



Rail Issue Discussion in Chile

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July 5, 2007

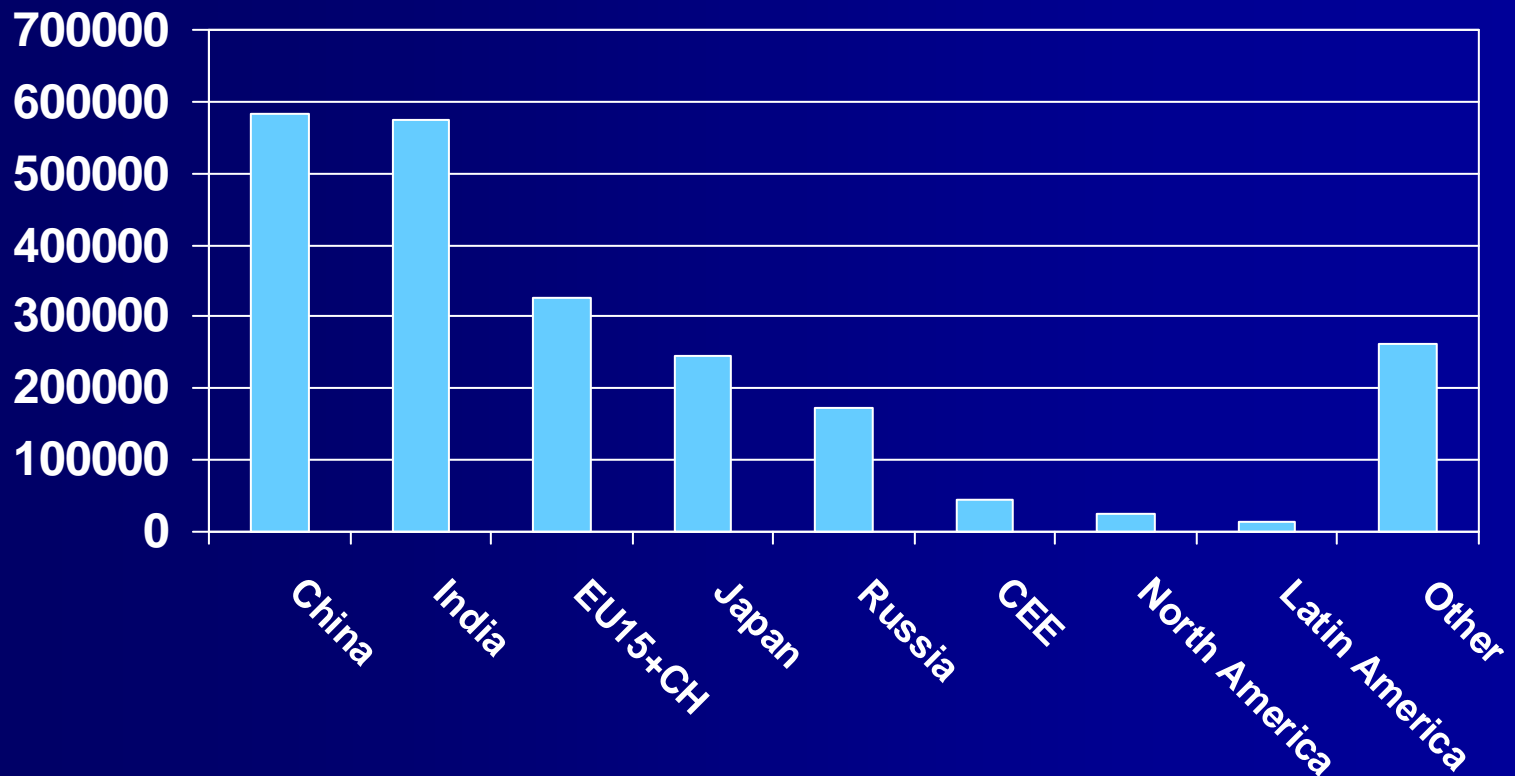
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Current state of the railways

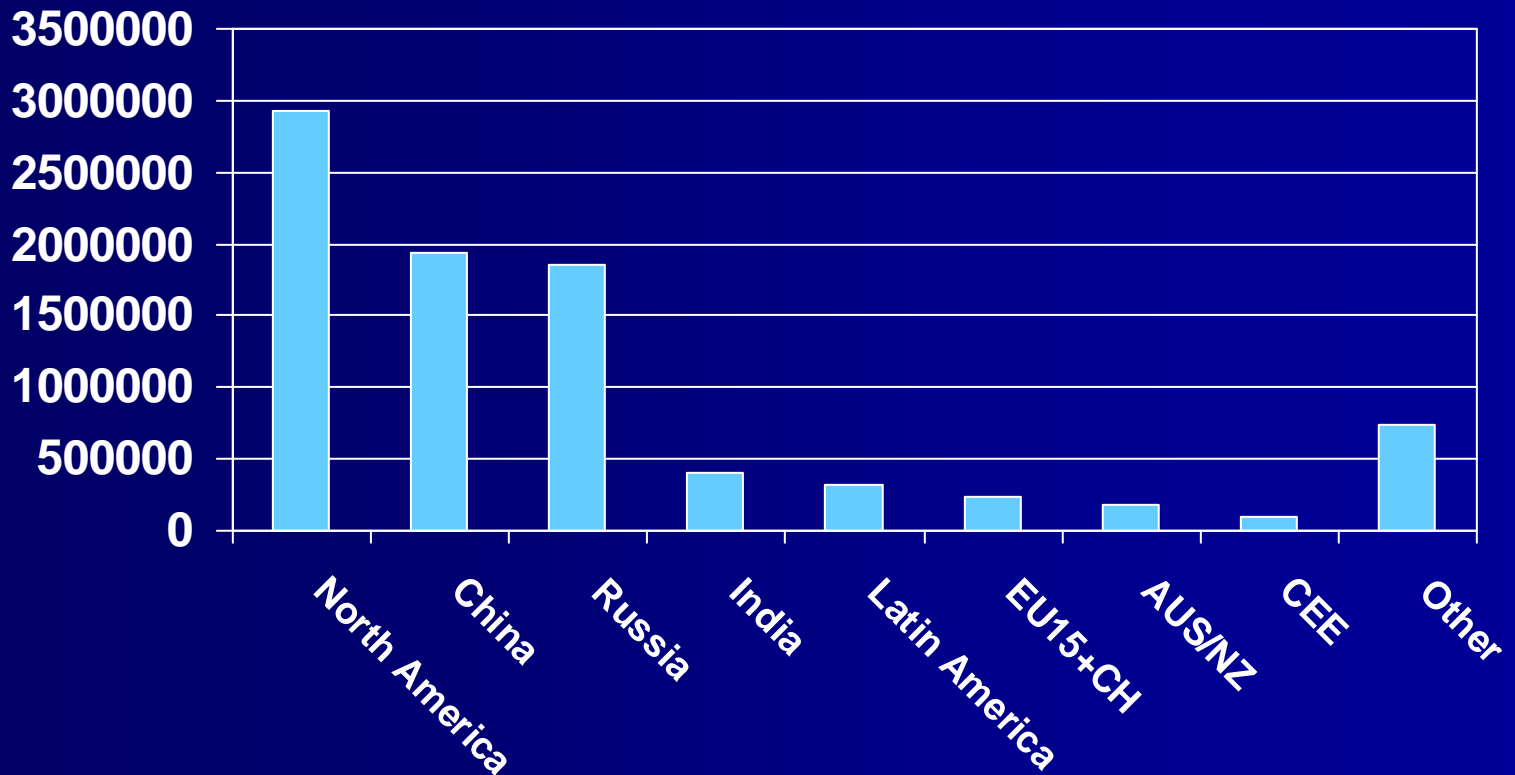
- North America: freight private & dominant, near capacity, profitable; intercity passenger (VIA and Amtrak) public, lose money; suburban systems are separate and lose money. Transport policy in flux.
- EU: nothing is profitable (\$ 50 B support), passenger dominant, freight has minor share. Except for HSR, rail in trouble
- Russia: recovering and restructuring (freight and passenger)
- China: monolithic and dynamic (now more traffic than US)
- India: Passenger dominant, growing, but inefficient
- Japan: 3 major passenger companies private and profitable, 3 smaller passenger companies and freight company lose.

The World's Rail Passenger-Km (2005, Millions)



(0% private in 1980, 13% private in 2005)

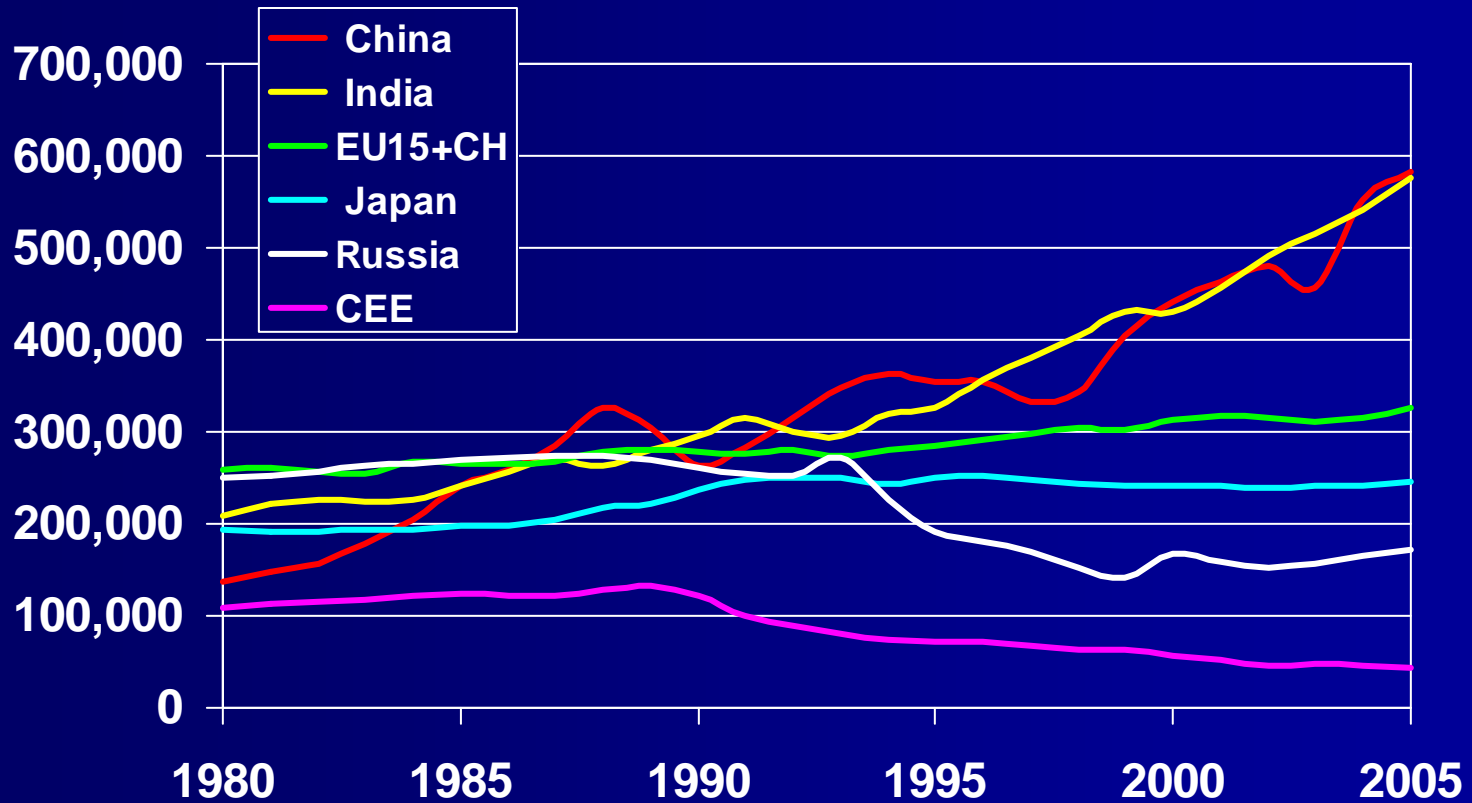
The World's Rail Freight Ton-Km (2005, Millions)



(22 % private in 1980, 37% private in 2005)

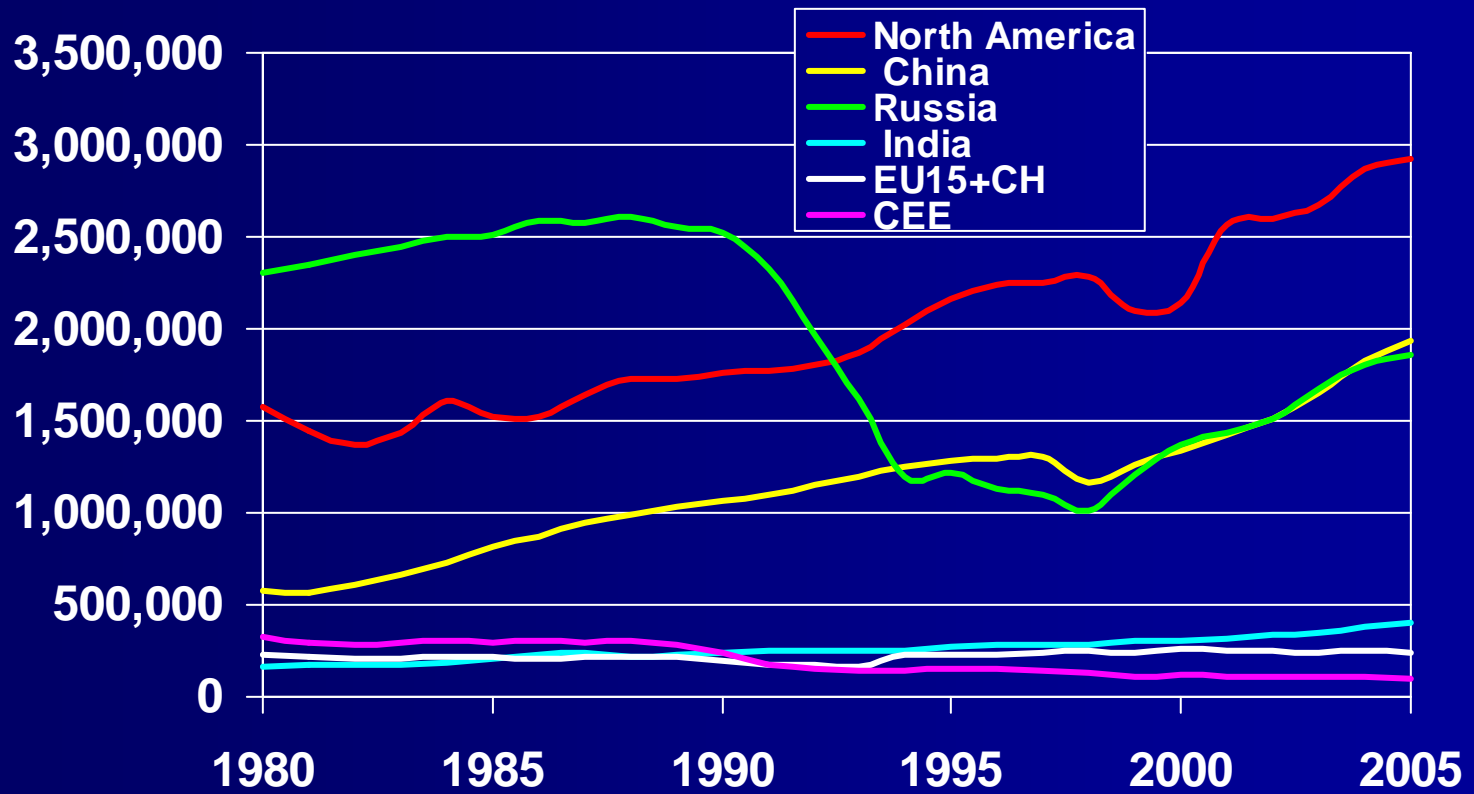
Passenger Traffic Trends

(Million Passenger-Km)



Rail Freight Traffic Trends

(Million Ton-Km)

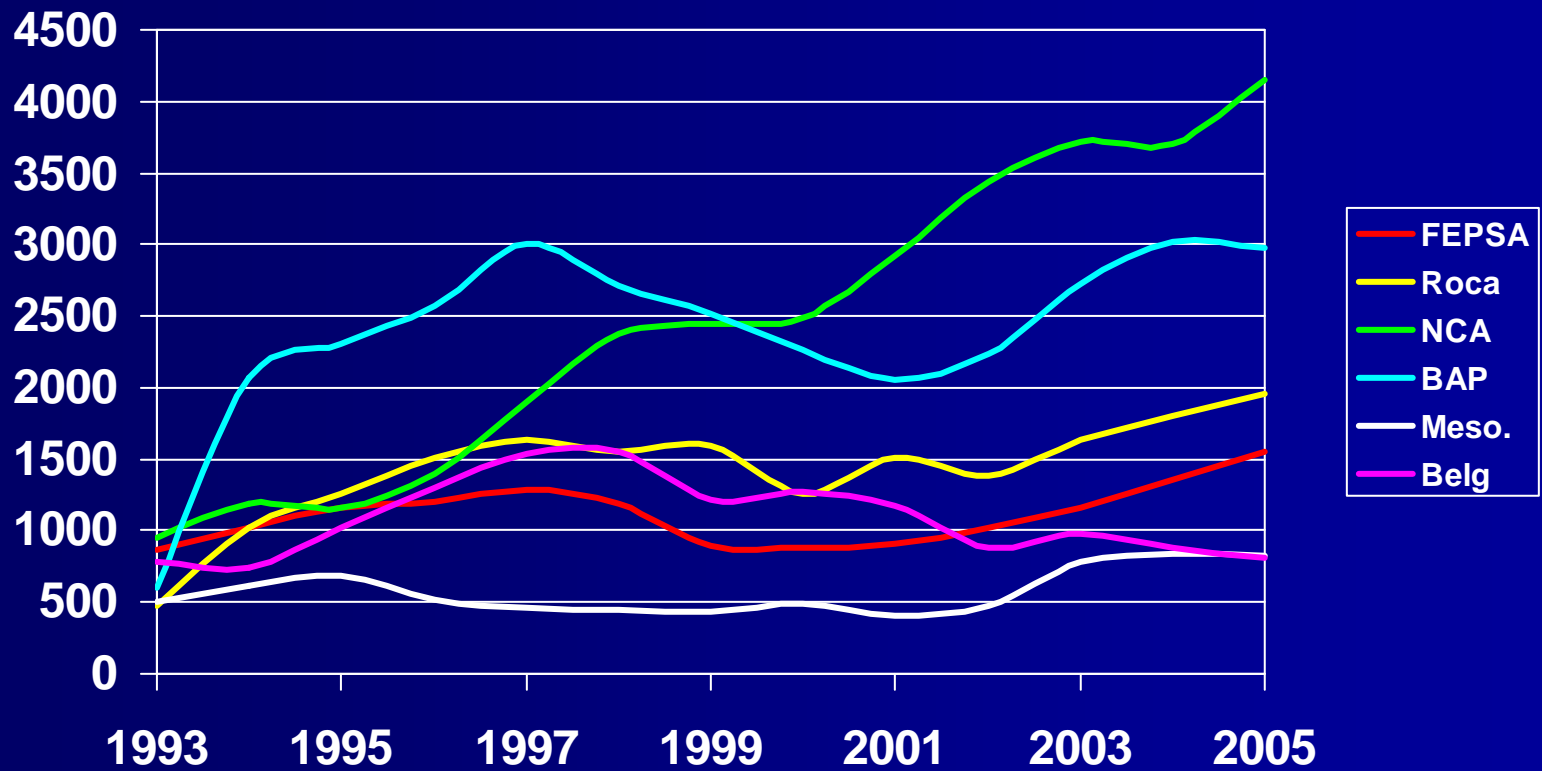


Railways relevant to Chile

- Argentina: both freight and passenger concessioned. Growth for freight, passenger affected by economy
- Brazil: freight and Rio passenger concessioned. Growth for both
- Mexico: freight concessioned, passenger essentially eliminated. Freight growth strong
- US and Canada: freight private, intercity passenger public. Freight growth, passenger stagnation

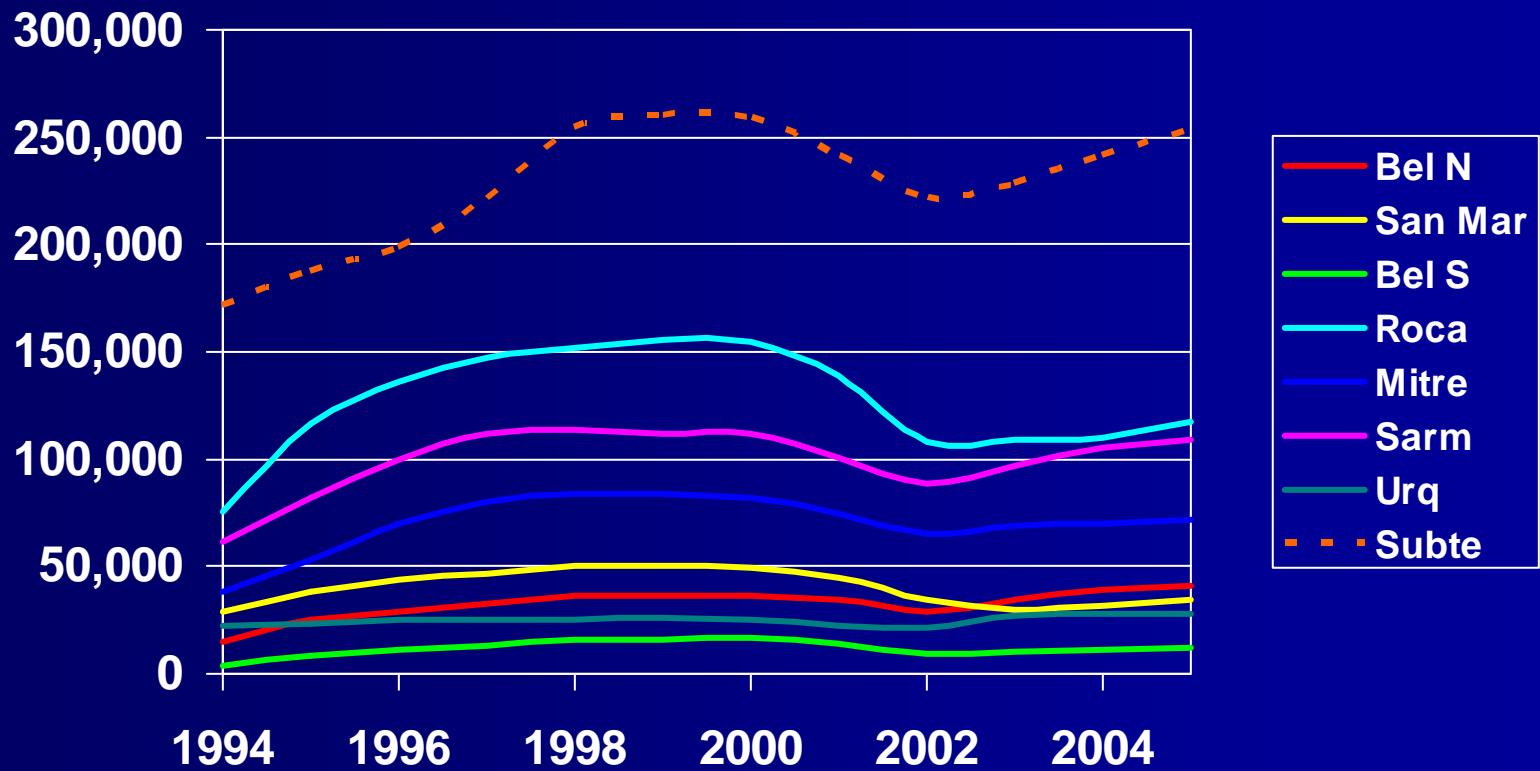
Freight concessions in Argentina

(million ton-km)



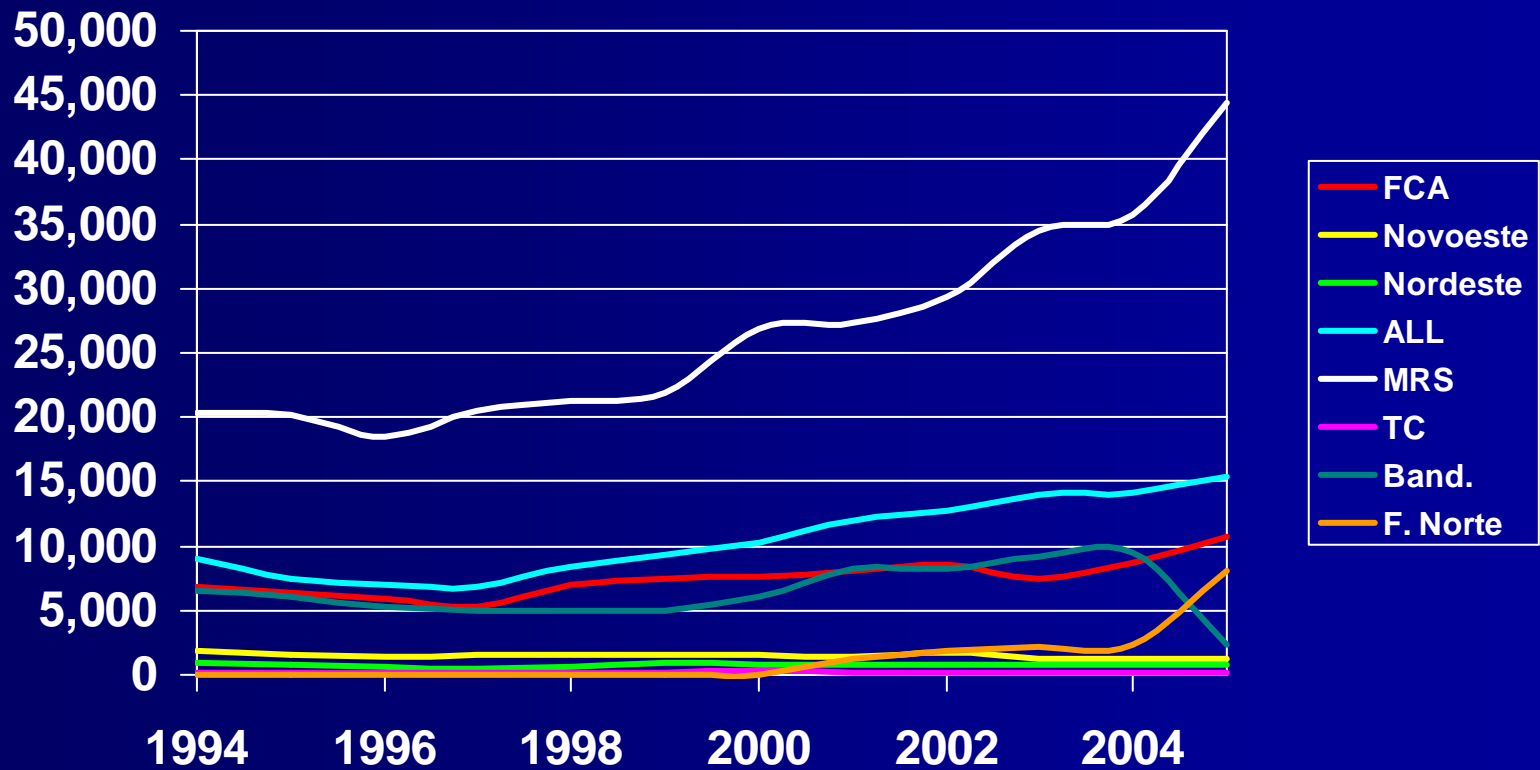
Passenger concessions in BsAs

(000 passengers)



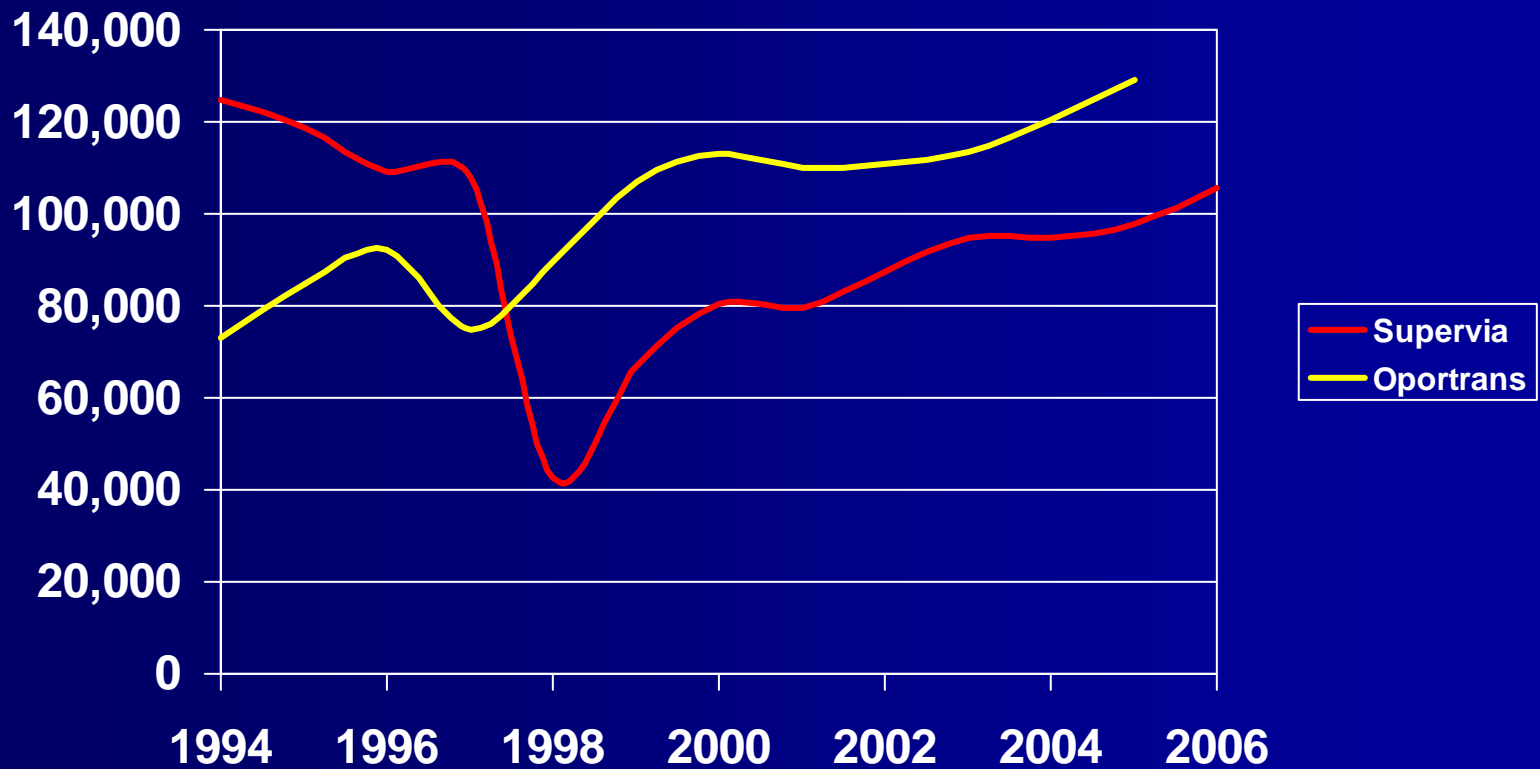
Freight concessions in Brazil

(million ton-km)



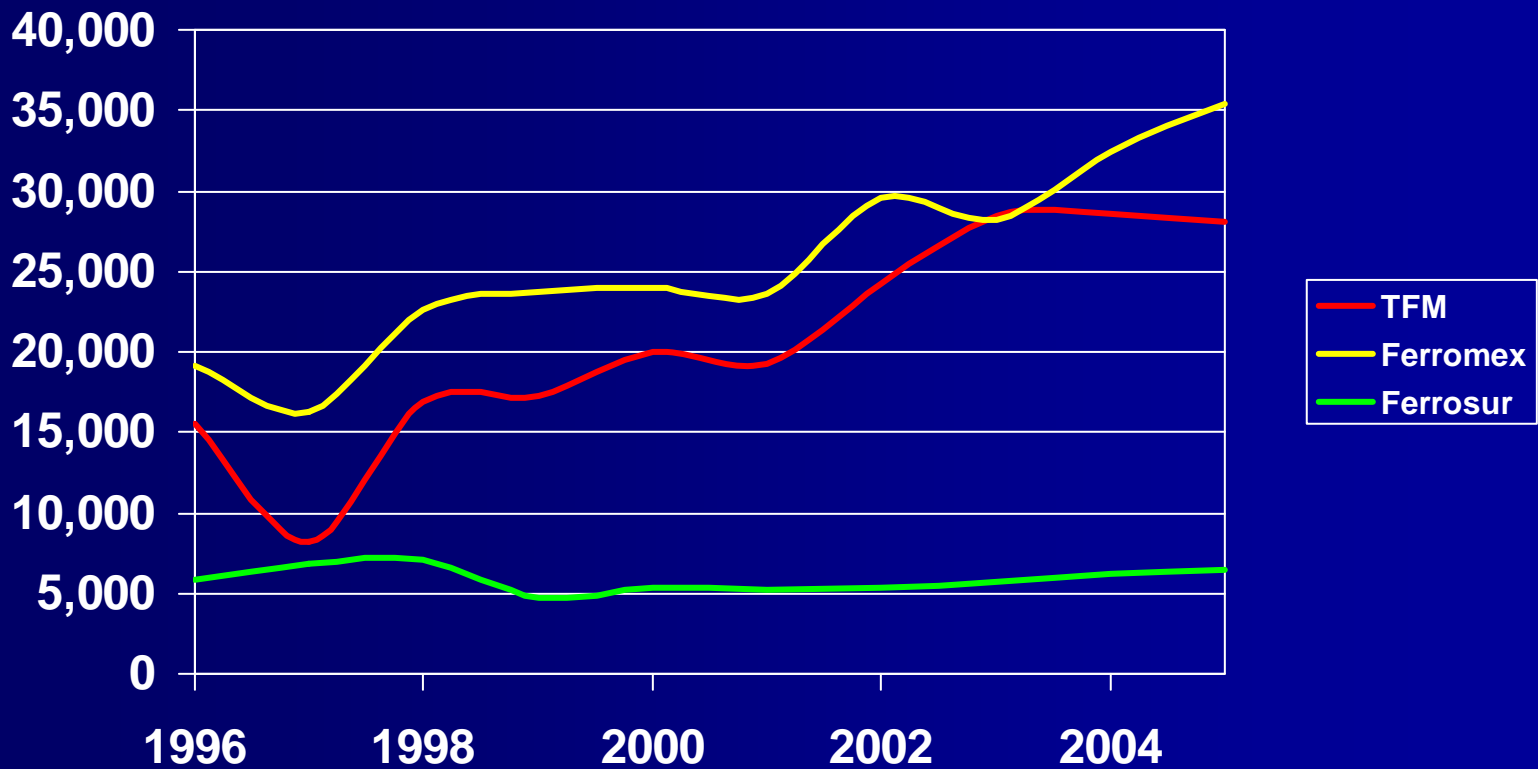
Passenger concessions in Rio

(000 passengers)



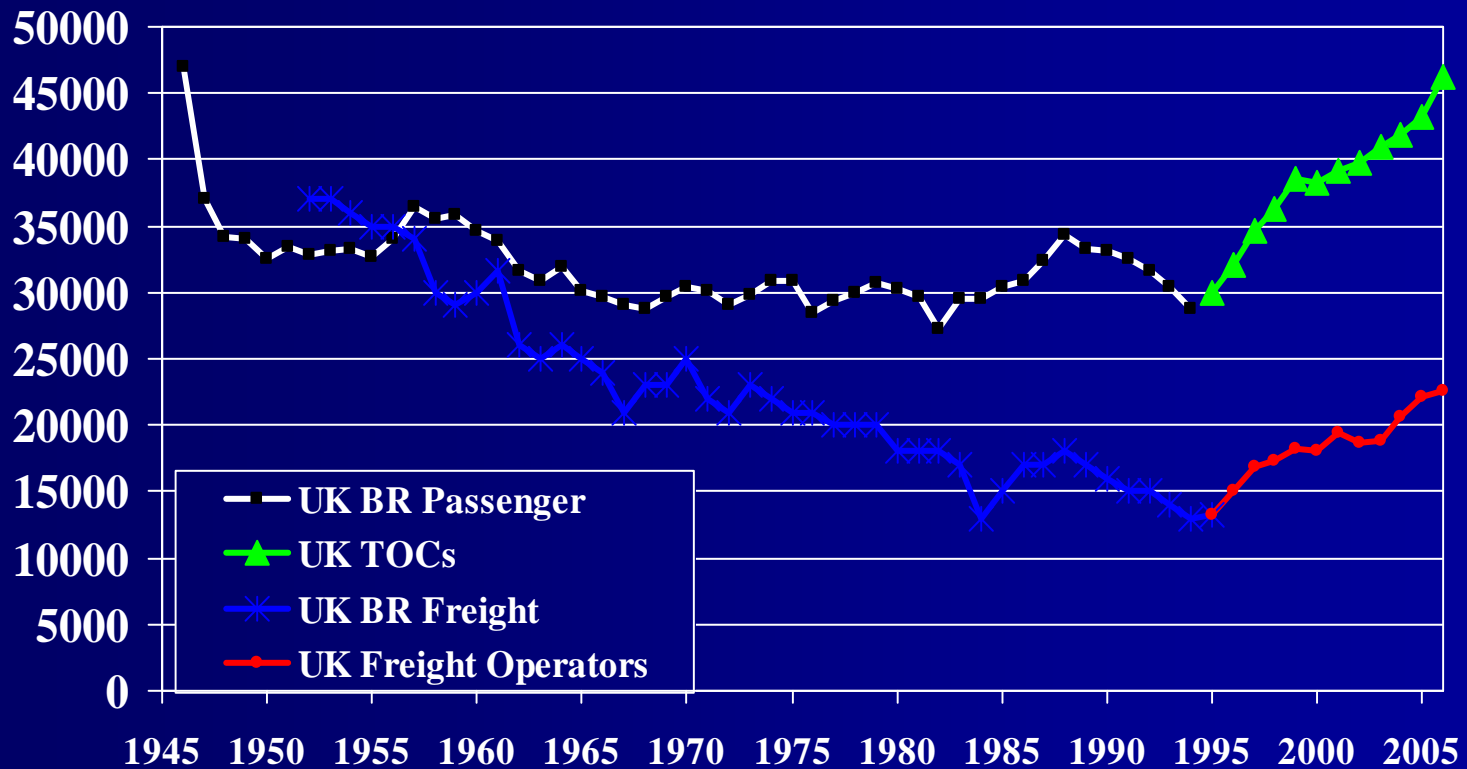
Freight concessions in Mexico

(million ton-km)

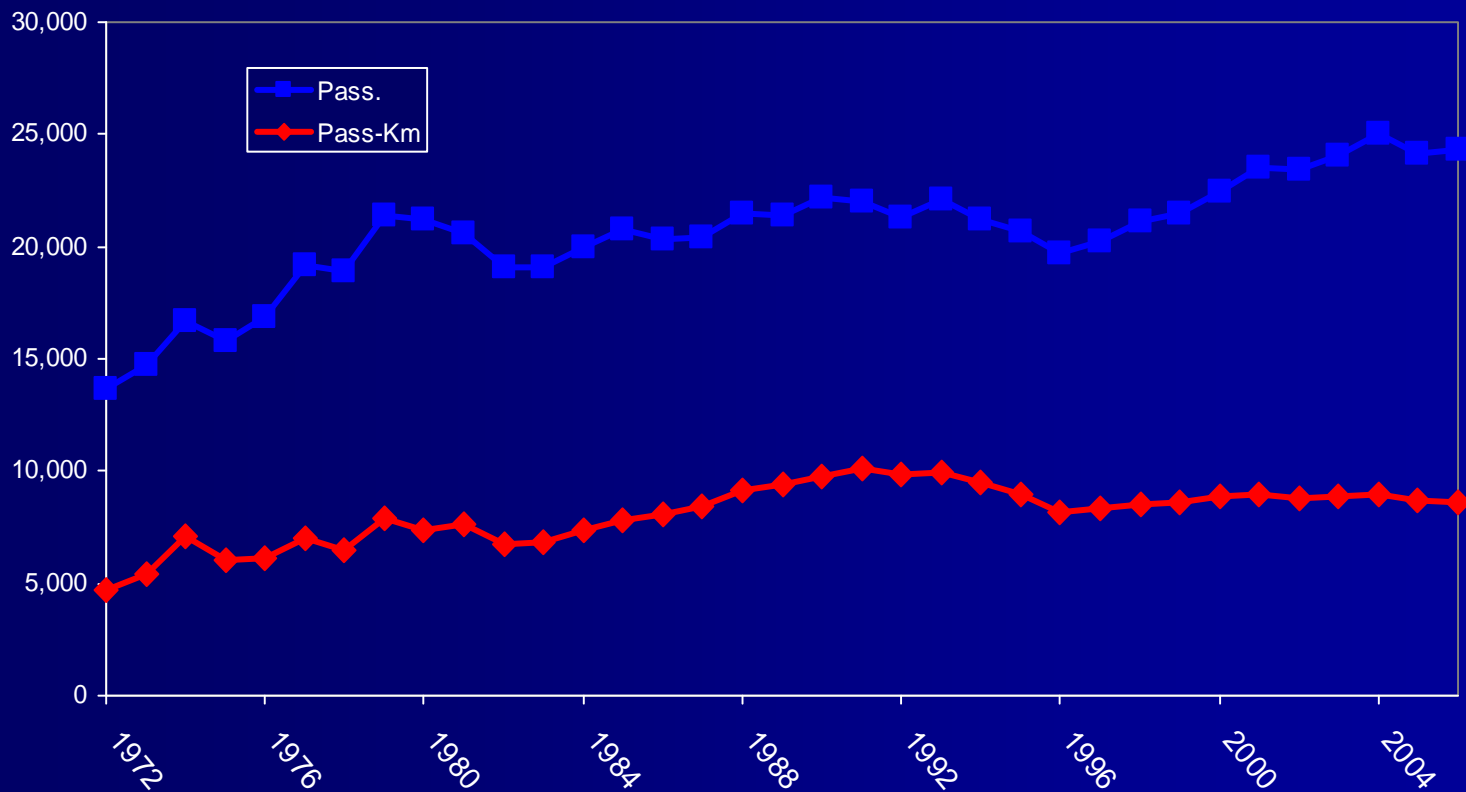


Rail traffic in the U.K. before and after privatization

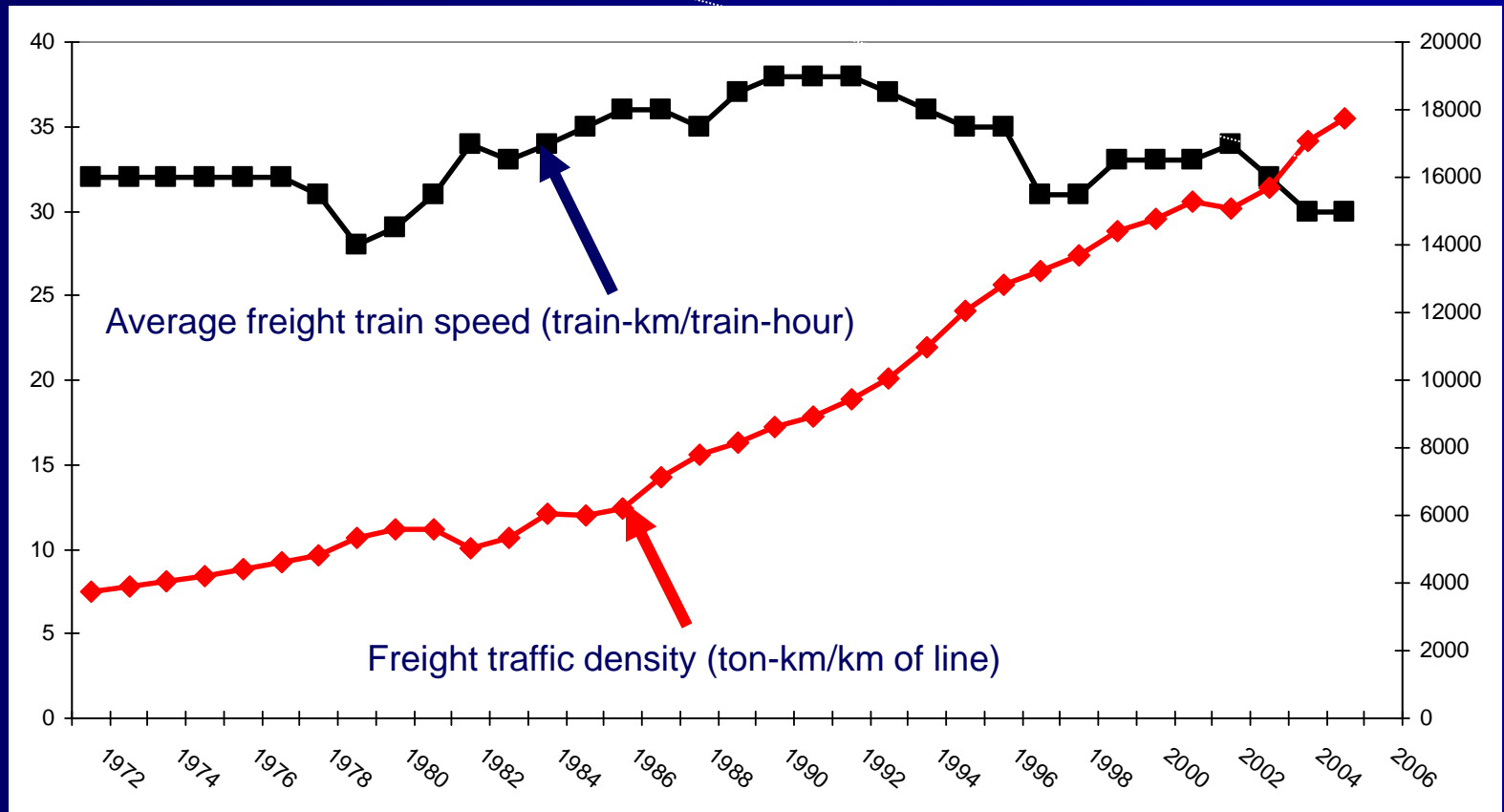
(000,000 passenger-km and ton-km)



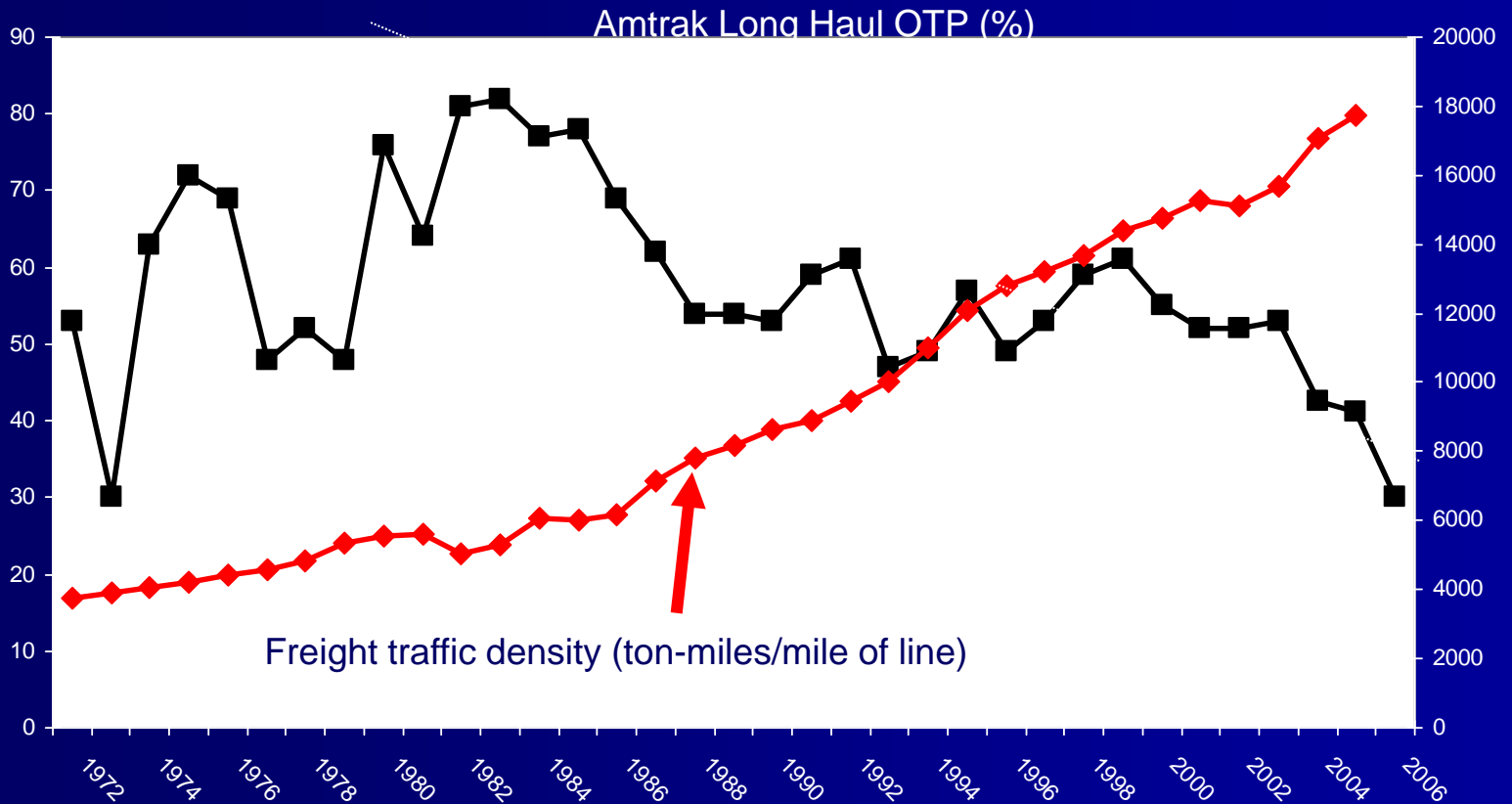
Amtrak passengers (000) and passenger-km (000,000)



Average US Class I Freight Train Speed is Beginning to Suffer from Increasing Freight Traffic Density



Amtrak's Long Haul On-Time Performance Is Affected by Class I Freight Traffic Density



Models of organization

- Structure and Ownership
- US/Canada: freight integral and private (competition IN the market), passenger usually tenant and public. Intermodal and intra modal (rail) competition.
- EU models based on vertical separation, but ownership varies. Freight competition IN the market, passenger competition FOR the market (franchises) and intermodal.
- Australia has mixture as well
- Latin America: integral concessions (FOR market) with intermodal competition both freight and passenger. Chile is only separation model.
- In all cases, regulation (if any) must be consistent with structure, ownership and competition objectives

Structure and ownership

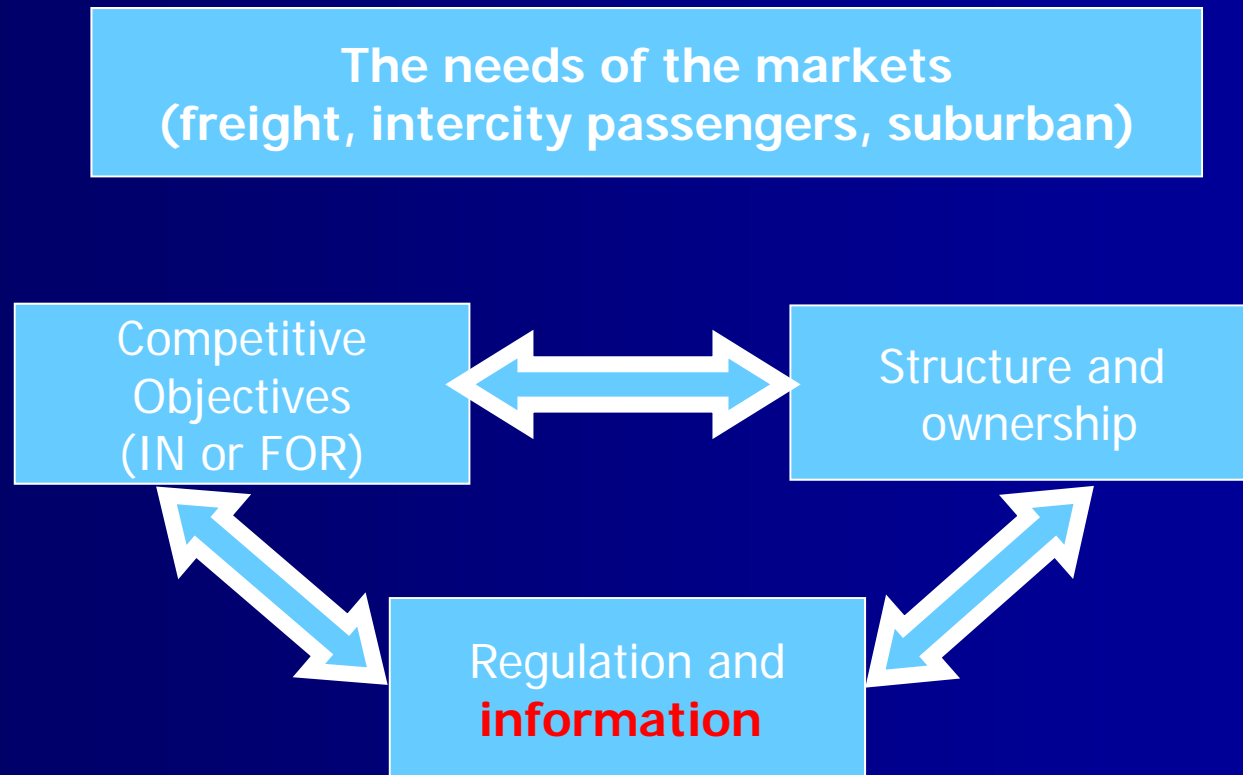
Structure	Ownership		
	Public	Partnership	Private
Integral (Monolithic)	China, India, South Africa	Network Rail? India Railway Container Corp, Latin American freight and passenger concessions	Smaller US freight railroads (500), East Japan, Central Japan and West Japan
Dominant Operator Integral, tenant operators separated	Amtrak and VIA, Japan Rail Freight, Russia	US freight and commuter railways in the NEC	US Freight railway trackage rights, JB Hunt
Separation	"Standard" EU model	Some UK franchises, Network Rail?	Most UK franchises, Railtrack (but not Network Rail), EWS

Mixtures are often the best

Markets and models

Type of Market	Purpose: Commercial or Social	Type of Competition (if any)	Public and Private Roles
Infrastructure	Utility or Commercial	None/FOR	Mostly public, though private ownership and/or contract operation is possible
Freight Services	Commercial	IN	Currently often public, moving toward private ownership and operation
Passenger Services			
High Speed Rail	Commercial	FOR	Currently public, could be privatized or franchised
Conventional Intercity	Commercial (social?)	IN	Currently public, could be franchised
Rural/regional	Social	FOR	Currently public, could be franchised
Suburban	Social	FOR	Currently public, could be franchised

Deciding on the railway role



Railway data

- For what purpose?
- Must fit structural model
- Collection (IFRS) is clear, but **reporting** is critical
- Institutional separation versus accounting allocation
- Total cost recovery objective
- Who pays fixed costs?
- Simple versus two-part access charges relate to structure (EU experience)
- Regulators critical: STB, Transport Canada. See also Argentina, Brazil and EU sites. UIC also useful

Who uses data, and why

Figure 2

Reporting Data Types and Users					
User Type	Government or Public Accounting	Financial Accounting	Operational and Physical Data (including revenues and safety)	Benchmarking	Detailed Infrastructure Analysis
Infrastructure Manager	Use of public funds	Ensure financial viability	Network utilization analysis	For performance comparisons	Ensure appropriate condition, measure marginal costs, calculate mark-ups
Freight Operator		Financial reporting	Only for freight		
Commercial Passenger Operator		Financial reporting	Only for passenger services		
Social Passenger Operator	Use of Public Funds	For Operator and supporting government	Permit justification of costs and charges		
National and Local Governments	Reconciliation with public funding	Ensure adequate payments for limited purposes	Analysis of potential efficiency and capacity challenges	Comparisons of national railways with others	Analysis of capacity and investment issues
Regulators		Analysis of economic viability and potential monopolistic behavior	Analysis of traffic trends and pricing decisions	Performance comparisons for infrastructure	Analysis of infrastructure access and access charge proposals

How are railways financed?

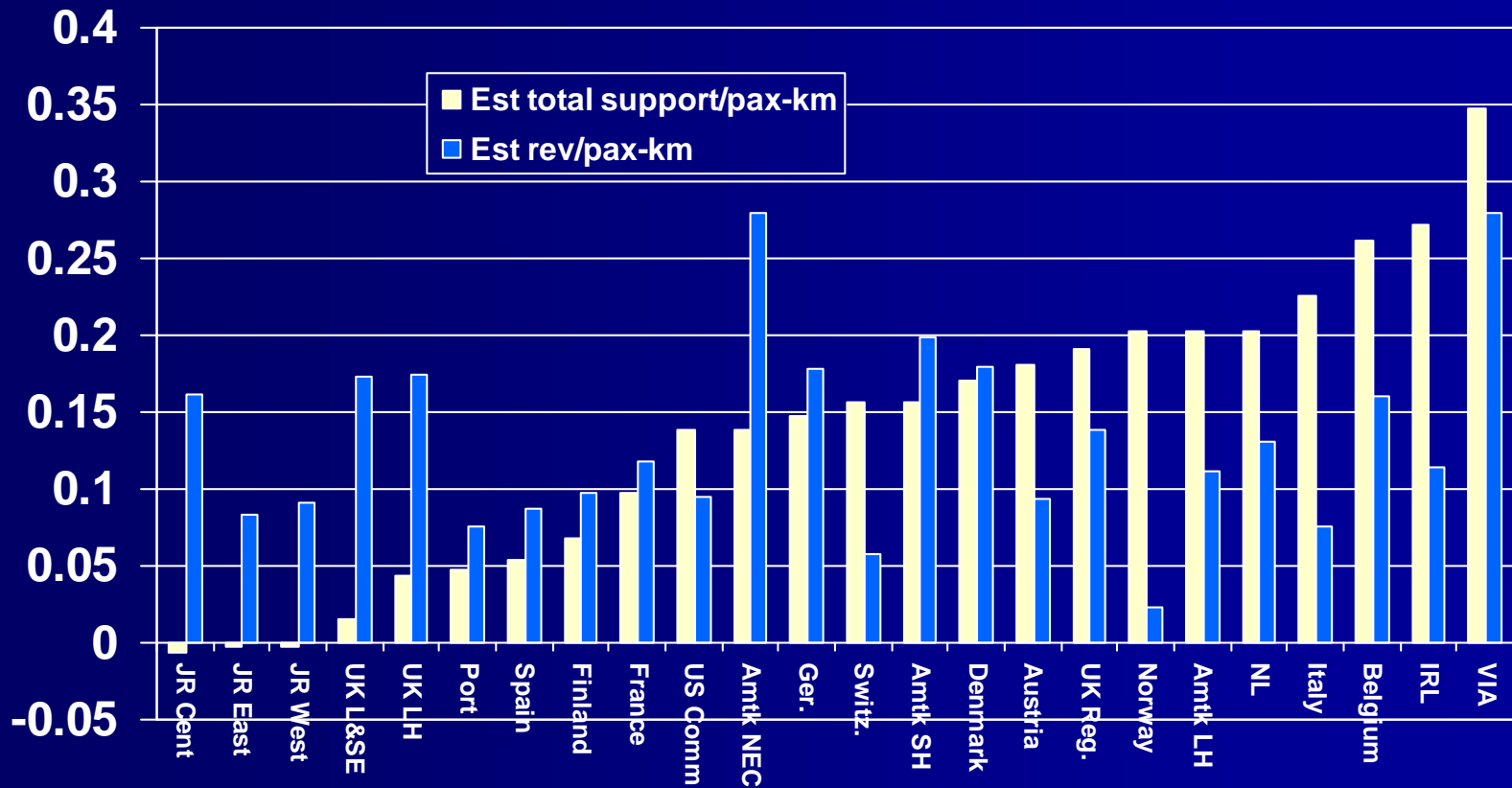
- Balance of public and private objectives
- Ownership and control
- Ability to separate activities
- Public policy for financing: capital only, competition for subsidy

How are railways financed?

- U.S. No public finance for freight railroads. Amtrak (a corporation) supported by Federal budget for both operating and capital. Canada similar
- EU generally limits support for "commercial" activities (freight, intercity passenger) but permits support for infrastructure (with open access) and for "social" services. Wants to require competition FOR social markets (UK, Germany, Sweden, NL)
- UK example: support to Network Rail for infrastructure, support to franchises by competitive contract, limited support to freight under contract
- Latin America: no support for freight, competed concessions for passengers (capital and operating)

Support to passenger services and revenue from passenger services

(2004 PPP \$)



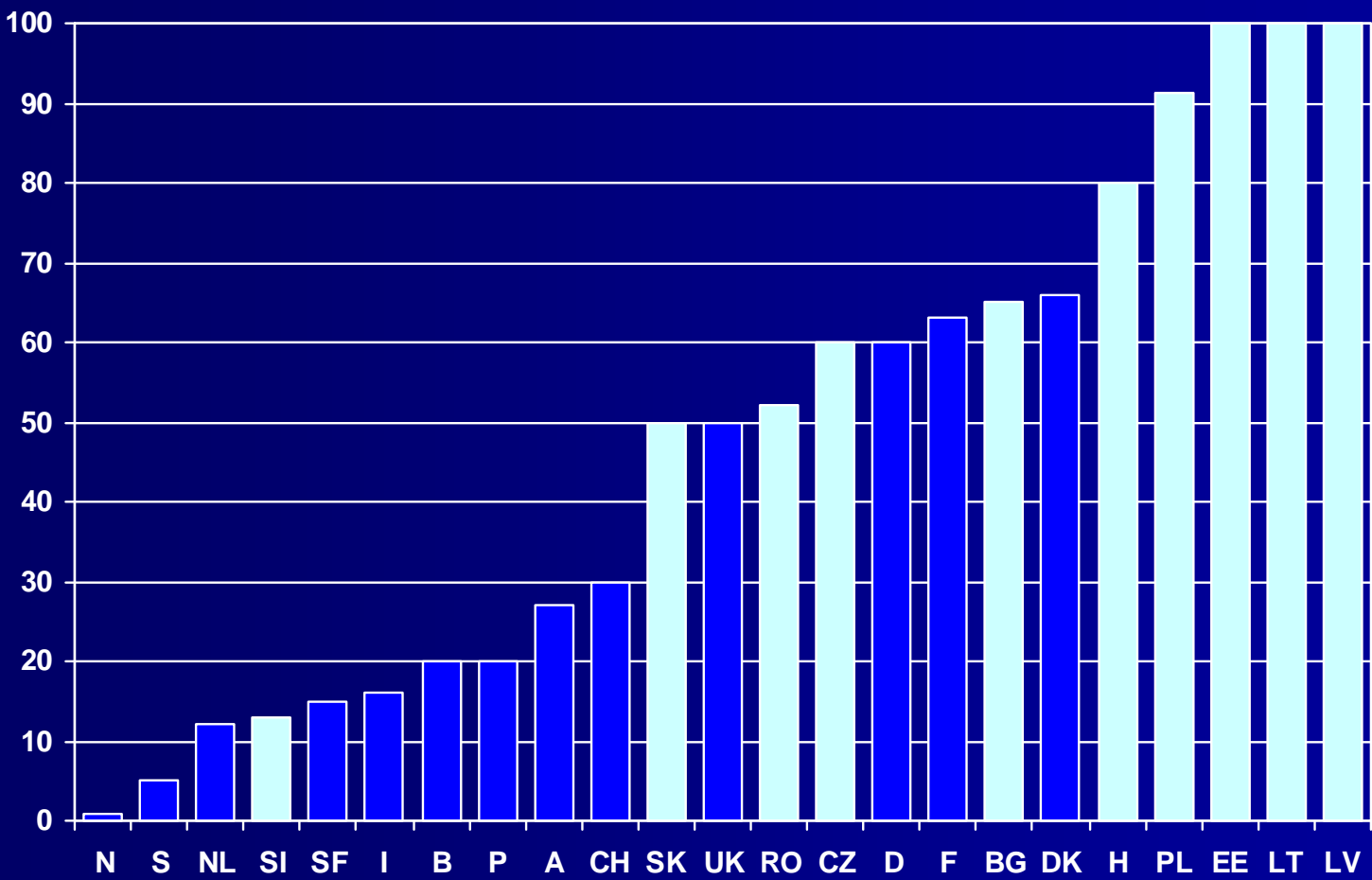
Railway ideas for Chile: still in development, but

- A key limitation is better objectives. What is rail needed **for** in Chile? Market (fret, icp, suburban), where?
- Define competition objectives
- Roles for the private sector (infra, fret, passengers)?
- Better information for planning, investment and decisions

A note on access charges: Instructions for the regulator

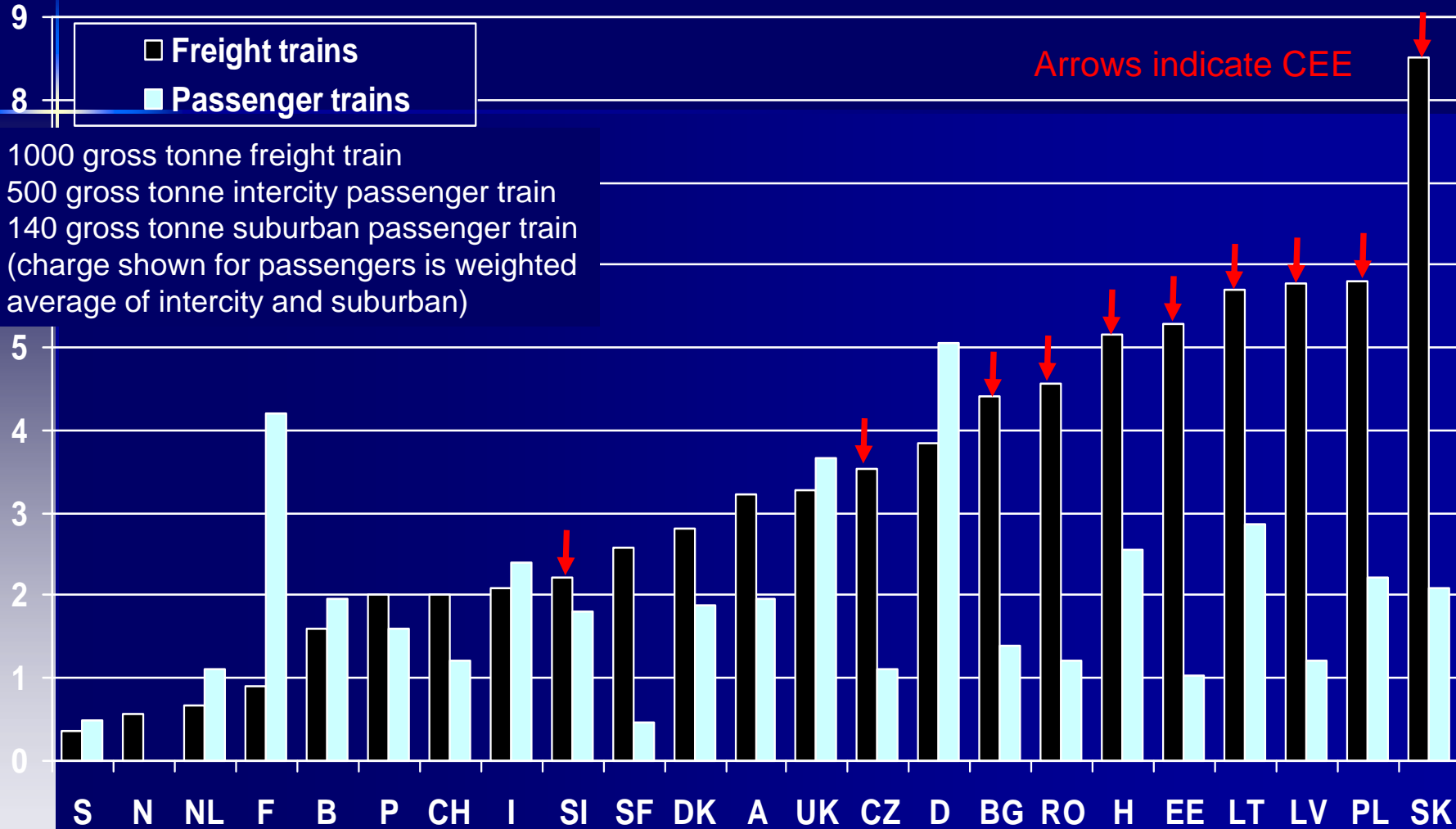
- Key initial questions: what do operators pay (versus public) and shares for freight versus passenger
- Simple versus 2 part regimes depending on type of service
- Calculation difficult: techniques debated and data don't exist
- Greatly simplified by dominant user/tenant approach (tenant pays marginal cost)

Total cost coverage targets in the EU



Average Access Charges

(€/Train-Km – Excludes cost of electric traction)

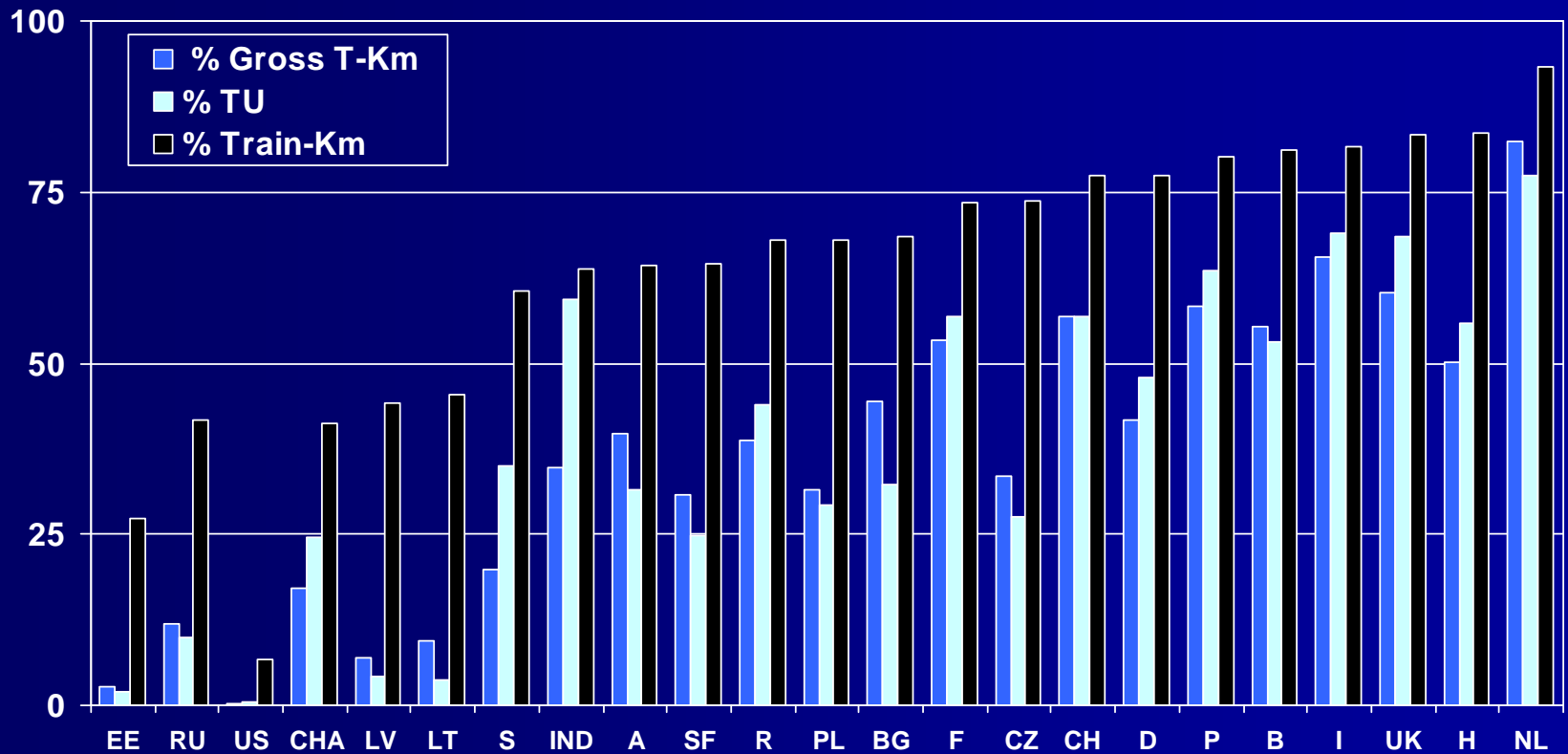


Access Charge Regimes for Types of Rail Users

	Pure SMC	MC+	FC-	FC Contract with Sponsor (if any)
Suburban				High requirement for scheduled slots, relatively low speed. Limited response to price signals, high public support
HSR Franchise			Use two-part tariff for operations on conventional lines.	Slots all scheduled, rigid quality requirements, number of competing operators limited
ICP Conventional and HSR:				
<i>With competition in the market</i>		High capacity requirements. Two-part contracts appropriate, but fixed component should be minimized.		
<i>Without competition (or with competition for the market)</i>			High capacity schedule requirements. Suitable for two-part contracts	
Freight	Low schedule and track quality requirements. High response to price signals. Use either SMC or MC+ simple tariff with minimum mark-ups. Markups(if any) for freight in domestic, import-export and transit traffic movement should be uniform.			

Traffic Mix

(Percent that is Passenger Traffic)



$$TU = P\text{-Km} + T\text{-Km}$$

Examples of rail data

Reporting Type	Example Source	Remarks
Government or Public Accounting	Government agency budget publications	No common format
Financial Accounting	SEC 10K statements (US), Amtrak Annual Report (US), UIC International Railway Statistics, Tables 71 -74, STB "Statistics of Class I Railroads" (US), Annual Reports posted on various websites (see data summary)	UIC Tables 71,72 and 74 have no LOB data. Table 73 provides only summary data on revenues and expenses by LOB (only 5 EU member railways complied in 2003). Annual Reports are consolidated and do not show individual LOB results.
Operational and Physical Data (including revenues and safety)	UIC International Railway Statistics, STB "Statistics of Class I Railroads"	STB data more detailed than UIC data
Benchmarking	UIC "Lasting Infrastructure Cost Benchmarking"	Utility limited: results and railway identities not public information. Focus is on time series and cross-section comparisons, not detailed relationships between users and costs.
Detailed Infrastructure Analysis	Network Statements.	Focus on network characteristics and capacity or investment plans, not on detailed data needed for MC analysis