **Border Crossing/Entry Data**—monthly data on incoming vehicle crossings from Canada and Mexico
- **Commodity Flow Survey**—value, weight, and ton-miles by commodity, mode, and origins and destinations

#### Reports -

- *America's Container Ports: Delivering the Goods*
- *North American Freight Transportation 2006*
- *America's Freight Transportation Gateways 2004*
- *Freight in America*