

Rail Transportation & Economic Competiveness

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**ASSOCIATION OF
AMERICAN RAILROADS**

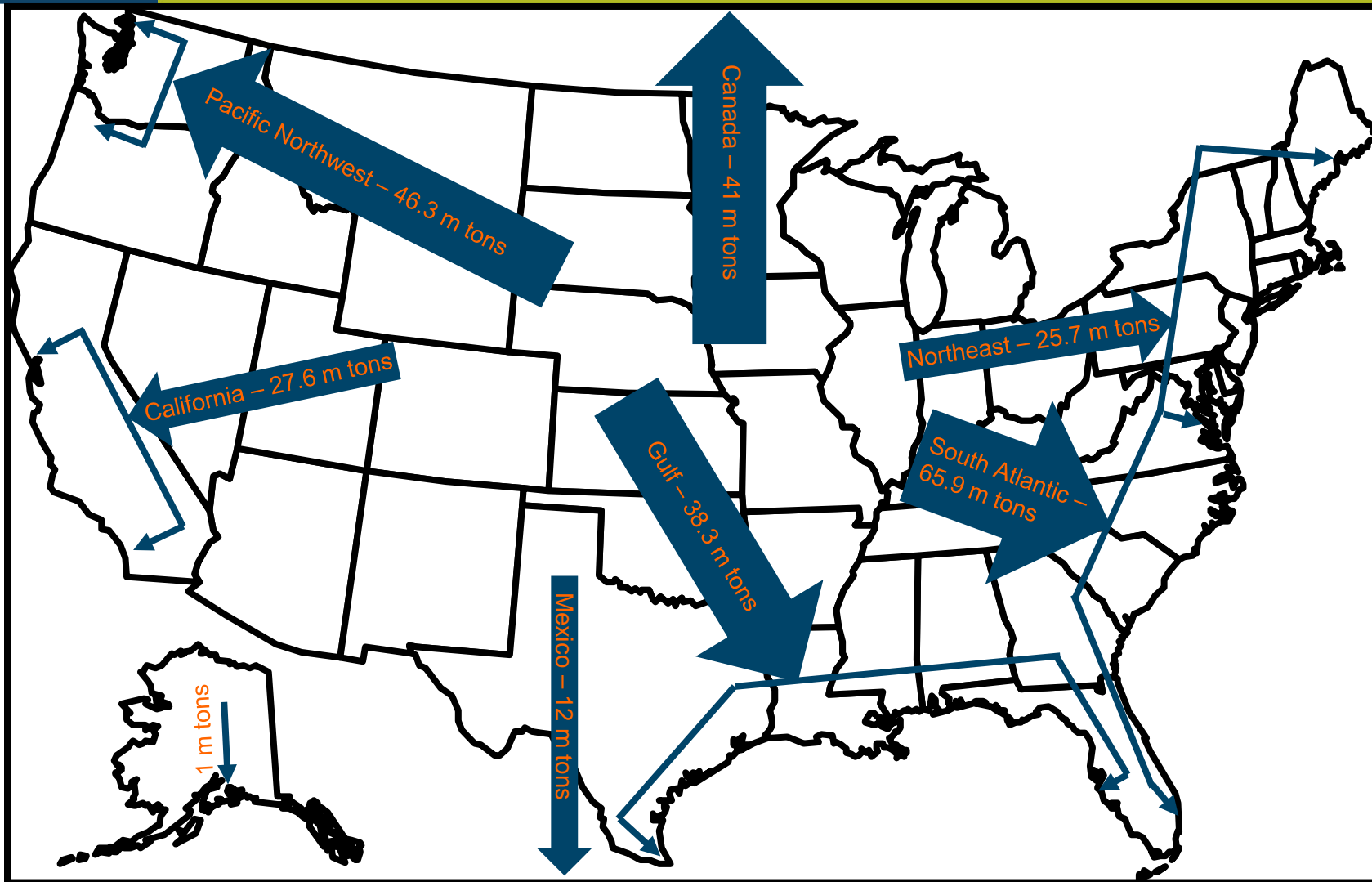


What is the Rail Role in Economic Competitiveness ?

- Help maximize the number of international markets which can be accessed by domestic goods.
- In the domestic economy, ensure that basic, intermediate and end-use goods have maximum space utility.
- For focus, the remainder of this presentation will look at the export marketplace.
- In rail export movements, this primarily means commodity markets such as coal, grain, chemicals, minerals, metals, ores, bulk foods and forest products.
 - *However, a growing portion of rail exports involve intermodal.*



In 2012 About 30% of U.S. Exports Went By Rail





Commodity Price

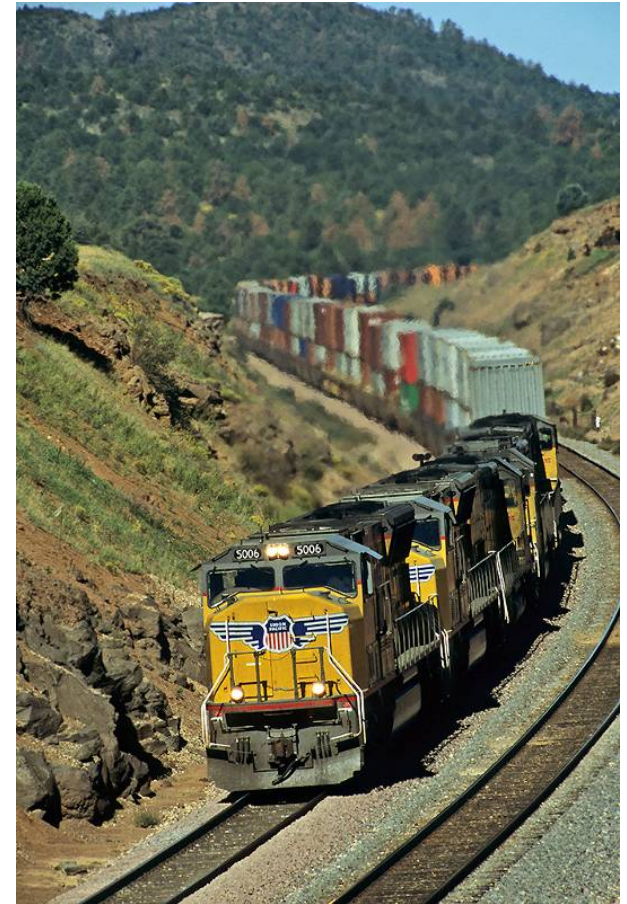
- Commodity price is the critical element determining all aspects of the transaction and logistics chain.
- Movements in this price will determine both the timing and physical quantities of commodities needing transport to market.
- Most of the players in the movement chain are price takers. They must react to events, not control them.
- The net result is a tendency for these commodities to move to market in surges.



What Makes a Competitive Logistics System?

It's all about specific markets!!

- Cost.
- Service.
- Capacity.
- Flexibility.



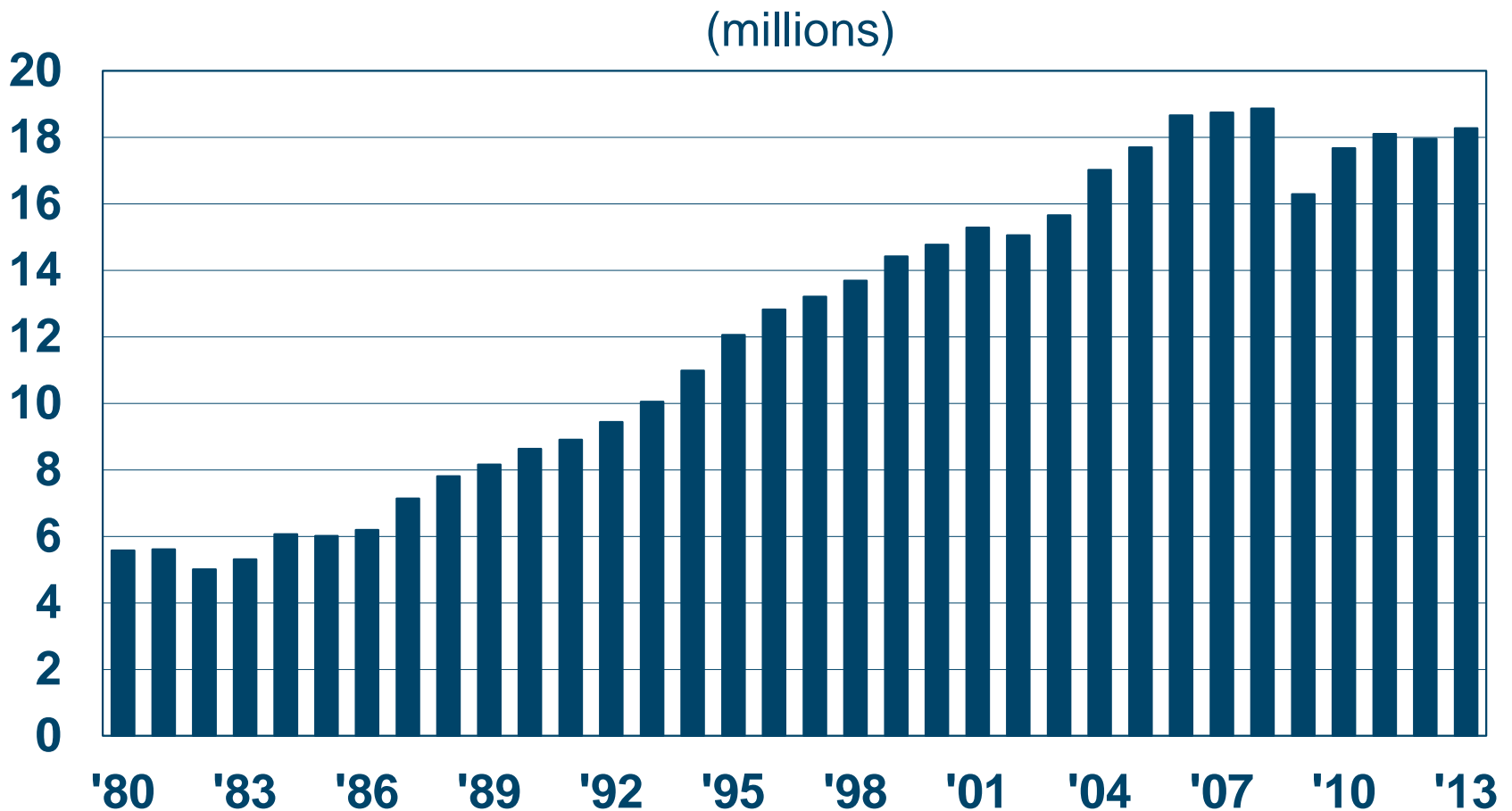


Cost

- The average U. S. export rail move is 935 miles with many moves over 2000 miles and some over 3000.
 - The average length of haul to market for traffic moving to Canada and Mexico is 1601 miles.
- Many offshore competitors are much closer to their ports.
- Producers can only compete where costs permit carriers to participate within market constraints.
- Sets a premium on productivity and efficiency for all stages of the movement.



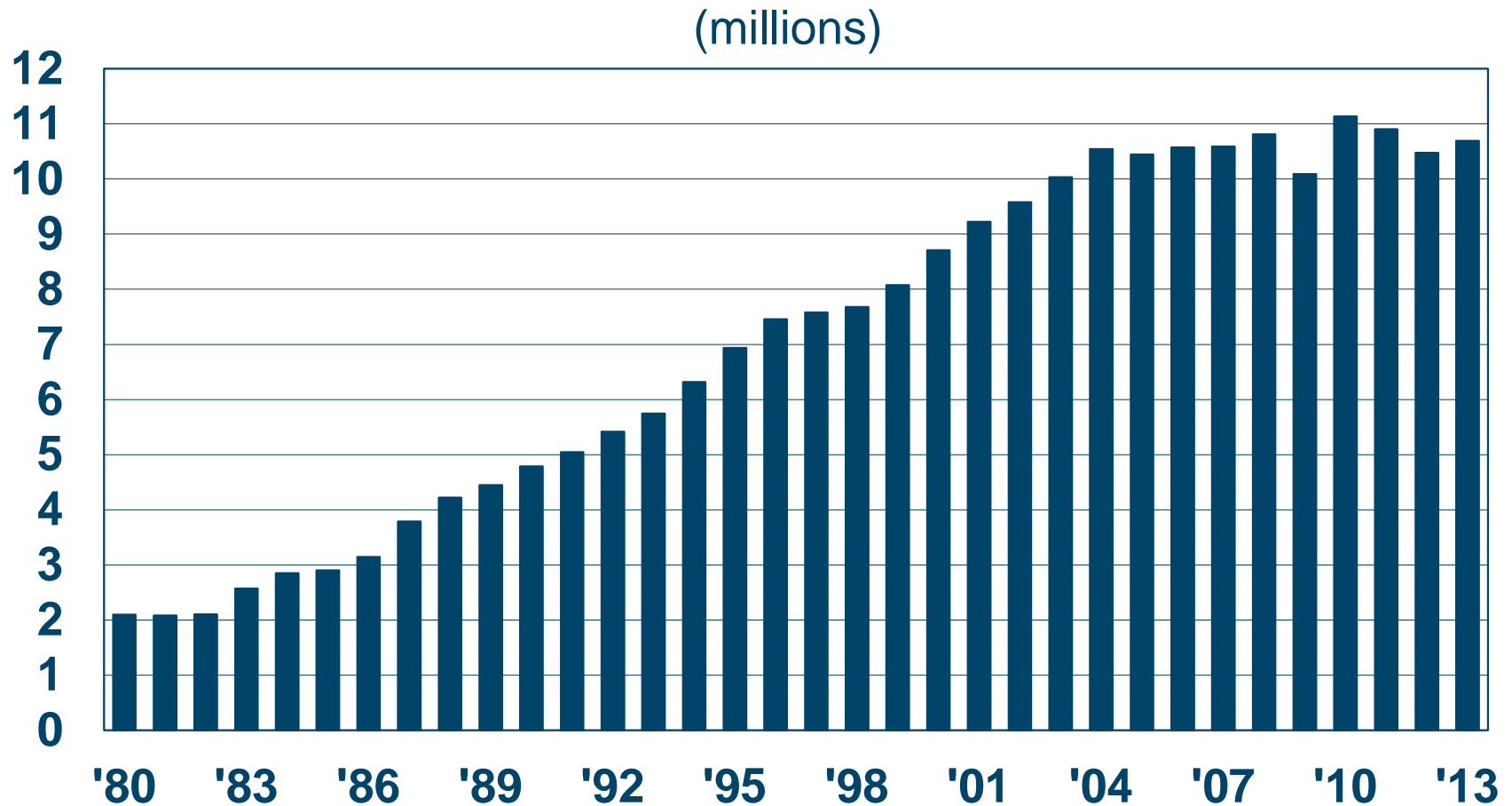
Revenue Ton-Miles Per Route-Mile of Railroad



Data are for Class I railroads. Source: AAR



Revenue Ton-Miles Per Employee



Data are for Class I railroads. Source: AAR

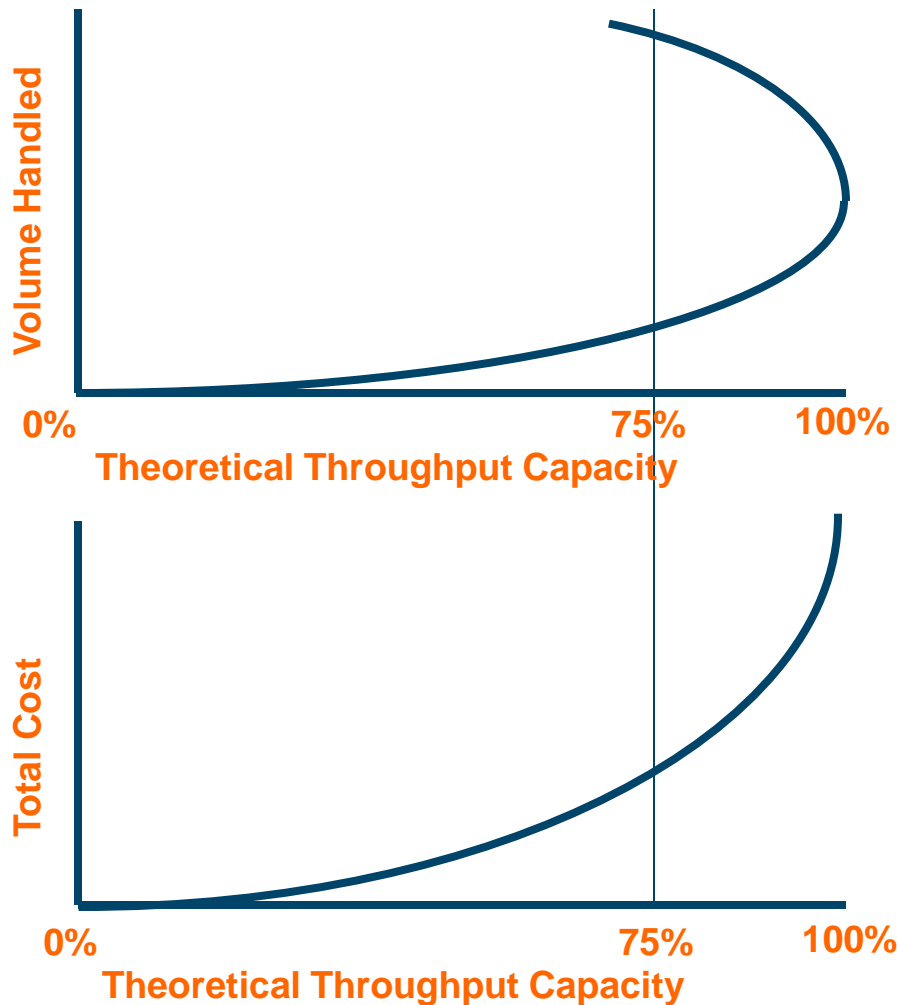


Service

- Service has both a physical and financial component.
- Physical – Ensuring that the chain of events that comprise the movement process happen without undue delay.
 - *For example – not delaying a ship departure.*
- Financial – Recognizing that various points in the movement process will trigger financial events for parties related to the transaction.
 - *For example – the owner of grain is paid at prevailing market price upon loading of the grain to rail cars or to vessel.*
- Sets a premium on communication and performance for all stages of the movement.



Volume Must Be Carefully Managed to Maintain a Fluid Network



- As volume on rail networks approaches 100% of theoretical capacity, fluidity of the network and service deteriorates.
- If volume offered exceeds 100% of theoretical capacity, maximum throughput capability actually declines.
- “Comfortable” capacity is generally about 70% to 80% of maximum theoretical capacity.
- Both total and average unit cost increases rapidly and service declines after “comfortable” capacity is exceeded.

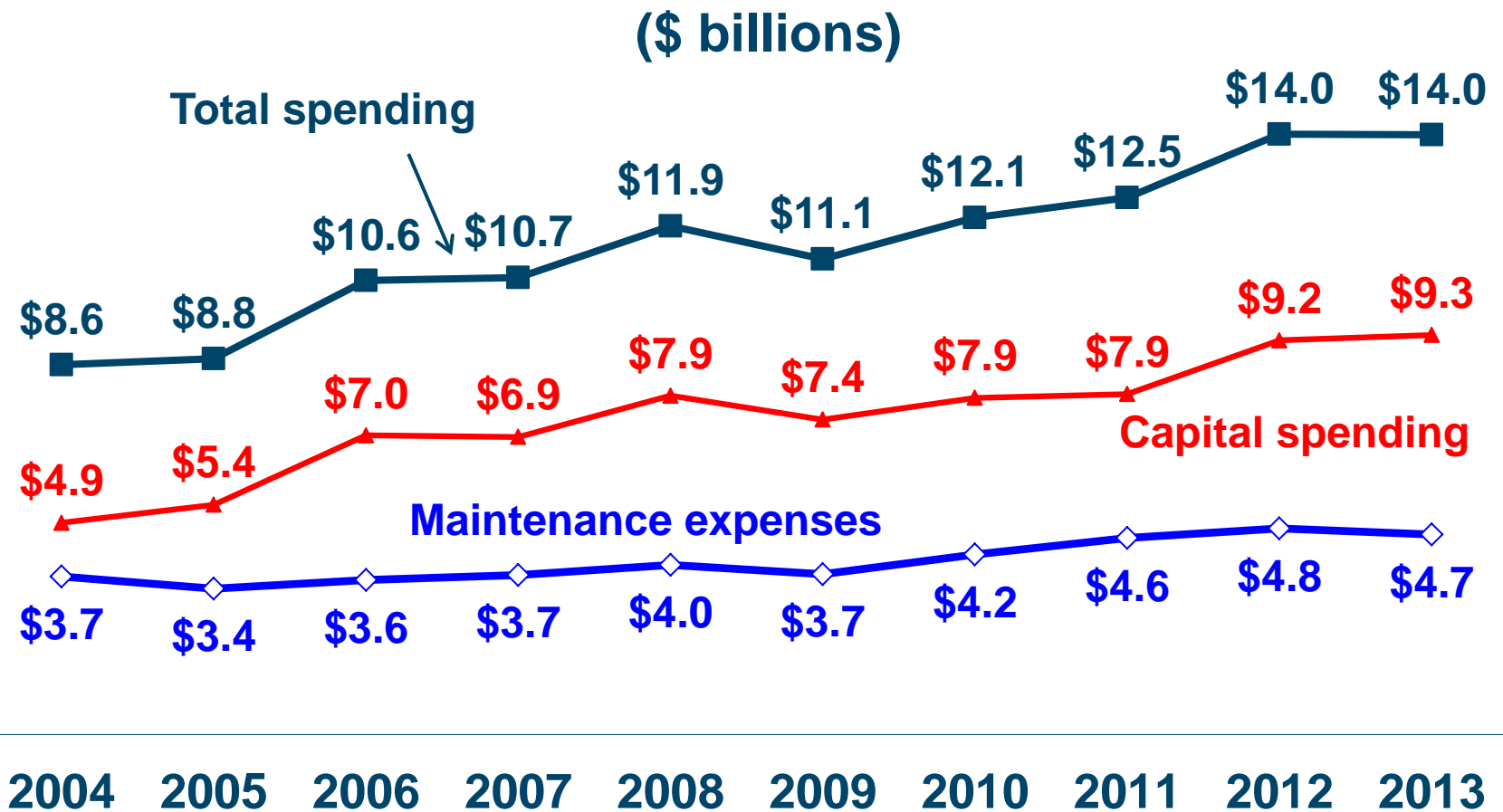


Capacity

- Export volumes and markets tend to be less predictable than domestic movements.
- This places a premium on capacity to handle surge movements in export corridors.
- Capacity of a movement process chain is dictated by the most constraining element.
 - *Loading facilities, rail movement (crews, infrastructure, equipment), port facilities and personnel, vessel availability.*
- Long-term commitment to investment in assets is critical to successful participation in these markets.



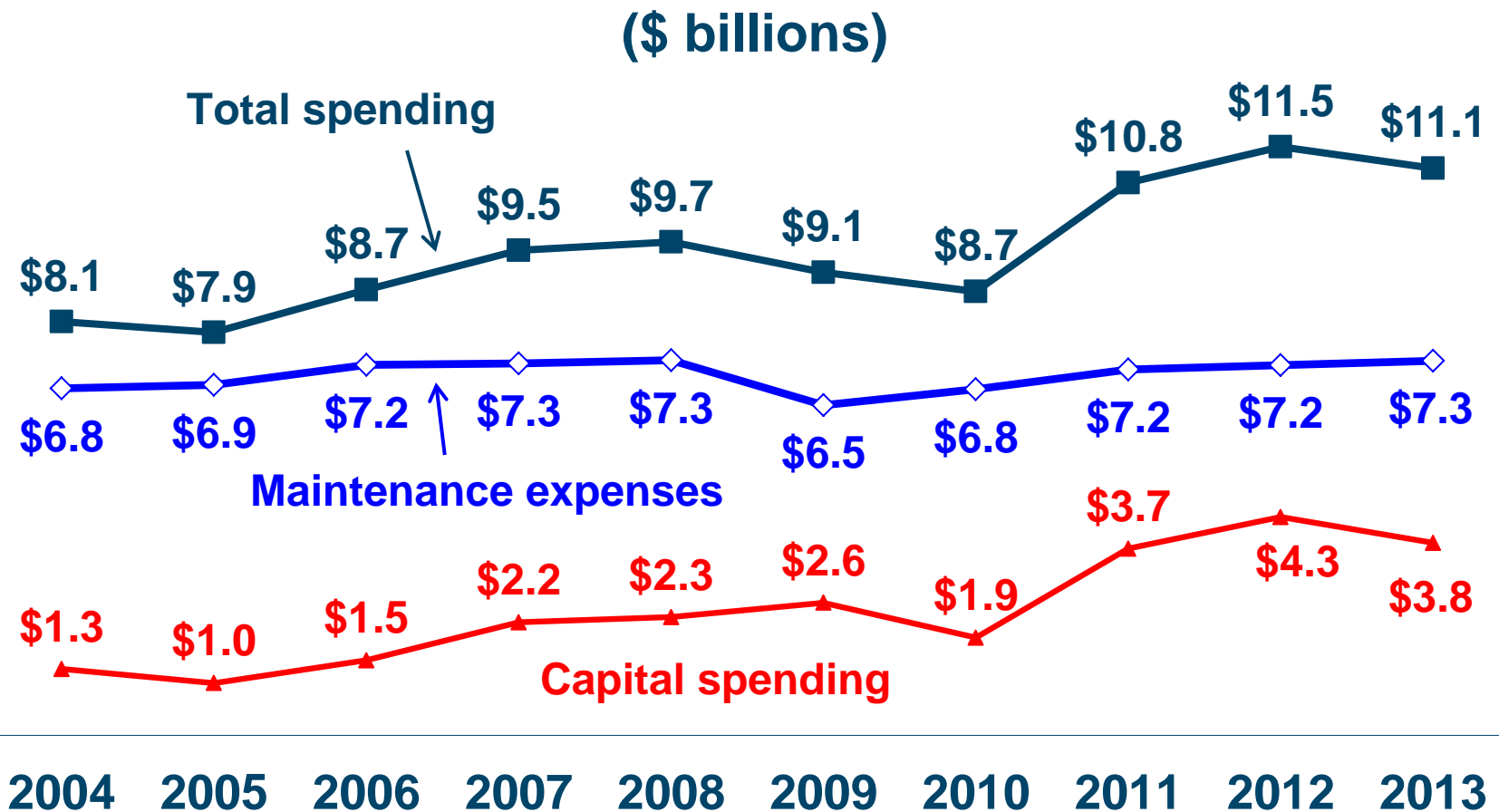
Spending by U.S. Freight Railroads on Infrastructure



Data are for Class I railroads. Source: AAR



Spending by U.S. Freight Railroads on Equipment



Data are for Class I railroads. Source: AAR



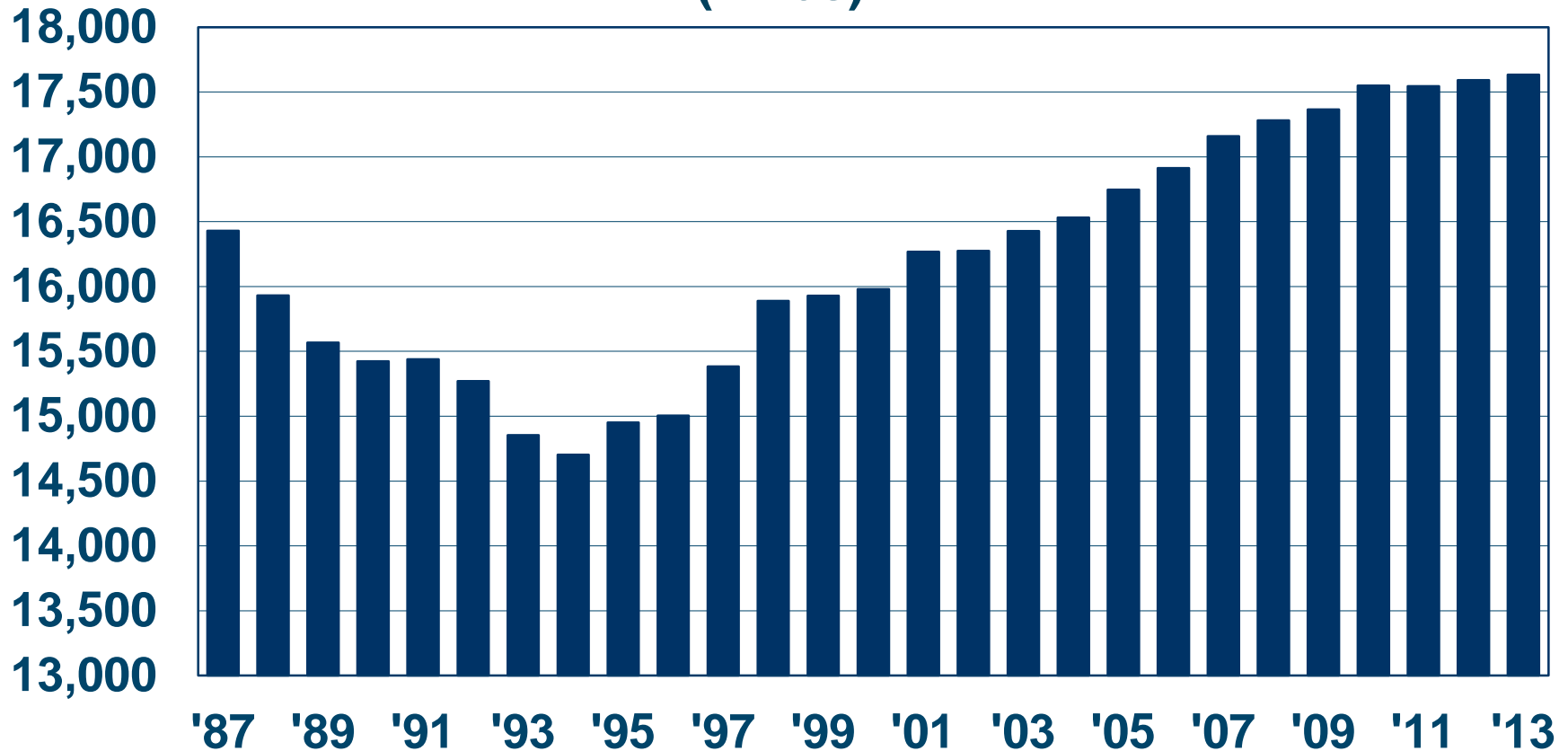
Flexibility

- Timing and location of export markets may change frequently, sometimes on short notice.
 - *Changes may occur due to exchange rate fluctuations, weather, commodity price fluctuations, vessel availability and pricing, and congestion in elements of the logistics chain.*
- This places a premium on flexibility in use of assets.
- It also implies that some surplus assets are usually necessary to participate effectively in these markets.
- Adaptability is key to effective market participation.



Second, Third, and Fourth Main-Line Miles Have Increased

(miles)



Data are for Class I railroads. Source: AAR



Issues Going Forward

- Exports + imports are between 25% and 30% of what the rail industry does.
- Issues in these business lines are the basic issues of the industry, including:
 - The ability to put new infrastructure in place (railroad, customer and port), particularly the permitting process,
 - Regulatory initiatives which endanger the ability to invest in growth and new initiatives and to reinvest in existing assets,
 - Availability of high quality people to operate and maintain the industry,
 - Regulatory threats to our customers' businesses.



Research Opportunities

- Development of advanced capacity measuring and modeling techniques.
- Understanding future market directions and drivers for commodities in our portfolio.
- Technology (both high and low tech) for safety and productivity improvements.
- Real time network and capacity management technology.
- Understanding labor markets, labor availability and training processes into the future.



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