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ASSOCIATION OF AMERICAN RAILROADS

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August 16, 2024

Ms. Cynthia Brown
Chief, Section of Administration
Surface Transportation Board
395 E Street, SW
Washington, DC 20423

Re: *Growth in the Freight Rail Industry*, EP 775

Dear Ms. Brown:

Pursuant to the July 15, 2024 Notice of Public Hearing in the above-captioned proceeding, on behalf of the Association of American Railroads (AAR) please find enclosed the written testimonies of Ian Jefferies, President and Chief Executive Officer of AAR, and Rand Ghayad, Ph.D., Chief Economist and Senior Vice President, Policy and Economics, of AAR. Please feel free to reach out to me if you need anything further.

Respectfully submitted,

J. Frederick Miller Jr.
Associate General Counsel & Government
Affairs Liaison
Association of American Railroads

BEFORE THE

SURFACE TRANSPORTATION BOARD

GROWTH IN THE FREIGHT RAIL INDUSTRY

DOCKET NO. EP 775

Written Testimony of
Ian Jefferies
President & Chief Executive Officer
Association of American Railroads

August 16, 2024

Association of American Railroads
425 Third Street SW
Washington, DC 20024
202-639-2100

Pursuant to the July 15, 2024 notice from the Surface Transportation Board (STB or Board), and on behalf of the Association of American Railroads (AAR), I am pleased to offer this written testimony on *Growth in the Freight Rail Industry*. AAR's freight railroad members include the six Class I railroads, as well as scores of short line and regional railroads. Together, these railroads account for the vast majority of freight railroad mileage, employees, and traffic in the United States. Along with their Mexican and Canadian counterparts, U.S. railroads form an integrated, continent-wide network that provides the world's best freight rail service.

<u>Freight Rail Growth Benefits Everyone.</u>

As the Board recognizes, smart, sustainable growth in rail traffic is in everyone's interest. It is in the freight railroads' interest to grow their businesses and increasing the percentage of freight that moves by rail has many positive benefits for the American public. Indeed, rail is the safest and most environmentally friendly method of moving freight over land, while also reducing the burden on the American taxpayer relative to other modes.

With regard to safety, rail is an extremely safe way to move goods, both absolutely and in comparison to other modes. And rail continues to get even safer. Since 2000, the total train accident rate is down 22%, with the mainline accident rate down 40%. The 2023 hazmat accident rate is the lowest ever, falling 75 percent from 2000 to 2023. According to the Bureau of Transportation Statistics, the last fatality caused by hazardous materials transported by rail in the United States occurred more than a decade ago. That safety record compares very favorably to hazardous materials moved on highways.[1] 2023 also saw the lowest rate ever for Class I employee casualties. And, according to data from the Bureau of Labor Statistics, in 2022 (the most recent year available), railroads had a lower employee injury rate than most other major industries, including trucking, airlines, agriculture, manufacturing, construction, and even grocery stores.[2]

Railroading is also the most environmentally friendly way to move goods over land. Increasing the percentage of goods moved by rail is a part of the solution to climate change. According to the EPA, freight railroads account for just 0.5% of total U.S. greenhouse gas emissions and just 1.7% of transportation-related greenhouse gas emissions. The nation's freight railroads, on average, move one ton of freight nearly 500 miles per gallon of fuel. This means that freight railroads are, on average, three to four times more fuel efficient than trucks. If just 10% of the freight currently carried by our largest trucks went by rail instead, greenhouse gas emissions would fall by more than 20 million tons annually. That is the equivalent of taking four million cars off the highways or planting 300 million trees. These are important benefits that can be realized through freight rail growth.

In addition, because a single freight train can replace several hundred trucks, moving more freight by rail reduces highway congestion and wear and tear on public roads. Unlike the privately funded railroads, highway infrastructure is taxpayer funded. And if policymakers were

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1 *See* Bureau of Transportation Statistics, Hazardous Materials Fatalities, Injuries, Accidents, and Property Damage Data, available at: https://www.bts.gov/content/hazardous-materials-fatalities-injuries-accidents-and-property-damage-data.

2 *See* Bureau of Labor Statistics, *Injuries, Illnesses, and Fatalities*, available at: https://www.bls.gov/iif/nonfatal-injuries-and-illnesses-tables/table-1-injury-and-illness-rates-by-industry-2022-national.htm.

to increase truck size and weight allowed on highways, taxpayers' subsidies will only increase. According to the Congressional Budget Office, already the current funding rates for the Highway Trust Fund (HTF) are simply not sustainable going forward. Starting in 2028, the HTF will see an annual revenue shortfall which will rise to nearly $50 billion in 2034 (the final year of the CBO forecast) or a cumulative shortfall of nearly $280 billion.[3] If user-fees are not adjusted, that hole will be funded by federal taxpayers, as has been the case for nearly two decades. Accordingly, moving more freight by rail is beneficial to the taxpaying public at large.

Freight Rail Growth Requires Capacity and Additional Capacity Requires Time, Investment, and Thoughtful Analysis.

The demand for freight rail is generally derived from broader economic trends and depends on factors outside the railroads' control – or what economists call "derived demand." Firms, even entire industries, can and do change rapidly and unexpectedly, and railroads must be able to deal with that flux. For example, the rise of cheap, abundant, domestic natural gas coupled with the expansion of government policies that support green energy production have significantly reduced coal traffic. For railroads, these broad, often-unanticipated changes are reflected in the volumes, and the types and locations, of the commodities railroads are asked to transport. To successfully adapt to these challenges, railroads must be flexible and innovative, while maintaining the efficiency and productivity essential to sustaining their long-term financial health. Adding capacity in a smart way can enable railroads to meet changing demand and seize opportunities to grow when they present themselves. At the same time, having too

[3] *See* Congressional Budget Office, HTF Baseline Feb. 2024, available at: https://www.cbo.gov/system/files/2024-02/51300-2024-02-highwaytrustfund.pdf.

much unused capacity is inefficient and can drive up the cost to operate the railroad. We saw the results of excess capacity, coupled with comprehensive rate regulation, in the 1970s, prior to passage of the Staggers Act in 1980. Finding the sweet spot is what our nation's railroads must do to stay financially healthy and continue to provide freight rail service that is the envy of the world.

Complicating matters, the railroads are not like a retail store that can add more shelf space for an item that is suddenly in high demand, and then remove it when demand cools. Adding freight rail capacity requires long-term investments in people, equipment, and infrastructure. Employees are the railroads' most valuable resource, demonstrated by our highly compensated and extensively trained workforce. The results of the most recent bargaining round solidified railroading as one of the most lucrative professions in the U.S. economy. The agreement ushered in a number of substantial benefits, including a 24% wage increase spanning the five-year period from 2020 to 2024. By the end of the current contract, the average railroad worker's total annual compensation package, including pay and benefits, is projected to reach $160,000. The agreement also enhanced an already exemplary healthcare plan, including a low-cost share for workers. More than 90% of craft employees now have paid sick days. And, in addition to top-tier compensation and benefits, railroads invest time in their employees. On average, new entry-level employees, depending on craft, can take six months or more to become hired, trained, and qualified – during which these individuals receive compensation and benefits. Adding new workers takes time and money, so railroads do it carefully and thoughtfully. But having the right number of employees is a core part of strategic planning to enable railroads to take advantage of growth opportunities, and AAR's members are committed to doing just that.

Additionally, locomotives are expensive, long-term investments. Freight railroads generally own several different types of locomotives (*e.g.*, switchers, line-hauls). Locomotives are at least a thirty-year investment and depending on type can cost more than $3 million each, with annual maintenance costs averaging about $125,000 per year. Delivery times depend upon shop capacity and overall industry demand and can take a year or more from the order date. In short, adding locomotives is neither fast nor cheap; it's a long process and a long-term commitment. (And I would note this investment decision is made even more challenging by increasing regulatory uncertainty, as I discuss below). Forecasting expected demand into the mid- and longer-term future and matching it against the assets that will be required to take advantage of it is both art and science, and getting it right requires substantial experience and expertise in freight rail operations and markets. Fortunately, railroads have nearly two centuries of real-world experience and expertise to draw upon and are adept at leveraging new data points and trends to inform their decisions.

Finally, adding physical capacity to outdoor rail infrastructure also requires time and money. It can take over a year to plan and build even a small project, like a siding. Larger projects, especially those that require extensive environmental review, can take much longer—a decade or more. These long time horizons make investment choices especially vulnerable to shifting economic trends. A product that may be in high demand in one year and require specific infrastructure may not be there the next year. These uncertainties require that railroads plan appropriately and make smart decisions on their long-term infrastructure investments.

Acquiring land and building infrastructure, especially for specialized rail facilities, not only takes time, but also capital. Unlike most of our modal competitors (*e.g.*, trucks, barges, and airlines), America's privately owned freight railroads operate almost exclusively on infrastructure they own, build, maintain, and pay for themselves, including a nearly 140,000-mile network of outdoor assets. Rail spending to improve and maintain these networks over the last 15 years has totaled on average $23.9 billion annually, or $64.4 million each day. To put this into perspective, that is $1 billion more each year than the historic investments Congress made in *rail and multi-modal programs* in the *Infrastructure Investment and Jobs Act* (IIJA) and the fiscal year 2023 Omnibus combined. The average U.S. manufacturer, like those that railroads serve, spends about 3% of annual revenue on capital; railroads spend on average about 18% of revenue on capital. Because of the expense and time such investments can take, each must be carefully chosen, backed by data and expert insights, and have the traffic necessary to justify the expenditure. As an industry, railroads have experienced the downsides of underinvestment, but from that have learned the value of continuing to reinvest the necessary resources into their systems to grow.

<u>Policies and Regulations Can Incentivize -- or Impede -- Growth.</u>

As I've explained above, growth in the percentage of freight that moves by rail is something the railroads want, and that benefits the American public as well. But *smart* growth is essential -- so that we do not relive the 1970s -- and smart growth is hard and risky, because it requires predicting the future and making substantial investments based on those predictions. To be direct, a policy and regulatory environment that increases investment risk and stifles innovation impedes growth; however, an environment that provides regulatory balance and certainty can foster innovation and growth. This is an area where the Board can help.

For example, one recent regulatory action that threatens railroad growth across the country is the California Air Resources Board's (CARB) *In-Use Locomotive Regulation* (CARB rule). The CARB rule is a departure from the decades of collaborative efforts between railroads and CARB to reduce emissions. This history of collaboration has been what railroads have relied upon in making their investment decisions for growth. But in a break from that history, the CARB rule bans the use of currently available locomotives by a date certain and mandates railroads deposit funds into a spending account based on energy consumption—approximately $800 million a year for each Class I operating in California.

While the CARB rule raises numerous important legal issues, for the purposes of this proceeding, it represents an excellent example of how regulation can chill growth in rail's share of the freight market. The CARB rule cuts short the useful life of already-purchased, long-term investments, and cuts off new investment in the locomotives that are currently commercially available. Decisions to invest resources in California are being negatively impacted right now, but so are decisions to invest elsewhere. Stranding capital through regulatory fiat does not encourage future capital investment. And businesses that cannot reasonably invest in growth will, in turn, be poor investment choices for those with capital to invest. This is a downward cycle we must not allow.

The industry appreciates the Board's letter to EPA regarding the CARB matter. Clarity of jurisdiction over transportation by rail, and the uniformity thereof, creates certainty and reduces the inherent risk of such expensive, long-term investments. On the other hand, a patchwork of different state or local regulations—or even just the threat of them—creates significant risk to the industry and, ultimately, decisions to grow capacity. Simply put, regulatory certainty is imperative to making smart investment decisions. The industry encourages the Board to help preserve a uniform and more predictable regulatory environment for the railroads.

Another impediment to major infrastructure investments can be the time and uncertainty associated with permitting. Railroads don't seek to circumvent the applicable environmental laws and the federal permitting processes, but too often these processes and reviews are overbroad, inefficient, expensive, and unnecessarily delay projects, sometimes for years, without a corresponding benefit.

For example, many bridge projects, even simple replacements, can take a significant amount of time due to the multiple federal and state agencies that must review the project. Oftentimes these reviews are not conducted concurrently, but proceed on whatever timeline the agency employs. One rail bridge project was taking so long given the various agencies involved, it required policymakers to deem it an emergency to expedite the permits. Other member railroads have bridge projects that have been delayed several years due to ongoing state historic preservation reviews that are layered on top of the federal section 106 historical review process. This frustration is compounded by the Advisory Council on Historic Preservation's (ACHP) failure to implement section 11504 of the Fixing America's Surface

Transportation Act (FAST Act), which required ACHP to issue a final exemption from historic preservation reviews for railroad rights-of-way that is consistent with the exemption issued for interstate highways.

It is not just bridge projects that take time. One railroad has a grade separation project and a lead track expansion project that have been substantially delayed -- despite containing only railroad and stormwater ditches that should be non-jurisdictional -- due, in part, to the relevant Army Corps region placing a pause on issuing stand-alone jurisdictional determinations. Usually, a jurisdictional determination provides certainty for project sponsors, but without it the member is hesitant to proceed at its own risk. Uncertainty in the length of reviews, and even whether such reviews are required, can create unnecessary delay for important railroad projects or even risk them not being undertaken at all. And, if agencies expand the scope of environmental reviews beyond the agency's authority to mitigate impacts that can significantly delay or even kill a project necessary to grow or reach new markets. Of course, the opposite is also true. Streamlining permitting processes for critical infrastructure projects will help railroads build new, modern infrastructure to safely, reliably, and sustainably meet future freight growth needs.

Technological innovation can also enable growth, but the regulatory environment must encourage such advancement. For example, Automated Track Inspection (ATI) vehicles can inspect hundreds of thousands of track miles yearly and can spot defects and concerns invisible to the human eye. And because ATI can be utilized during revenue service—instead of shutting down or slowing service over a particular track to permit manual inspections—this technology can increase capacity without the need for additional infrastructure. Indeed, the data shows that the blended use of ATI with visual track inspections increases rail safety. However, for the last two years the Federal Railroad Administration has refused to permit the railroads to efficiently utilize – or even broadly pilot – this technology, even though the record of its effectiveness is undisputed. This has been a dramatic about-face in policy regarding ATI which one railroad was forced to go to court to try and rectify.[4] Regulatory uncertainty like this complicates and even disincentivizes future technological investment decisions. But if policies create certainty for the regulated entity and encourage future innovation, efficiencies can be realized that make railroads safer and more competitive.

Finally, since this is an STB hearing, I must note that the balanced economic regulatory environment since the Staggers Act has been foundational to the development of the financially healthy industry we see today. Financial health is obviously essential for growth. There are two important components of that balanced economic policy that I would like to feature here because they have directly enabled growth. The first is the freedom to contract. As Congress appreciated in 1980, private contracts allow customers to bargain for the service they need, and railroads to obtain the traffic commitments they need for the investments necessary to grow. The ability to offer customized service products to shippers keeps rail competitive with other modes. The second important feature of our balanced regulatory scheme is the presumption that rail traffic that is competitive should not be regulated. Exemptions for competitive categories of traffic – like intermodal -- create regulatory certainty that has allowed remarkable growth in a number of sectors, especially those that are truck-competitive. Policies

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[4] Bill Stephens, *Federal court orders FRA to allow BNSF Railway to expand track inspection program*, Trains, (June 27, 2024) available at: https://www.trains.com/trn/news-reviews/news-wire/federal-court-orders-fra-to-allow-bnsf-railway-to-expand-track-inspection-program/.

or regulations that undermine or alter these important aspects of the current regulatory regime risk stifling rather than facilitating freight rail growth.

Modal Equity Will Aid Growth.

Railroads compete vigorously with other modes of transportation. While our trucking colleagues are some of our strongest partners, they are also fierce competitors. As noted above, railroads offer numerous benefits to the American public, including environmental benefits, safety benefits, and taxpayer benefits. But in order for the rail industry to convert substantial traffic volumes from road to rail, increased modal equity is essential. If government, through regulations or other policies, places a thumb on the scale in favor of other modes, it can make it more difficult for railroads to compete, much less grow.

For example, as noted above taxpayers subsidize an increasingly large part of the infrastructure used by railroads' competitors. If those funding mechanisms are not based on user-fees that cover the full costs of the infrastructure utilized, then taxpayers end up bailing out the trust funds and ultimately subsidizing other modal infrastructure. Since 2008, the HTF has required $275 billion in taxpayer bailouts.[5] Going forward it only gets worse. Assuming no change in revenue sources and current spending plus inflation, the HTF will require nearly $280 billion just from 2028-2034.[6] This hole will only grow if policies to increase truck size and weight are adopted, as such commercial vehicles will only cause more damage to the publicly

[5] *See* Written Testimony of Chad Shirley, Principal Analyst Microeconomic Studies Division, CBO, *The Status of the Highway Trust Fund: 2023 Update*, Before the Subcommittee on Highways and Transit, Committee on Transportation and Infrastructure, U.S. House of Representatives (Oct. 18, 2023).

[6] *See* Congressional Budget Office, *HTF Baseline Feb. 2024*, available at: https://www.cbo.gov/system/files/2024-02/51300-2024-02-highwaytrustfund.pdf.

funded highways. On the other hand, freight railroads— not taxpayers—pay for the maintenance, improvement, and additional capacity of the nation's nearly 140,000-mile rail network. The result is a playing field that is uneven, and that makes it more difficult for railroads to compete for traffic and capital. Yet, we still do. The industry's commitment to leveling the playing field is unyielding, and we look forward to next Congress, when the opportunity to change such policies will present itself.

Likewise, railroads are fully committed to developing, testing, and incorporating new and emerging technologies to help improve safety, efficiency, and customer service, which makes growth possible. Indeed, railroads have spent millions doing so voluntarily because regulatory certainty allowed it. However, the oversight of emerging technologies—including automated systems—is increasingly divergent across the various modes of transportation. For example, DOT policies promoting development of automation in the trucking sector stand in stark contrast to DOT policies and practices concerning automation in the rail sector. The Federal Motor Carrier Safety Administration (FMCSA) and DOT are funding research and advancing policies for autonomous commercial motor vehicles (CMV).[7] FMCSA is also currently advancing a rulemaking on how "to establish a regulatory framework for [autonomous driver system or ADS]-equipped CMV operations" because it is "consider[ing] amendments to the

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[7] *See, e.g.,* FMCSA, Hazard Warning Devices for Automated CMVs (Apr. 9, 2023) (describing the goal of an FMCS-funded project involving the development and testing of a prototype system designed to autonomously deploy hazard warning devices for driverless, autonomous vehicles) available at: https://www.fmcsa.dot.gov/research-and-analysis/research/hazard-warning-devices-automated-cmvs; DOT, "U.S. Department of Transportation Funds Innovative Research Providing Vital Training for Next Generation of Transportation Leaders," (Feb. 21, 2023) (announcing millions for autonomous vehicle research), available at: https://www.transportation.gov/briefing-room/us-department-transportation-funds-innovative-research-providing-vital-training-next; DOT, *Autonomous Vehicles Comprehensive Plan*, (Jan. 11, 2021)(focusing on advancing a comprehensive approach to incorporating autonomous vehicles on the highways for freight and passenger transportation), available at: https://www.transportation.gov/av/avcp.

[Federal Motor Carrier Safety Regulations] to ensure the safe integration of ADS-equipped CMVs into interstate motor carriers' operations."[8] On the other hand, FRA recently went the opposite direction, mandating, in perpetuity, two people be in the locomotive cab for nearly all freight operations.[9] This regulatory about-face is unsettling, as historically rail staffing levels were a matter left to collective bargaining.

Furthermore, while the Class I railroads are investing millions into deploying digital inspection portals that use machine vision technology to detect defects on railcars at speed, policymakers are doubling down on requiring more manual inspections.[10] Similarly, policymakers are considering limiting train length – even though the safety of the industry has only improved over the past several decades – while also looking to increase truck size and weight. Different safety regulatory policies for different modes of transportation further distort the freight transportation market, tipping the scales in favor of those modes with fewer barriers to incorporating new technologies. Even so, railroads have successfully won truck-competitive

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8 FMCSA, *Safe Integration of Automated Driving Systems (ADS)-Equipped Commercial Motor Vehicles (CMVs)*, Supplemental Advanced NPRM, FMCSA-2018-0037 (Mar 20, 2023).

9 *See* FRA, *Train Crew Size Safety Requirements*, Final Rule, FRA-2021-0032, (mandating two-person crews on most freight locomotives).

10 *Compare* NS, "Norfolk Southern deploys second Digital Train Inspection portal in Georgia," available at: https://norfolksouthern.mediaroom.com/Norfolk-Southern-deploys-second-Digital-Train-Inspection-portal-in-Georgia; CSX, "Third CSX Train Inspection Portal Now in Operation," available at: https://www.csx.com/index.cfm/about-us/third-csx-train-inspection-portal-now-in-operation/; CN, "Machine Vision: Cutting Edge Innovation in Equipment Inspection" available at: https://www.cn.ca/en/stories/20190814-machine-vision; UP, "Railroad Tech: Rail Safety, Security and Visibility Innovations" available at: https://www.up.com/customers/track-record/tr072622-railroad-technology-safety-security-shipment-visibility.htm; *with* H.R. 8996, *Railroad Safety Enhancement Act of 2024*, sec. 105; and S.576, *Railway Safety Act of 2023*, sec. 105 (requiring additional rail car inspections).

traffic, especially on longer hauls, and the industry sees substantial opportunity for future growth given a projected intermodal tonnage increase of 28% by 2030.

Conclusion

While there are challenges, there are also opportunities, and if there is one takeaway from this hearing it is that railroads are committed to growing their share of freight traffic. Growth requires capacity and capacity requires time, investment, and thoughtful risk analysis to make smart decisions about long-term commitments of capital. Railroads have the requisite experience and expertise, and with the help of governmental regulations and policies – whether related to funding, safety, operations, or economics – that encourage additional investment, freight railroads can and will grow. And as the Board recognizes, growth in freight rail's share of the transportation market will deliver numerous benefits to all.

BEFORE THE

SURFACE TRANSPORTATION BOARD

GROWTH IN THE FREIGHT RAIL INDUSTRY

DOCKET NO. EP 775

THE ECONOMICS OF THE U.S. FREIGHT RAIL INDUSTRY

Written Testimony of

Dr. Rand Ghayad

Senior Vice President — Policy and Economics

Association of American Railroads

August 16, 2024

INTRODUCTION

My name is Dr. Rand Ghayad. I am the Chief Economist and Senior Vice President of Policy and Economics at the Association of American Railroads (AAR). In this submission, I am responding to the July 15, 2024, notice from the Surface Transportation Board (STB or Board), providing my comments on the recent trends and economic prospects for the U.S. freight rail industry. In my statement, I focus on the various economic forces, challenges, and opportunities that railroads must navigate as they work to grow their business.

The report is organized into five sections. Section I examines the current state of the U.S. freight rail industry, with a focus on recent traffic trends and the industry's financial health. Section II explores the demand for rail services, highlighting the industry's reliance on the overall health of the economy, specifically the performance of the goods-producing sector. Section III discusses the challenges — and opportunities — railroads are likely to encounter due to shifting market dynamics. Section IV addresses the re-investment needs of the railroads, highlighting the financial challenge for U.S. freight railroads of maintaining and expanding their infrastructure and equipment to ensure competitive, safe, and reliable rail service. Section V provides concluding remarks. A summary of my qualifications and experience appears at the end of this statement.

I. WHERE THE U.S. FREIGHT RAIL INDUSTRY STANDS TODAY

America's freight railroads operate the safest, most efficient, cost-effective, and environmentally sound freight transportation system in the world. The U.S. is home to over 600 freight railroads that form a nearly 140,000-mile integrated network, moving tens of thousands of railcars daily between thousands of origins and destinations. The overwhelming majority of these shipments arrive on time, in good condition, with acceptable levels of service, and at rates shippers elsewhere in the world would love to have.

Freight railroads are vital to the U.S. economy, handling around 40% of the nation's long-distance freight ton-miles — more than any other mode. They serve nearly every sector, including agricultural, manufacturing, and retail, by transporting enormous amounts of goods such as coal, grain, chemicals, automobiles, and millions of shipping containers each year. This capability supports hundreds of billions of dollars in annual economic output and enhances the global competitiveness of Americans industries.

Beyond economic contributions, railroads provide significant public benefits. They offer superior fuel efficiency, reduce greenhouse gas emissions, alleviate highway congestion, and save taxpayers money on highway construction and maintenance. The industry continuously strives for zero accidents, and the past decade has been the safest on record. In 2023, Class I railroads reported the lowest employee injury rate ever, and more than 99.99% of hazmat materials transported by rail arrived without incident.

For these reasons and more, increasing the volume of freight moved by rail is in the national interest. However, achieving this requires more than effort — it demands maintaining a competitive edge to navigate a complex and evolving transportation landscape.

I.A. Railroads face intense competition in their market.

The U.S. freight transportation market today is highly competitive. Shippers choose rail only when it offers a superior value proposition compared to other modes, such as trucking or barge transport. To secure and maintain this business, railroads must continuously demonstrate superior safety, efficiency, and cost-effectiveness.

Put another way, even if the overall freight market grows, railroads aren't guaranteed a share of it; they must possess adequate network and other capabilities to compete effectively. Railroads also understand the competitive pressures their customers face; they must offer pricing and services that enable their customers to remain competitive in their own markets.

To achieve this, railroads invest heavily in their infrastructure, ensuring that it remains in top condition to meet current and future demand. Today, the U.S. freight rail infrastructure is in its best overall condition ever, thanks to the nearly $30 billion average per year (in today's dollars) that U.S. Class I railroads have reinvested in capital spending and maintenance over the past decade.[1] Unlike other transportation modes, freight railroads cover virtually all of these costs themselves.

[1] In current dollars, spending over the past decade averaged $25 billion per year.

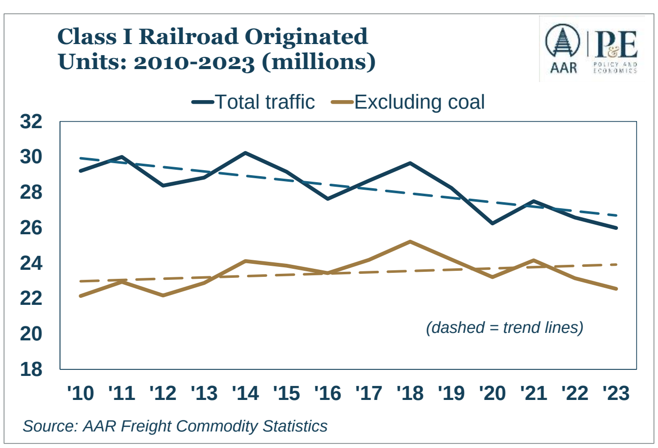
However, the demand for rail transportation is primarily driven by demand for the goods and materials that rail customers use and produce, which is influenced by factors largely outside the control of railroads. These factors include overall economic conditions, consumer spending, income levels, inflation, and international trade dynamics. Additionally, industry-specific developments, technological advancements, and government policies also play significant roles in shaping demand.

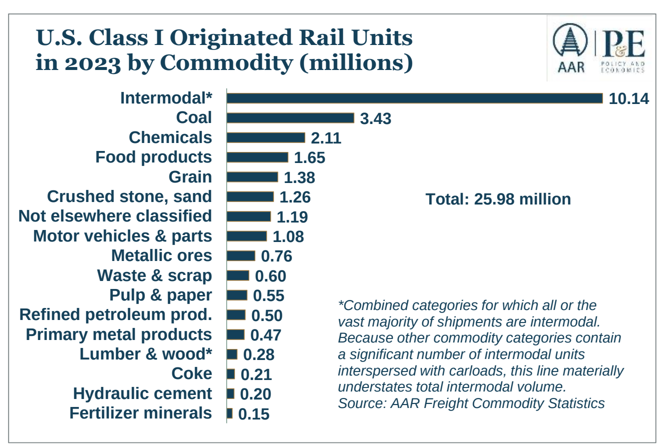
Railroads must remain agile in responding to these changing dynamics, both locally and globally, as they impact freight demand, network capacity, and asset management. While the challenges are significant, railroads are tackling them with determination, agility, and resilience, striving to grow their business in an ever-changing environment.

I.B. Recent Rail Traffic Trends

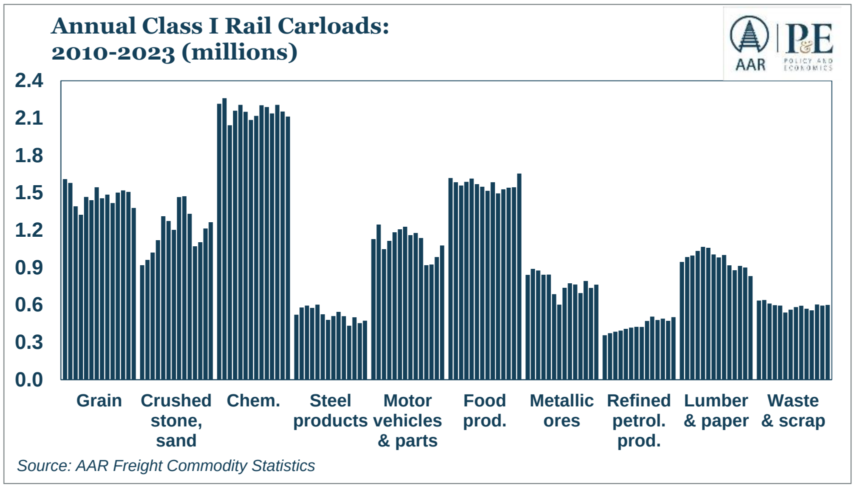
Since 2010, total U.S. Class I rail traffic has generally declined, largely due to a significant drop in coal carloads. However, when coal is excluded, rail volumes have shown a slight upward trend over the same period. A more detailed discussion on coal's impact follows below.

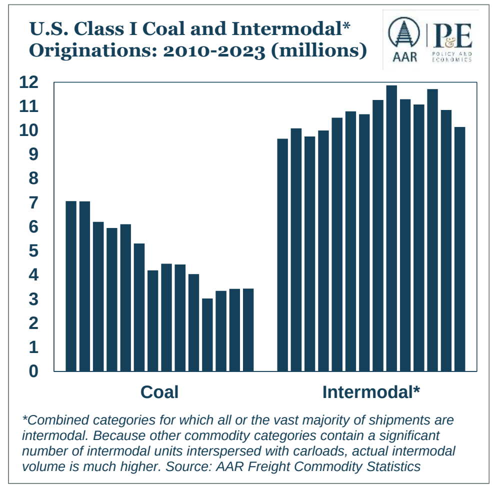
In 2023, intermodal transportation was the dominant rail traffic segment, representing nearly half of all originated units. Intermodal also generated about 25% of Class I rail revenue, making it the largest revenue contributor. Meanwhile, coal accounted for 13.2% of the total Class I volume, with 3.4 million carloads, followed by chemicals (8.1%), food products (6.4%), grain (5.3%); and crushed stone, sand, and gravel (4.9%). Overall, Class I railroads originated 26.0 million carloads and intermodal units in 2023, with total terminated volume slightly higher at 27.6 million due to cross-border shipments from Mexico and Canada.



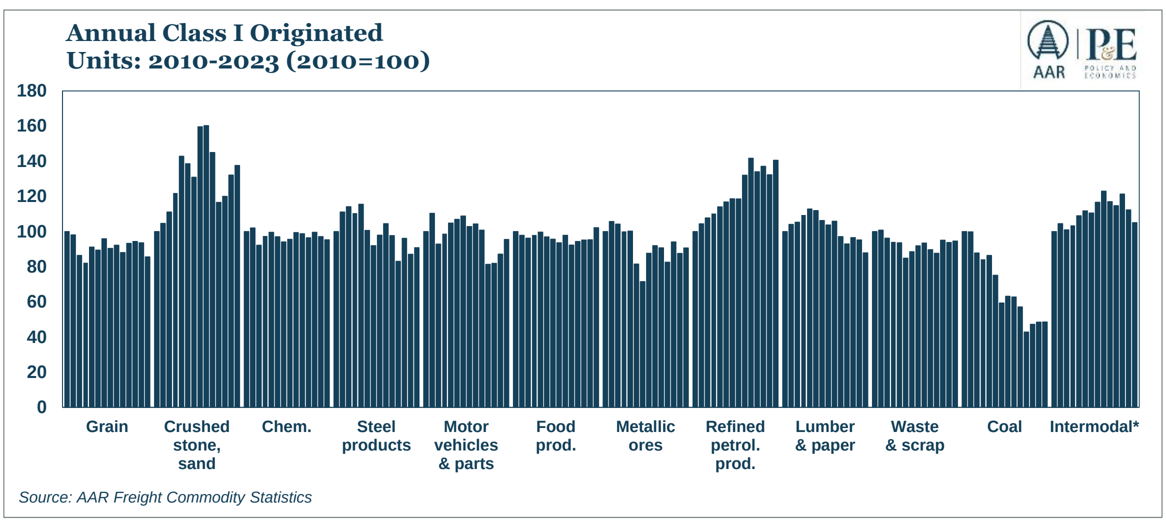


Rail traffic volumes are highly variable and subject to fluctuations driven by changing customer markets, economic conditions, and external factors like pandemics. Annual Class I rail volumes often vary by hundreds of thousands of units, with few sectors showing consistent, steady long-term growth or decline.





The indexed data for rail carloads and intermodal units from 2010 to 2023 underscores the inherent variability in rail traffic. Additionally, geographic factors add complexity. While national volumes for a commodity might remain stable, regional gains and losses can offset each other, complicating railroads' planning efforts.



Despite these challenges, railroads strive to ensure they have the right resources in place to meet current and future needs, continually adapting to the dynamic nature of the market.

I.C. Railroads' Financial Picture

The financial health of major U.S. railroads is significantly stronger today than in the past. While the industry faces uncertainties related to its customer base, economic conditions, and the regulatory environment, these challenges also present opportunities for adaptation and growth. The future stability of the rail industry will depend on its ability to navigate these evolving factors and capitalize on emerging trends.

In order to satisfy their ongoing investment requirements, railroads must compete for capital by providing investors with returns that are comparable to other investments with similar risk profiles. The financial community evaluates a firm's investment attractiveness based on its ability to cover all operational costs, including providing a competitive return on invested capital. Railroads' financial improvement positions them to better navigate the ongoing changes in the markets they serve, allowing them to invest in maintaining and expanding their networks.

A proper measure of return on investment should account for the replacement cost of assets, which ensures long-term sustainability rather than short-term gains. Forcing railroads back into a weakened financial position after achieving stability would be counterproductive.

Critics sometimes point to the funds railroads return to their owners (e.g., stockholders) as detracting from long-term capital investments. However, railroads must balance reinvesting profits for growth with providing competitive returns to their owners. Shareholders must be able to expect competitive returns one way or another, or they will put their money in investments they think will offer such returns. Rail management is aware of this, and thus will try to keep total returns to shareholders competitive with other investments. Reducing returns (for example, by reducing or eliminating dividends and buybacks), especially in a mature industry like railroads, may conserve cash in the short run, but at the cost of a reduced ability to attract reasonably priced capital essential for future growth.

Finally, it's important to remember that railroads operate in a highly competitive market, where customers always seek cost-effective transportation options. Despite their financial improvements, railroads are navigating economic uncertainty and experiencing shifts in key segments of traffic base.

II. MANY FACTORS IMPACTING RAIL DEMAND ARE BEYOND THE RAILROADS' CONTROL

II.A. Rail service demand is closely tied to the performance of goods-related sectors of the economy.

The health of most industries is influenced by the overall economic climate—such as auto sales growing during expansions and declining during recessions—but railroads are particularly dependent on sectors connected to the production and consumption of tangible goods.

Railroads thrive when the goods economy is strong. Key activities such as goods production, international trade, and consumer spending on physical products is what fills railcars. When businesses need to move raw materials, intermediate goods, or final products, demand for rail service typically surges. Conversely, when consumer demand for goods wanes or manufacturing slows, rail traffic declines.

Although consumer spending accounts for approximately 70% of U.S. GDP, only about a third of this spending is on goods, the component that directly generates significant freight. Similarly, the import and export of goods generate significant amounts of rail freight, especially intermodal, unlike trade in services. Construction activities and business investments in physical assets like equipment and structures also involve rail, whereas purchases of software and other intellectual property do not.

Goods-related sectors often exhibit more volatility than services. For this reason, it is not always meaningful to compare overall GDP growth with rail traffic growth. For example, from 2008 to 2023, the year-over-year change in services-related GDP correlated with total U.S. rail traffic at just 36%, a relatively weak correlation.[2] However, when comparing total GDP with rail traffic, the correlation is a much stronger at 75%. When focusing specifically on economically sensitive rail traffic (intermodal plus carloads excluding coal and grain), the correlation with total GDP is 71%.[3] Most notably, the correlation between goods-related GDP and economically sensitive rail traffic is a robust 90%.

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[2] Correlation is a statistical measure that shows how strongly pairs of variables are related to each other. It ranges from 100% (the variables move together by the same percentage and direction) to -100% (they move by the same percentage but different direction). A correlation of zero means no relationship between the variables. Correlation describes relationships; it does not imply cause and effect.

[3] We exclude coal and grain because their carloads, much more so than other rail categories, tend to rise or fall for reasons that have little or nothing to do with the state of the overall economy.

This data underscores that when firms and consumers prioritize spending on tangible goods such as home improvements, steel, and furniture over services like haircuts, digital downloads, and vacations, railroads experience increased demand and benefit accordingly.

II.B. Railroads are also affected by what's happening within specific industries.

Railroads are deeply influenced by the industries they serve, exemplifying what economists call a "derived demand" industry. For instance, a rail carload of scrap steel is shipped to a steel producer, which turns it into door panels for a new car. The final sale of the car to a consumer ultimately drives the initial demand for the scrap steel. If the demand for cars declines, so does the demand for steel—and the rail service that transports it.

Changes in demand can occur for various reasons, such as variations in consumer preferences, new regulations, increased production costs, or shifts to alternative materials like aluminum or plastic. While scrap steel is just one example, the principle applies across all goods that railroads transport: fluctuations in rail customer industries directly impact rail traffic volumes.

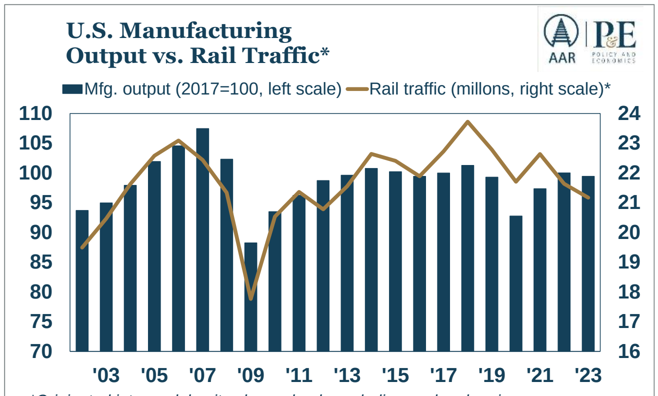
In recent years, U.S. rail volumes have been constrained by weaknesses in industrial output and commodity-related industries, partly exacerbated by the pandemic. As long as these challenges persist, they will create significant headwinds for railroads seeking to grow their business.

The U.S. economy has evolved dramatically over the past 50 years, with services now accounting for around 80% of economic activity, up from roughly half. This shift has come at the expense of industrial sectors, particularly manufacturing. The declining share of goods production in the U.S. gross output has significantly impacted rail freight volumes.

However, manufacturing remains crucial. The U.S. manufacturing sector alone would rank as the world's eighth-largest economy, with a global manufacturing output share of about 16%—more than Japan, Germany, and South Korea combined. Only China's share is larger.

Manufacturing has always been a key driver of rail traffic, with a strong positive correlation between economically sensitive rail traffic (intermodal and carloads excluding coal and grain) and U.S. manufacturing output. Unfortunately, U.S. manufacturing output peaked in 2007 and has remained stagnant at best since, presenting challenges for railroads.

The future of U.S. manufacturing will depend on various economic, social, political, and technological factors. If manufacturing experiences significant growth, especially in sectors requiring substantial raw materials and producing voluminous outputs (e.g., automobiles, steel, plastics), rail traffic will likely benefit. However, continued stagnation or growth in sectors that do not heavily utilize rail, like high-tech goods, will limit rail volumes, posing a substantial challenge for the industry.



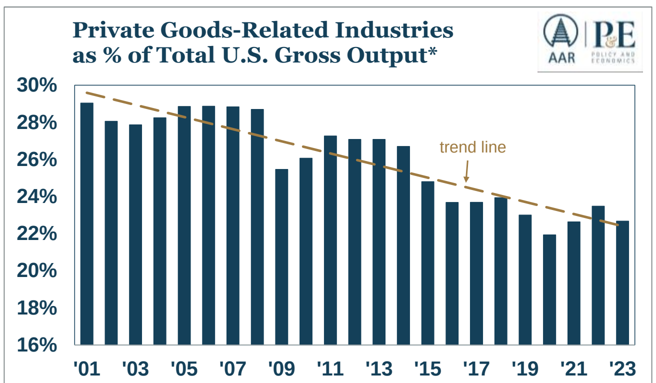
*Originated intermodal units plus carloads excluding coal and grain.
Source: Federal Reserve, Association of American Railroads

III. CHANGING MARKETS PRESENT CHALLENGES AND OPPORTUNITIES FOR RAILROADS

III.A. The U.S. rail industry is navigating a complex landscape, reliant on broader economic performance and vulnerable to stagnation in key goods-producing sectors.

The macroeconomic landscape over the next decade could certainly be more volatile than in the past, driven in part by lasting effects of the pandemic, which have disrupted supply chains, increased inflationary pressures, and caused fundamental shifts in the labor market.[4] As the economy continues to adjust to these structural changes, the U.S. may experience more frequent fluctuations in growth and stability in the coming years.

For railroads, this volatility could result in fluctuating demand for their services. While overall economic growth remains important, railroads are particularly vulnerable to trends in sectors tied to the production and consumption of tangible goods. This includes industries such as manufacturing, agriculture, and



*Sum of output of manufacturing; construction; agriculture and foresty;
and mining. Source: Bureau of Economic Analysis

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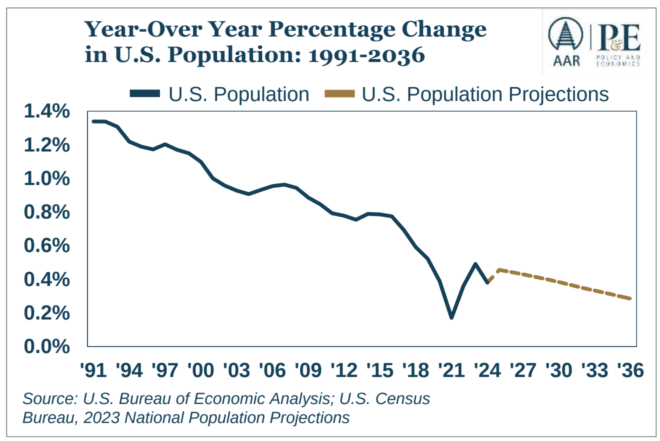
[4] Global Macro Outlook." *BlackRock*, 20 Jan. 2022, www.blackrock.com/us/individual/insights/macro-market-perspectives. Accessed 10 Aug. 2024

energy, which are core to rail freight volumes. Over the past 20 years, the share of goods-related industries has fallen, presenting potential challenges for railroads.

Additionally, population growth—a key driver of goods movement—has significantly slowed over the past 50 years. In the 1990s, the U.S. population grew by an average of 1.2% annually. However, between 2015 and 2023, this rate dropped to just 0.5%. If the 1990s growth rate had continued, the U.S. population today would be approximately 38 million higher, potentially resulting in an additional 2.3 billion tons of freight being shipped (based on current per capita freight shipments). If 25% of that freight had moved by rail, rail tonnage in 2023 could have been nearly 39% higher.

The U.S. birth rate, as reported by the CDC, hit a historic low in 2023, with the fewest births in over 40 years. Demographers do not expect this trend to reverse, meaning future population growth will largely depend on net immigration, which is influenced by various political and economic factors. If population growth remains constrained, rail volumes could be lower than they otherwise might be, posing a challenge for the industry.

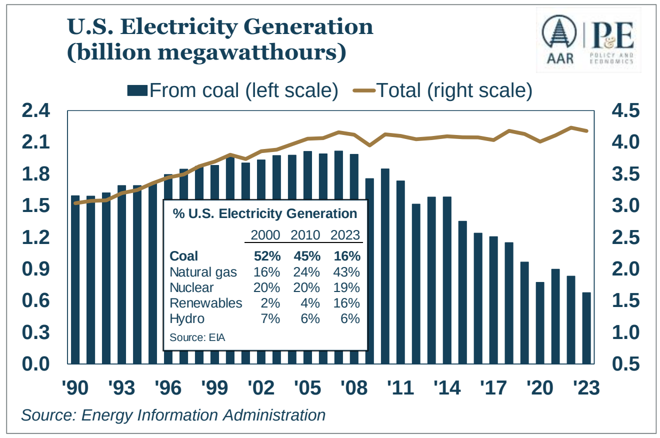


In summary, the evolution of these economic and demographic factors will have an impact on rail demand.

III.B. Continued Decline in Coal

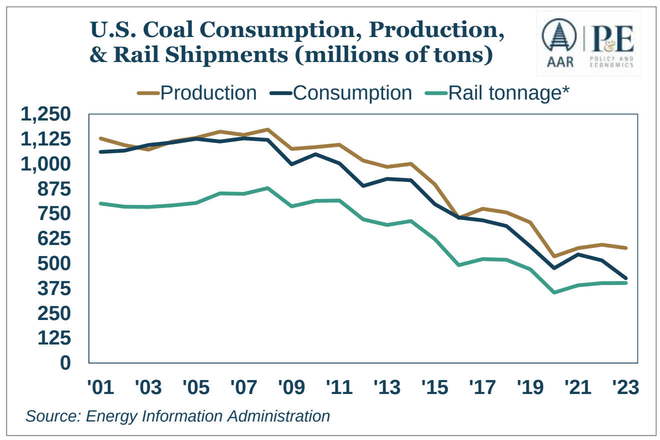
Coal has historically been the backbone of U.S. railroads, but it now exemplifies the significant challenges and uncertainties they face in evolving markets. Over 90% of U.S. coal consumption occurs at coal-fired power plants, with railroads delivering approximately 70% of this coal. As a result, changes in the electricity market heavily influence coal demand and, consequently, the volume of coal transported by rail.

Over the past 15 years, U.S. electricity generation has remained relatively flat, but coal's share has drastically declined. The rise of natural gas, fueled by the shale gas revolution, has made it the dominant source of electricity generation. At the same time, electricity from renewable sources has surged, and stricter air quality regulations have increased the cost of coal-fired power.



Source: Energy Information Administration

These factors have profoundly impacted coal production, consumption, and rail transportation. According to the Energy Information Administration (EIA), non-coal sources accounted for 84% of U.S. electricity generation in 2023, up from 48% in 2000. Consequently, coal production dropped from a peak of 1.17 billion tons in 2008 to 577.5 million tons in 2023. Similarly, U.S. coal consumption fell from a peak of 1.13 billion tons in 2007 to 425.9 million tons in 2023. Rail coal volumes mirrored this decline, with Class I railroads originating 3.43 million carloads in 2023, less than half of the 7.71 million carloads at the 2008 peak.

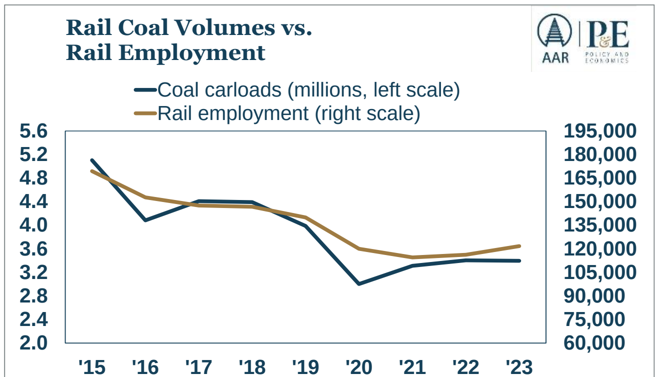


Source: Energy Information Administration

The downward trend in rail coal volumes has continued in 2024, with U.S. coal carloads through July down 16.2% from the previous year, marking the lowest January-to-July total on record according to AAR data.

The factors driving coal's decline—low natural gas prices, the falling cost of renewable energy, and stricter environmental regulations—are expected to persist, potentially posing ongoing challenges for railroads that depend on coal transportation. With investment in renewable energy continuing unabated and new emission limits proposed for coal-fired power plants, the future for rail coal volumes remains uncertain. The impact of these trends on the railroad industry could unfold in various ways:

- **Energy Market Dynamics**: Low natural gas prices, declining renewable energy costs, and evolving environmental regulations are factors that continue to shape the energy market. These factors are expected to continue reducing demand for coal, which in turn may influence the volume of coal transported by rail. The extent of these effects remains uncertain and will depend on how these trends evolve over time.
- **Employment Trends**: The reduction in coal traffic has been a significant factor in the decline of freight railroad employment since 2015. Looking ahead, employment trends could be influenced by fluctuations in coal demand and whether intermodal transportation can offset these losses. However, this potential offset is uncertain, as intermodal transportation faces substantial competitive challenges.



Figures are for Class I railroads.
Source: Surface Transportation Board, Association of American Railroads

- **Infrastructure Utilization**: The decline in coal volumes has led to the underutilization or complete abandonment of tens of thousands of miles of rail lines, tens of thousands of freight cars, and thousands of locomotives. In some extreme cases, entire divisions of Class I railroads have been shut down or sold due to the loss of coal traffic.
- **Network Instability and Asset Management**: Coal has historically provided a stable revenue stream for railroads that helped sustain the overall rail network. As coal volumes fluctuate, railroads may need to reassess the economic viability of certain lines and consider strategies for managing stranded assets, including rail lines, freight cars, and locomotives that are no longer generating expected revenue.

In summary, while the factors driving coal's decline are likely to persist, the impact on the railroad industry will depend on a range of factors. The future presents both challenges and opportunities, with outcomes hinging on how effectively railroads can adapt to a changing energy landscape and evolving regulatory environment.

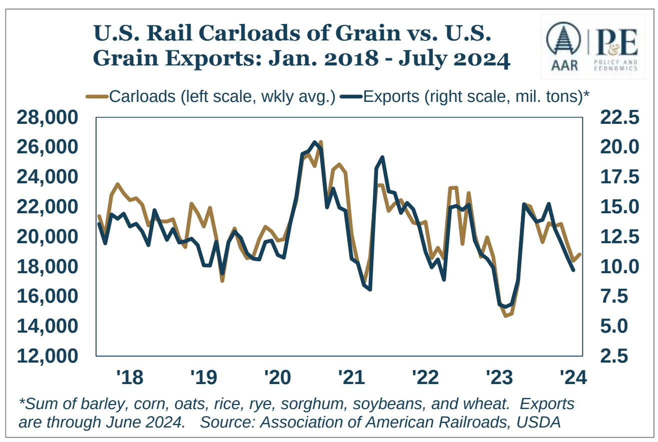
III.C. Other Key Carload Markets: Factors and Considerations

In addition to coal, other major carload markets for Class I railroads—such as chemicals and grain—are influenced by various pressures and competitive dynamics. These markets all face significant challenges and opportunities that could shape their future demand for rail transport.

Grain Market Dynamics

Grain is a crucial commodity for U.S. freight railroads. In 2023, Class I railroads originated 1.45 million carloads of grain, representing 5.3% of total carloads and 9.2% of total tons carried. The grain market is highly competitive, with railroads facing strong competition from trucks and barges. According to USDA data, trucks handled 82% of domestic U.S. grain transport in 2020, while railroads accounted for 17%, and barges 1%. Many domestic shipments are short-haul movements from farms to local grain elevators, mills, or ethanol plants. Shipments that begin on the farm almost always begin by truck.

Domestic grain demand tends to be relatively stable, with year-over-year fluctuations remaining modest. However, U.S. grain exports are inherently volatile, fluctuating significantly from year to year due to a range of factors such as global production levels, economic conditions in importing countries, exchange rates, grain prices, government policies, trade tensions, and ocean freight rates. Railroads generally hold a higher mode share in U.S. grain export market, capturing around 38% according to USDA data, particularly for long hauls to ports.



However, railroads still face stiff competition from barges and trucks in transporting grain to ports. The unpredictable nature of grain exports means that much of variability in U.S. rail carloads of grain is tied to changes in export volumes, underscoring both the significance of international markets and the challenges posed by their volatility. Despite these challenges, the focus on cost control remains critical for railroads to maintain competitiveness, especially against other major grain-exporting nations like Brazil, Argentina, and Australia.

Chemicals

In 2023, U.S. Class I railroads transported 2.1 million carloads of chemicals, representing 8.1% of total carloads and 12.5% of total tonnage, making it the third-largest carload segment behind coal and intermodal. The chemical industry is a critical segment for railroads, but it also presents unique challenges.

The U.S. chemical industry, comprising thousands of firms, is primarily concentrated in the Gulf States due to the availability of petroleum and natural gas. These raw materials are essential for chemical production, which is then distributed across the country. According to the American Chemistry Council (ACC), in 2023 approximately 1.01 billion tons of chemicals were shipped domestically at a cost of $77.2 billion. Railroads accounted for 16% of the total transportation costs and 20% of the chemical tonnage, with trucks dominating the market. This intense competition from other transportation modes, coupled with the competitive pressures within the chemical industry itself, suggests that the railroads' role in this sector continues to face challenges.

On a positive note, the shale gas boom has led to increased U.S. natural gas production, which in turn has boosted chemical production (and rail chemical volumes) due to lower natural gas prices. This growth has resulted in the expansion of chemical plants, with railroads playing a crucial role in transporting this increased output from these facilities.[5]

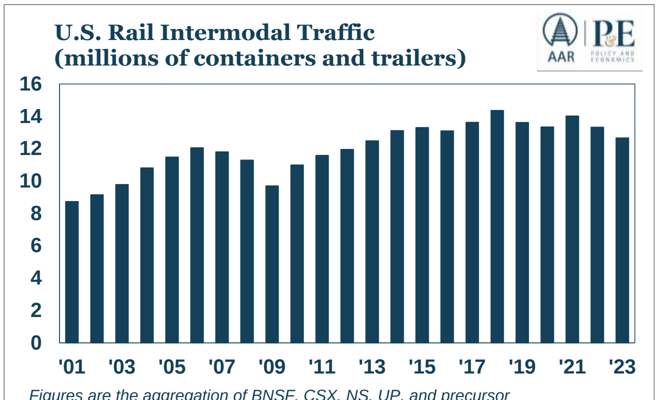
[5] The shale boom also led to higher rail shipments of frac sand. However, frac sand is another example of a rail traffic category facing intense competitive pressures. Oil and gas producers can easily substitute locally produced sand trucked in from nearby sources to replace sand transported by rail from distant sand producers. Over the past decade, higher chemical and frac sand rail shipments have paled in comparison to lost coal shipments.

The chemical industry's dependence on natural gas introduces some potential fluctuations in production costs. If natural gas prices rise, chemical production costs may increase, potentially affecting the competitiveness of U.S. chemical manufacturers both domestically and globally. In response, chemical companies might consider shifting production to regions with lower energy costs or explore alternative feedstocks and energy sources. These shifts could require railroads to adapt their operational strategies and resources to continue effectively serving the chemical industry.

The future success of railroads in the chemical sector will depend on their ability to adapt to these changing market conditions while staying competitive with other transportation modes. The extent of the impact from these factors remains uncertain and will depend on various economic and industry-specific factors.

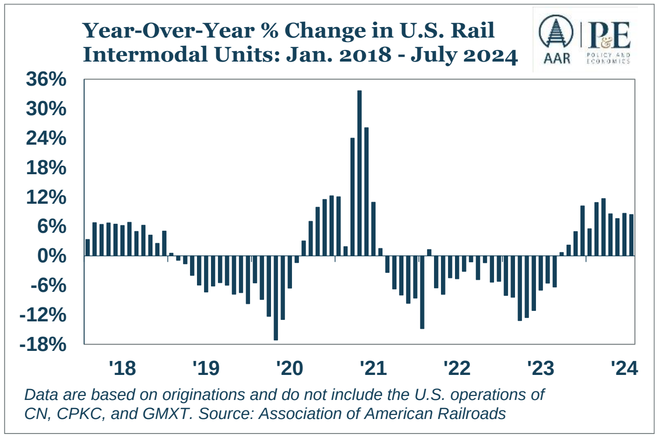
III.D. Growth in Intermodal

Rail intermodal has been the fastest-growing segment of rail traffic over the past 30 years, contributing approximately 25% of Class I rail revenue in 2023. This growth is set to continue as railroads adapt to the ongoing shifts in the U.S. and global economies, which have moved away from heavy industries and towards the production and distribution of smaller, higher-value goods. These goods, often manufactured and distributed across broad geographic areas, do not lend themselves well to traditional rail carload services, making intermodal transport a key area of opportunity.



Figures are the aggregation of BNSF, CSX, NS, UP, and precursor railroads. Source: Association of American Railroads

Intermodal services have enabled railroads to effectively compete for this type of traffic, particularly as global supply chains have become more complex and widespread. The widescale containerization of freight has further facilitated the seamless transition of shipments between modes, allowing rail to capture significant market share. In 2023, the four largest U.S. railroads originated 12.7 million containers and trailers, an amount expected to grow — S&P projects robust growth of around 28% in tonnage by 2030.



Given that nearly all goods transported by rail intermodal could alternatively be moved by truck, price and service competitiveness are critical for railroads. The intermodal segment also has the most stringent demands for speed and reliability, as delays in delivering intermodal goods—such as auto parts or packages—can have far more severe consequences compared to delays in other types of rail traffic, like coal. Additionally, trucking benefits from government-subsidized infrastructure, whereas railroads bear the vast majority of their own infrastructure costs.

The trucking industry cyclical's nature, characterized by fluctuations in demand and capacity, also influences the competitive landscape. For example, intermodal volumes declined in 2019 due to trade tensions and further decreased in early 2020 during the pandemic. However, the subsequent economic recovery saw a sharp increase in demand for goods, leading to a surge in freight transportation needs and an influx of new truck drivers. This current excess trucking capacity has intensified competition for railroads and is a key reason why rail intermodal volumes today are not higher.

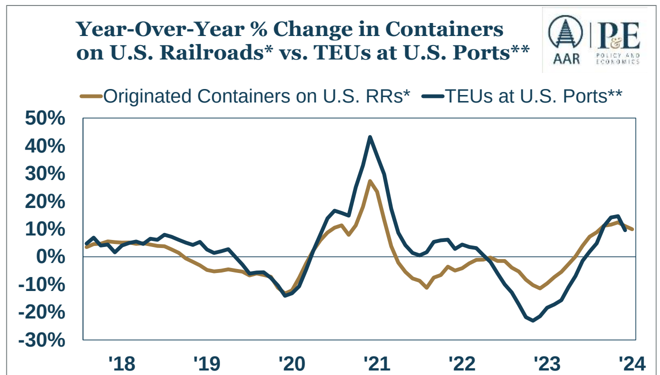
However, the potential for growth in the intermodal segment is substantial. During the international trade boom, railroads captured long-haul traffic from ports to major inland markets, particularly on West Coast to Midwest routes, where rail has become the dominant mode of transportation. However, in shorter hauls, particularly in the East, railroads face more competition from highways, making market share gains more challenging.

Additionally, the national truckload market remains a significant opportunity. In 2020, this market was roughly 88 million units, with railroads capturing only about 10% of it.[6] This

[6] See https://intermodalindepth.com/wp-content/uploads/2020/12/Railroad-Vision-2020-Intemodal-Challenges-2020-10.pdf.

leaves a large portion of the market available for railroads to target, especially as they continue to invest in infrastructure, such as new terminals and track upgrades, to enhance their service offerings.

Intermodal transportation presents railroads with the opportunity to expand their market presence and increase revenues by capturing a greater share of this growing market. The segment's potential is bolstered by economic shifts towards higher-value goods, the increasing efficiency and reliability of intermodal services, and ongoing trends in global trade. (There is a very close correlation between U.S. port volume and U.S. intermodal volume.) While competition from trucking remains extremely strong, the flexibility and scalability of intermodal transport position railroads to capitalize on these and drive future growth.



*Originations on BNSF, CSX, NS and UP combined. **Combined loaded + empty TEUs at Baltimore, Charleston, Houston, Long Beach, Los Angeles, New York/New Jersey, Oakland, Savannah, Seattle/Tacoma, and Virginia. Data are based on 3-month averages. Source: Association of American Railroads, individual ports

III.E Other Transportation Modes Are Intense Competitors to Railroads.

Railroads face relentless competition from other transportation modes, not just in intermodal but across various types of freight. While not all rail traffic can easily shift to trucks or barges, a significant overlap exists, and evolving traffic patterns continually challenge traditional distinctions between "truck," "rail," and "barge" freight.

Fluctuating fuel costs have repeatedly shifted the competitive balance between these modes, increasing the volume of traffic that could potentially switch from rail to other options. As a result, railroads must continuously improve service quality and efficiency to remain competitive in this dynamic transportation marketplace.

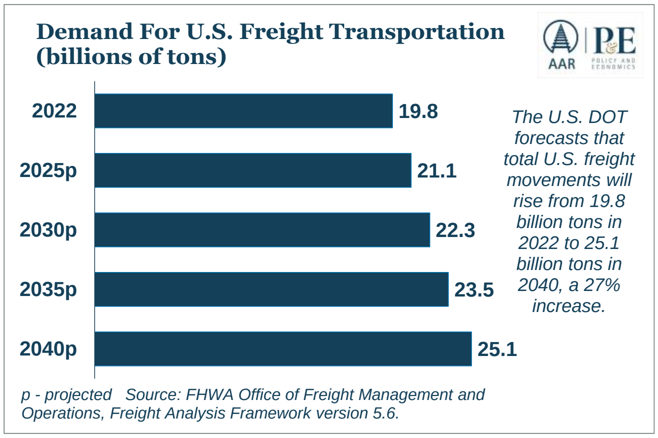
Infrastructure inequities between railroads and other modes present additional challenges. U.S. freight railroads primarily operate on infrastructure they own, maintain, and fund themselves, unlike motor carriers and barges, which benefit from substantial government-funded infrastructure. The heavily subsidized U.S. road network and the 25,000-mile system of publicly provided waterways create an uneven playing field, as the taxes and fees paid by trucks and barges do not fully cover the costs of their infrastructure, resulting in billions of dollars in annual subsidies.

Truck competition could intensify further if federal truck size and weight limits were relaxed, allowing motor carriers to increase capacity without significant additional costs. This could make all-highway transportation relatively cheaper, potentially challenging railroads further, and further increase the motor carrier underpayments. Technological advancements, such as the development of autonomous trucks, also have the potential to impact the competitive landscape. The adoption of self-driving trucks or truck platoons (where a lead truck is followed by driverless trucks connected electronically) could increase truck competition, potentially affecting significant volumes of rail traffic.

Sound public policy should give all modes the ability to innovate while requiring all modes to cover costs associated with their infrastructure use.

However, as indicated above, the competition between transportation modes is a two-way street. Railroads are actively working with customers to convert over-the-road business to rail. Huge investments are made every year in new facilities, expansion of existing ones, and enhancements in service offerings to capture more business from other modes.

There isn't a railroad out there that doesn't want to move more freight tomorrow than it moved today, and, to be sure, there will be a tremendous amount of freight available in the future for railroads to move. The Federal Highway Administration estimates that total U.S. freight movements will rise from 19.8 million tons in 2022 to 25.1 million tons in 2040, a 27% increase. Railroads will continue to work diligently to capture as much of this increase as possible through continued service enhancements, continued massive

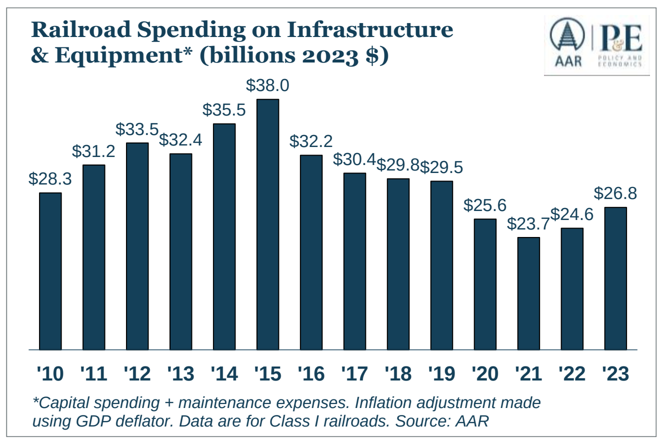


investments back into their networks, the application of new technologies, and an unwavering commitment to safety.

IV. THE RE-INVESTMENT CHALLENGE FOR RAILROADS

The greatest single financial challenge facing U.S. freight railroads today is ensuring that existing infrastructure and equipment is kept in top condition and that enough new capacity is put in place to keep rail service competitive and to accommodate the freight that railroads will be called upon to haul.

Without adequate infrastructure and equipment, rail service will become less safe, slower, less reliable, and less common — outcomes that are incompatible with a growing economy and a growing rail network. But because freight railroads receive relatively little government funding, they must earn enough year after year to meet their massive infrastructure and equipment requirements.



From 2010 through 2023, U.S. Class I freight railroads alone spent $348 billion — $421 billion in 2023 dollars — on locomotives, freight cars, tracks, bridges, tunnels, and other infrastructure and equipment.

This extraordinary level of funding could not have happened without an increase in rail earnings. As the Congressional Budget Office once noted, "As demand increases, the railroads' ability to generate profits from which to finance new investments will be critical. Profits are key to increasing capacity because they provide both the incentives and the means to make new investments."[7] Railroads know that if America's future transportation demand is to be met, they must have the capacity to handle it, and that a failure to invest today could make it much more difficult and expensive to handle business that will be available tomorrow.

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[7] Congressional Budget Office, *Freight Rail Transportation: Long-Term Issues*, p. 11 (January 2006). What the CBO said in 2006 is just as true, and relevant, today.

V. CONCLUSION

The railroad industry is a crucial component of the U.S. economy, with rail demand closely tied to overall economic conditions. The weakness in U.S. rail volumes today is a product of economic conditions and consistent with an economy in which manufacturing and commodity-related industries are struggling. While railroads are positioned for growth, their success hinges on a favorable economic environment. Rail demand is influenced by multiple external factors such as shifts in trade dynamics, regulatory changes, consumer behavior, population trends, and government policies—many of which are beyond the railroad's control. Increasing rail volumes aligns with the interests of shippers, rail workers, the general public, and all stakeholders. Despite the inherent dependence on macroeconomic conditions, U.S. freight railroads remain the safest, most efficient, cost-effective, and environmentally friendly mode of transportation.

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VI. Qualifications of Dr. Rand Ghayad

My name is Dr. Rand Ghayad, and I am the Chief Economist and Senior Vice President of Policy and Economics at the Association of American Railroads (AAR), headquartered at 425 Third Street SW, Suite 1000, Washington, DC 20024. In my role, I oversee the collection, analysis, and presentation of economic and operational data pertaining to railroads and their broader economic landscape. A key aspect of my responsibilities involves conducting and supervising economic, financial, statistical, and cost studies that inform strategic decision making within the rail industry.

Prior to joining the AAR, I served as the Head of Economics and Global Labor Markets at LinkedIn Corporation. In this role, I spearheaded thought leadership initiatives and conducted pioneering research on labor market dynamics, exploring the implications of current and emerging trends on the future of work and workers. My professional journey also includes senior positions at global institutions such as the International Monetary Fund (IMF) and the Brattle Group.

During my tenure at the IMF, I provided expert advice to member countries on a wide range of international economic policy and stabilization matters. I conducted innovative research in macroeconomics and finance, offering strategic insights and policy recommendations to both fragile and emerging market economies.

At the Brattle Group, I assisted corporations, regulators, and government agencies, including the U.S. Department of Justice and the Internal Revenue Service, in developing economic and financial testimony for various finance and tax litigation cases. Additionally, I provided economic analyses and consulting services to clients across diverse industries such as aviation, railroads, postal and shipping, addressing a wide range of policy and business matters.

I began my career as a scholar with the Federal Reserve Bank of Boston and have also worked as an economic consultant at both the Brookings Institution and the International Labor Organization, where I published on economic growth, inequality, and tax policy. Currently, I serve as a Global Fellow at the Woodrow Wilson Center of Scholars and have been an adjunct faculty member at Harvard University since 2014. I hold a Ph.D. in Economics from Northeastern University, along with dual Master's degrees in Financial Economics and Multinational Commerce from Boston University.