

# STATISTICAL BRIEF

SERIES

## Goods Movement Within the U.S. Supply Chain

### Motor Vehicles and Vehicle Parts Profile<sup>1</sup>

June 2024

#### INTRODUCTION

Imports and exports from the Port of Baltimore halted when the container ship Dali allided with the Francis Scott Key Bridge on March 26, 2024. The Key Bridge collapse focused attention on the motor vehicle and parts supply chain as the Port of Baltimore is a major node in it. This statistical brief focuses on the movement of motor vehicles and parts within the U.S. supply chain, including their origins, destinations, and means of transport between the two.

#### ECONOMIC IMPACT

In 2022 the Nation's 235 million licensed drivers drove an estimated 3.2 trillion miles in their 283.4 million motor vehicles [U.S. Department of Transportation and Federal Highway Administration 2022]. In addition, there are 3.3 million people employed in the fields of motor vehicles and parts manufacturing, wholesalers, and dealers for a total annual payroll of \$211.9 billion dollars.<sup>2</sup> [U.S. Census Bureau 2021].

#### U.S. ORIGINS AND DESTINATIONS OF MOTOR VEHICLES AND MOTOR VEHICLE PARTS

There were 216 million short tons of motor vehicles and parts<sup>3</sup> (FAF SCTG 36) transported within, outbound from, and inbound to the United States in 2022, worth \$1.536 trillion dollars [U.S. Department of Transportation Bureau of Transportation Statistics and Census Bureau 2012]. Motor vehicles and parts represented 8% of the total value of commodities moved within, outbound, and inbound in the United States in 2022 [U.S. Department of Transportation Bureau of Statistics and Federal Highway Administration n.d.].

A small number of states produce most motor vehicles and parts for trade within and outside the United States. Michigan (14% of total tons produced) and Indiana (13%) are the top two states. Of note is that they are neighboring states so a regional incident, such as a bad storm, could affect 27% of production.



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<sup>2</sup> The NAICS codes applied were 3361, 3363, 4231, and 441.

<sup>3</sup> The FAF does not report motor vehicle parts separately from motor vehicles and thus these statistics represent both.

**Table 1. Motor Vehicles and Parts Domestic Flow Origins: 2022**

Rank	State	Millions of tons of motorized vehicles and parts	Percentage of all tons produced
1	Michigan	21.7	13.7
2	Indiana	20.2	12.8
3	Kentucky	13.5	8.6
4	California	10.6	6.7
5	Texas	9.0	5.7
6	Ohio	8.0	5.1
7	Illinois	7.9	5.0
8	Alabama	7.0	4.4
9	Tennessee	6.6	4.2
10	Arkansas	6.6	4.1
11	Rest of U.S. States & Washington, DC	46.9	29.7

Source: U.S. Department of Transportation Bureau of Statistics and Federal Highway Administration. n.d. Freight Analysis Framework 5.5.1 [dataset]. Available at <https://faf.ornl.gov/faf5/Default.aspx>. Last accessed March 2024.

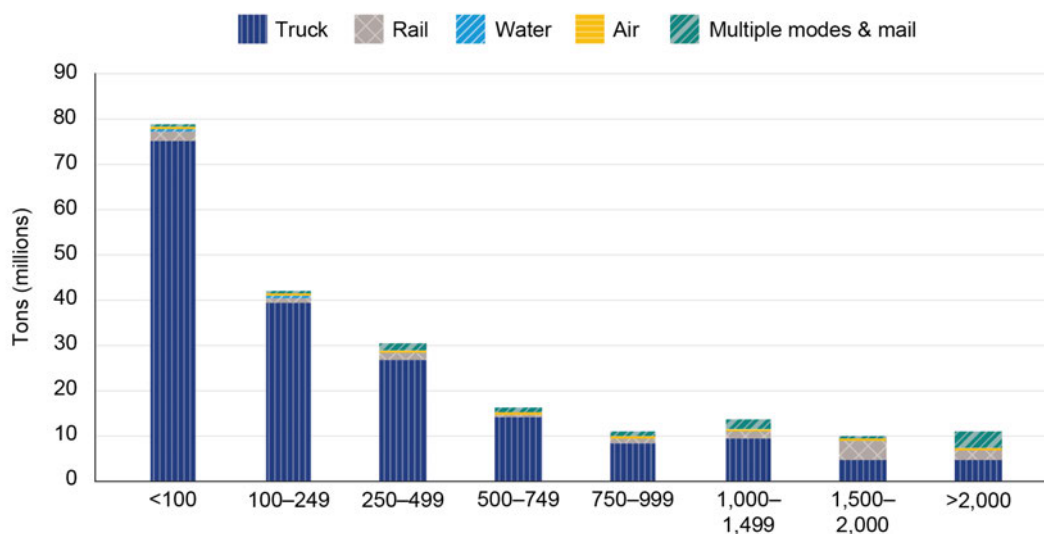
The complete list of the top ten states for origin of motor vehicles and parts for trade within the United States are listed in Table 1.

For the transportation of motor vehicles and parts within the United States, 37% of motor vehicles and parts tonnage traveled less than 100 miles from their origins to their destinations. Over half of the tonnage (57%) traveled less than 250 miles. Trucks are the most used method for transporting motor vehicles and parts within the United States as detailed in Figure 1.

### U.S. PORTS' ROLE IN THE MOTOR VEHICLE AND PARTS SUPPLY CHAIN

United States seaports play an integral role in the supply chain of motor vehicles and their parts (Figure 2) [U.S. Department of Transportation Bureau of Transportation Statistics and U.S. Census Bureau 2021].<sup>4</sup> In 2023, 54% of all motor vehicles and parts, by value, that were imported to the U.S. arrived via seaports. This is equivalent to \$185.3 billion or 15.3 billion shipping weight of trade (kgs) [U.S. Census Bureau n.d.b.].

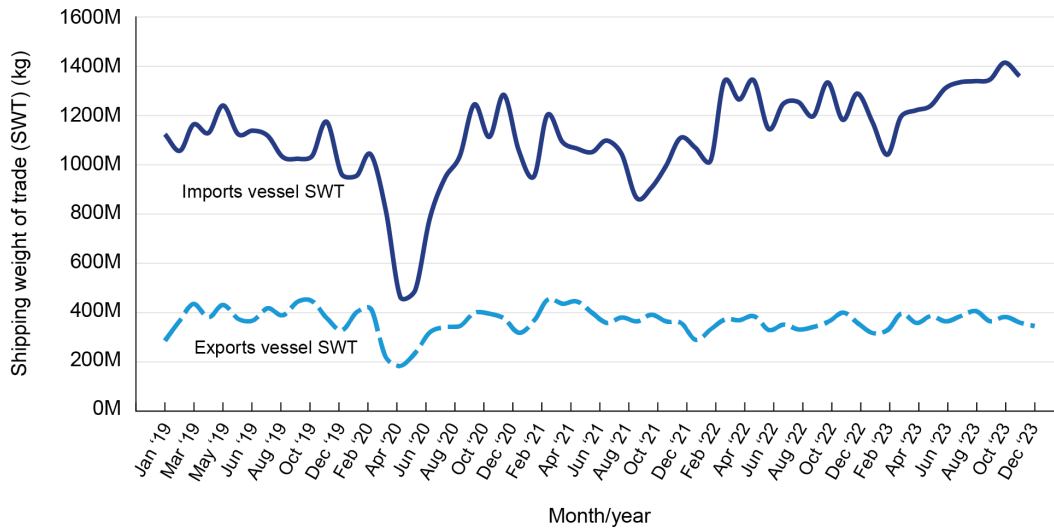
**Figure 1. Motor Vehicles and Parts Total Tonnage Movement by Distance Transported and Mode of Transport: 2022**



Source: U.S. Department of Transportation Bureau of Statistics and Federal Highway Administration. n.d. Freight Analysis Framework 5.5.1 [dataset]. Available at <https://faf.ornl.gov/faf5/Default.aspx>. Last accessed March 2024.

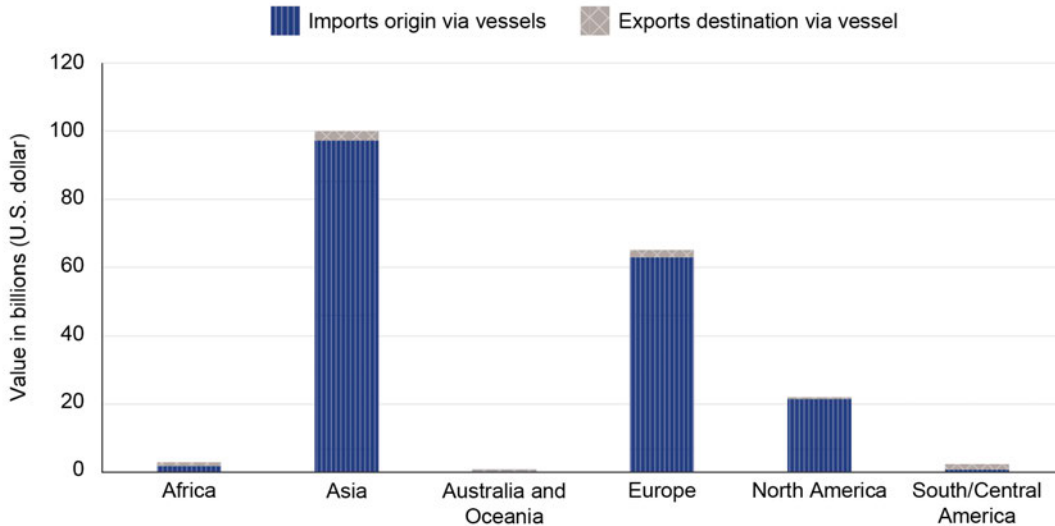
<sup>4</sup> The U.S. Census Bureau Schedule B commodity codes included were 8702, 8703, 8704, 8705, 8707, and 8708.

**Figure 2. Motor Vehicles and Parts, Shipping Weight of Imports and Exports via Vessel: January 2019–December 2023**



Source: U.S. Census Bureau. n.d.c. USA Trade Online *HS Port-level Data*. Available at <https://usatrade.census.gov/>. Last accessed March 2024.

**Figure 3. Motor Vehicles and Parts, Value of Import and Exports via Vessels by World Region: 2023**



Source: U.S. Census Bureau. n.d.c. USA Trade Online *HS Port-level Data*. Available at <https://usatrade.census.gov/>. Last accessed March 2024.

In addition, 42% of all motor vehicles and parts, by value, that were exported from the U.S. departed via seaports. This is equivalent to \$57.2 billion or 4.4 billion shipping weight of trade (kgs) [U.S. Census Bureau n.d.c.]. There was a dip in imports in April through July of 2020, which corresponds to the beginning of Covid-19 Stay-at-Home Orders

[Centers for Disease Control and Prevention 2020]. Since then, the overall trend is increasing. For exports, there was a dip in April through June of 2020, perhaps indicating exports were impacted a month sooner than imports although both imports and exports seem to rebound after this time.

Figure 3 illustrates the origins of U.S. imports, and destinations of U.S. exports of motor vehicles and parts via vessel by region. The largest import origin, and export destination, was Asia, followed by Europe [U.S. Census Bureau n.d.c.].

Just six ports handled over 50% of vehicles and parts moved by vessel at U.S. Ports in 2021, the latest available data [U.S. Department of Transportation Bureau of Transportation Statistics 2021].<sup>5</sup> Table 2 lists the top 10 U.S. ports by vehicles and parts tonnage; these handle 70% of total vehicles and parts tonnage. In addition, they are concentrated on the Atlantic Coast. Thus, disruptions to any of these ports would cause supply chain disruptions for the vehicle and vehicle parts supply chain.

**MOVEMENTS BETWEEN THE UNITED STATES, CANADA, AND MEXICO**

According to the Transborder Freight Data, \$271.4 billion of motor vehicles and parts (HTS 87 Vehicles Other than Railway)<sup>6</sup> were traded with Canada and Mexico in 2023. Of which, \$113.7 billion was traded with Canada and \$157.7 billion was traded with Mexico. Imports accounted for 68.3% of the trade and exports accounted for 31.7% of the trade. That year motor vehicles and parts was the top commodity traded with both Canada and Mexico [U.S. Department of Transportation Bureau of Statistics n.d.].

Truck was the leading transportation mode for motor vehicles and parts (\$148.4 billion, 54.7%), followed by rail (\$94.1 billion, 34.7%), and vessel (\$22.6 billion, 8.3%). The top three U.S. ports for motor vehicles and parts (aka Vehicles Other than Railway) were Laredo, Texas (\$80.2 billion), followed by Detroit, Michigan (\$51.7 billion), and Port Huron, Michigan (\$25.5 billion) [U.S. Department of Transportation Bureau of Statistics n.d.].

**Table 2. Top 10 Ports by Vehicles and Parts Tonnage: 2021**

Rank	Port name	Total tonnage (millions)
1	Port of New York and New Jersey, NY & NJ	3.2
2	Port of Los Angeles, CA	2.3
3	Port of Long Beach, CA	2.1
4	Port of Savannah, GA	1.8
5	Port of Charleston, SC	1.8
6	Baltimore, MD	1.7
7	Port of Brunswick, GA	1.2
8	Jacksonville, FL	1.2
9	Port of Houston Port, TX	1.0
10	Port of Virginia, VA	0.9

Source: U.S. Department of Transportation Bureau of Transportation Statistics. 2021. 2021 data (latest available) provided by U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center. Special tabulation as of November 2023.

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<sup>5</sup> To be consistent with the Port Performance Annual Report to Congress, the source for total tonnage was USACE and the latest available data as of the publishing of this report was 2021.

<sup>6</sup> Harmonized Tariff System: 87 Vehicles, other than railway or tramway rolling stock, and parts and accessories thereof.

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