REPORT

Freight Railroads & International Trade

The Association of American Railroads — the world's leading railroad policy, research, standard setting and technology organization of the U.S. freight rail industry —assessed the role that trade plays for freight railroads.

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ASSOCIATION OF AMERICAN RAILROADS

Summary

Globalization, technological innovation and international trade dominated the 2016 presidential election and continue to drive U.S. policy debates, including those related to tax reform and free trade agreements. Most notably, President Trump has vowed to renegotiate multilateral and bilateral trade agreements, largely on his belief that current trade deals have hindered American manufacturing, labor and economic growth.

Key Takeaway

Without freight railroads, American industry and consumers could not participate in the global economy anywhere near as fully as they do today. Limiting trade might save some jobs, but it also prevents other jobs — and the huge productivity and quality of life advancements they could entail.

Globalization has harmed some U.S. workers, and policymakers should work to ameliorate that harm. However, shrinking from America's central role in international trade would significantly weaken our nation's economy, our standard of living and our quality of life. Policymakers must not deprive Americans of the tremendous advantages and opportunities brought about by engaging fully in the global economy.

Privately owned freight railroads — an industry that connects and serves nearly every industrial, wholesale, retail and resource-based sector of the economy — offers a distinct perspective on how trade powers our economy.

The Association of American Railroads (AAR) — the world's leading railroad policy, research, standard setting and technology organization of the U.S. freight rail industry — assessed the role that trade plays for freight railroads.[1] Prior analysis conducted in 2016 shows spending by Class I railroads (the seven largest U.S. freight railroads) created nearly $274 billion in economic activity, generated about $33 billion in state and federal tax revenues and supported almost 1.5 million jobs nationally in 2014 alone.[2]

The new data regarding trade show a huge swath of freight rail operations — in terms of personnel, equipment and revenue — are directly supported by the international trade that American companies conduct. In fact, analysis shows:

42%
of rail carloads and intermodal units are directly associated with international trade.

35%
of annual rail revenue is directly associated with international trade.

50,000
rail jobs, worth over $5.5 billion in annual wages and benefits, depend directly on international trade.

Helping American workers displaced by trade agreements is a worthy undertaking, but policymakers must be careful not to enact measures that roll back U.S. participation in trade and potentially harm more workers than they help. Doing so would undermine one of the nation's most essential industries and an essential partner to so many other U.S. industries.

[1] Sources: 2014 STB Waybill Sample, other government data, ports, Google Earth. Waybill Sample contains data from a stratified sample of waybills submitted each year by freight railroads to the Surface Transportation Board. Each waybill contains, among other things, information on the origin and destination of the shipment and the volume and type of product moved. 2014 was the most recent data available at the time of the analysis.

[2] Darius Irani, et al, Economic and Fiscal Impact Analysis of Class I Railroads, May 2016. See appendix for freight rail's relation to specific commodities in the same year.

Railroads and International Trade

By linking businesses to each other here and abroad, freight railroads have played a crucial role in America's economic development for more than 185 years.

American life is driven by employment and consumption, which is made possible by domestic and international trade. This trade depends on manufacturing and creating goods and services, transporting them to market and then selling them via various retail means — in person or through ecommerce.

The chain is integrated, which largely requires a free flow of goods. Undo part of it — including rail, which the data show is key to the value chain — and policymakers risk undoing today's economic framework and greatly affecting American life as it is experienced today.

Based on federal government data from the U.S. Surface Transportation Board and other government and industry sources, in 2014 international trade accounted for an estimated:

- **35% of U.S. rail revenue** — $26.4 billion out of $75.1 billion in total revenue.
- **27% of U.S. rail tonnage** — 511 million tons out of a total of 1.88 billion tons.
- **42% of the carloads and intermodal units U.S. railroads carried** — 13.4 million units out of 32.2 million total units carried (Figure 1).

Key Takeaways

1. Simple import-export models of trade do not reflect the complexities of modern production processes where goods may cross borders several times during production with the final product being distributed worldwide.
2. Trade patterns reflect the deep integration of the three North American economies over the last two decades.
3. Rail trade patterns are complex and becoming more so as innovative customer logistics solutions are developed in the marketplace.
4. New production processes and products have provided new international rail movement opportunities.

International Trade as a Share of Rail Traffic in 2014

	Rail Total	Trade Share	Trade % of Total
Revenue (billions)	$75.1	$26.4	35.2%
Tons (millions)	1,879.4	511.0	27.2%
Units (millions)*	32.2	13.4	41.6%

FIGURE 1
**Carloads and intermodal containers and trailers*
Source: AAR analysis of government and other data

What the Numbers Mean

The 511 million rail tons associated with international trade in 2014 included:

- **329 million** tons of exports.
- **171 million** tons of imports.
- **11 million tons** that pass through the United States without going to U.S. market and begin and end their journey elsewhere (e.g., Canada to Mexico or Mexico to Canada, or Canadian or Mexican goods imported or exported through U.S. ports).

Of the $26.4 billion in U.S. freight rail revenue associated with international trade in 2014, $9.6 billion was from intermodal containers and trailers, and $16.8 billion was from carload traffic — freight carried by boxcars, hopper cars, tanks cars or other types of rail cars (Figure 2). Rail revenue associated with exports ($13.3 billion) exceeded rail revenue associated with imports ($12.4 billion).

Because of data limitations, some rail traffic associated with international trade is not included in Figures 1 and 2. If it was, the share of rail traffic associated with international trade would be considerably higher. This rail traffic includes:

- Near-port transloading of imports to domestic containers.
- Shipments of domestic goods that are used as inputs to products that are ultimately exported.
- Shipments of domestic goods that have imported components.
- Shipments that are actually imports or exports but are not identifiable as such in available data.

U.S. Rail Revenue From International Trade

(in billions)

	Carload	Intermodal	Total
Imports	$7.2	$5.2	$12.4
Exports	$9.1	$4.2	$13.3
Pass Through	$0.5	$0.2	$0.7
Total	$16.8	$9.6	$26.4

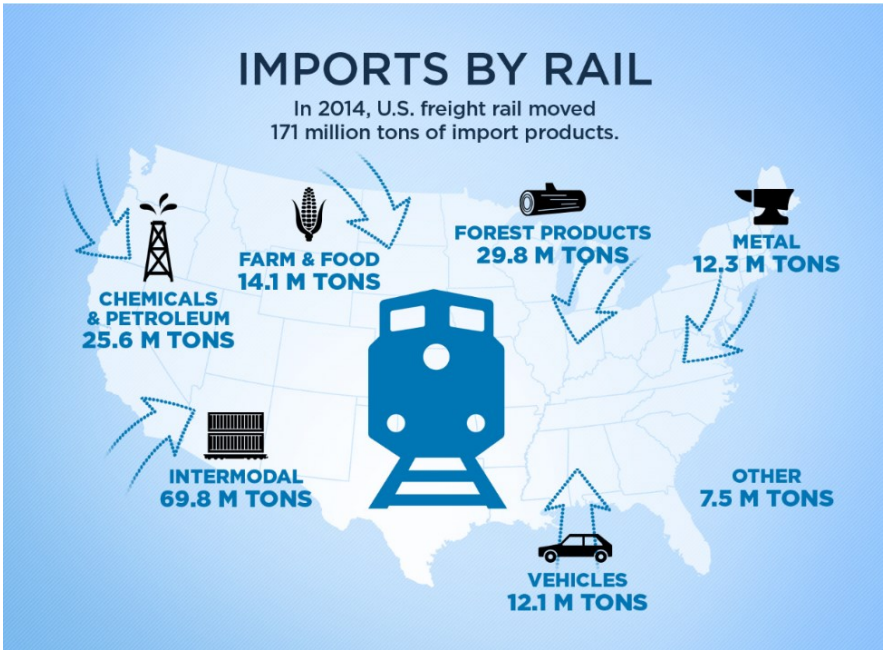
FIGURE 2

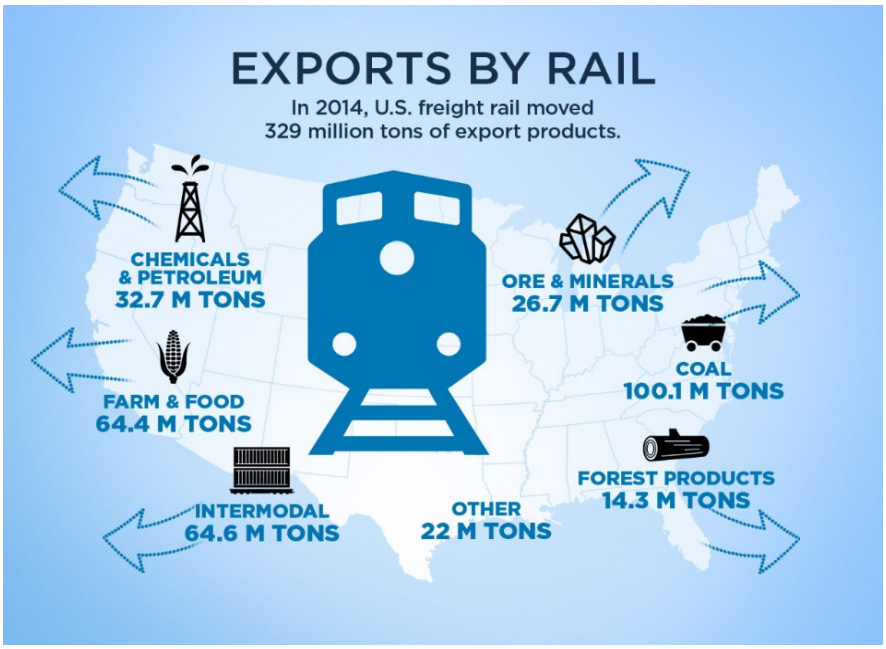
Source: AAR analysis of government and other data

How Trade Moves America

Rail movements associated with international trade include virtually every type of commodity railroads carry and involve every region of the country, including but not limited to:

- **Coal** for export out of ports in Maryland, Virginia, the Gulf Coast and the Great Lakes.
- **Paper** and forest products imported from Canada to the Midwest as well as produced in the Southeast U.S. and exported from the East and Gulf Coast.
- Imports and exports of Canadian and Mexican **automotive** products to and from auto factories in dozens of U.S. states, reflecting the deep integration of the North American auto industry and the logistics processes of the North American nations.
- Containers of **consumer goods** from Asia and Europe coming ashore in Los Angeles, Long Beach, Oakland, Seattle, Savannah, Norfolk, New York and many other ports.
- **Plastics** shipped by rail from Texas and Louisiana to the East and West Coasts for export to Europe and Asia.
- **Grains** and food products grown in America's heartland and moved to market in Mexico, Europe and Asia.
- **Iron ore** mined in Michigan and shipped by rail to Great Lakes ports.





How Trade Moves American Industries

By making huge investments in freight rail infrastructure every year, railroads ensure that the network provides cost-effective transportation so that various industries can thrive. Research from Towson University's Regional Economic Studies Institute recently quantified the massive ripple effect of U.S. freight rail transportation across industries. The findings below are based on 2014 information, the most recent data available:

Steel and Steel-Related Commodities

Steel is the most widely used metal on earth, and the U.S. is the world's third largest steel producer.

- **$9.6 billion** spent on rail shipping for steel and related products
- **24,500+** direct jobs supported
- **$23.4 billion** economic output generated

Drilling-Related and Crude Oil Commodities

The U.S. is the third largest producer of crude oil in the world and the number one consumer of petroleum products (derived from crude oil).

- **$5.8 billion** spent on rail shipping
- **4,500+** direct jobs supported
- **$14.1 billion** economic output generated

Power Generation and Distribution Commodities

Power generation and distribution commodities, such as coal, are some of the most essential products transported by Class I railroads.

- **$14.2 billion** spent on rail shipping
- **36,000+** direct jobs supported
- **$34.6 billion** economic output generated

Building Construction Commodities

The construction industry plays a critical role in the national economy, employing more than 6.6 million people as of August 2016, and adding approximately 4% to the national GDP.

- **$10.1 billion** spent on rail shipping
- **25,500+** direct jobs supported
- **$24.6 billion** economic output generated

Agriculture Products

Approximately 25% of chemical products shipped in the U.S. are shipped via rail and fertilizers are a substantial portion.

- **$11.2 billion** spent on rail shipping
- **28,500+** direct jobs supported
- **$27.4 billion** economic output generated

Trade Benefits the U.S. Economy

The world has changed. Virtually no one in the world today is self-sufficient: we all obtain goods and services of value from someone else in exchange for something of value we offer in return. [3]

Put another way, we all trade.

We trade because we produce some goods or services at costs lower than the costs our trading partners would incur to produce those same goods or services.

Our trading partners may be across the street or on the other side of the world, but the principle is the same: we trade because we produce some goods or services at costs lower than the costs our trading partners would incur to produce those same goods or services.

Trade is not a zero-sum game in which one side "wins" and the other "loses." Instead, it is a way for both sides to benefit by maximizing the best economic offerings to make efficient use of resources to increase material welfare.

Because trade is almost always voluntary, people and firms gain from it, otherwise they would not do it. The flip side is that increased barriers to trade prevent people from making exchanges they want to make and force people to pay more for what they want.

Trade may lead to fewer jobs at some firms that compete with imports, but it also leads to more jobs at firms that export and at firms that use imports to manufacture products for the domestic market.

One representative study,[4] by the Center for Business and Economic Research at Ball State University in June 2015, looked at the 5.6 million U.S. manufacturing jobs lost between 2000 and 2010, the largest decline in manufacturing employment in U.S. history. The study found that just 13%, or around 750,000 of the 5.6 million job loss over 10 years, was due to direct imports and import substitution. By contrast, the study found that productivity growth due to automation and other technologies accounted for more than 85% of the manufacturing job losses, dwarfing the trade impact.

Robust international trade means more jobs for U.S. railroaders.

Robust international trade means more jobs for U.S. railroaders. The rail trade data discussed above implies that approximately 50,000 rail jobs, worth over $5.5 billion in annual wages and benefits, depend directly on international trade. This does not include other significant job-related impacts, including employees at ports who handle shipments moving by rail, jobs at firms that supply goods and services to railroads and others in support of trade-related rail movements, and secondary and tertiary job impacts derived from the expenditures of railroad employees, port employees and their suppliers. These job-related impacts help explain why focusing solely on workers at firms that compete with imports is shortsighted.

Other significant job impacts include:

- Jobs in ports associated with trade-related rail movements.
- Suppliers to railroads of products needed to support international rail movements.
- Secondary job impacts derived from the expenditures of rail and port employees and their suppliers.

While policymakers debate ways to help U.S. workers displaced by globalization, they must exercise caution and maintain the remarkable gains our economy has made through engagement in international trade. Stepping away from the global economy will cause irreparable harm to not just the rail industry but the economy as a whole.

[3] The AAR Policy & Economics Department conducted this research and offers this analysis.
[4] Michael J. Hicks and Srikant Devaraj, The Myth and Reality of Manufacturing in America, June 2015.