



Railway Restructuring in China: The Great Railway Challenge

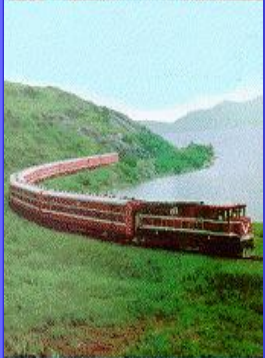
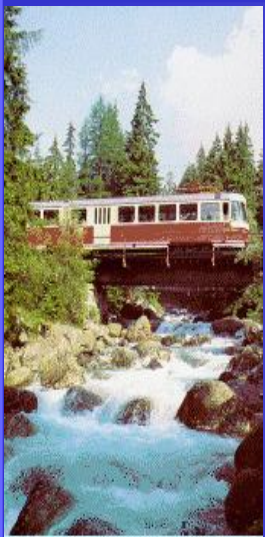
Louis S. Thompson
Railways Adviser
The World Bank
March, 2000



The World Bank

Major Issues in Railway Restructuring

- Government/Railway relationship
- Enterprise structure
- Private/public boundary



Government/Railway Relationship

- Government does policy, regulation and finance (U.S. is an example)
- Enterprise becomes “commercial”
- Changes are **inseparable**



Enterprise Restructuring

- Markets, geography and functions
- Passenger market structure and competition
- Freight market structure and competition
- Public/private boundary

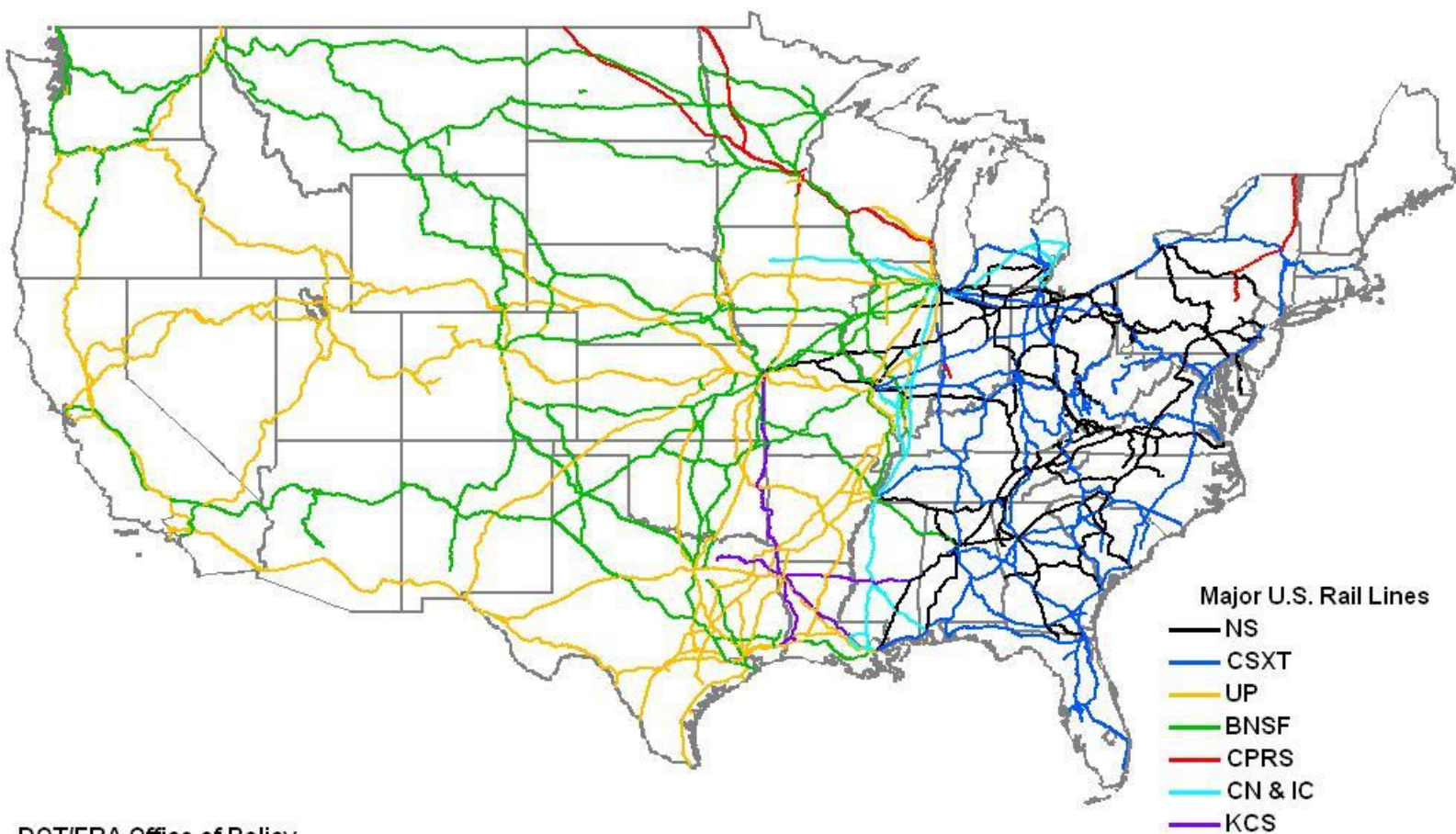


Structural Options

- Integral models: Latin American concessions
- Predominant operators control infrastructure, secondary operators pay access fees: U.S. and Japan. Can have competition by parallel tracks or by trackage rights
- “UP/DOWN separation of infrastructure (EU/UK): permits full, or licensed competition
- Other separations (wagons)



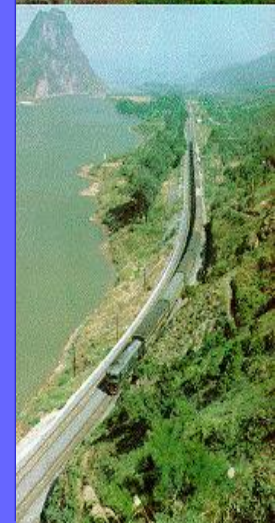
Competition on Parallel Tracks: U.S. Class I Railroads



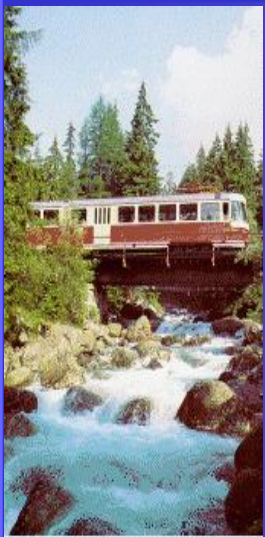
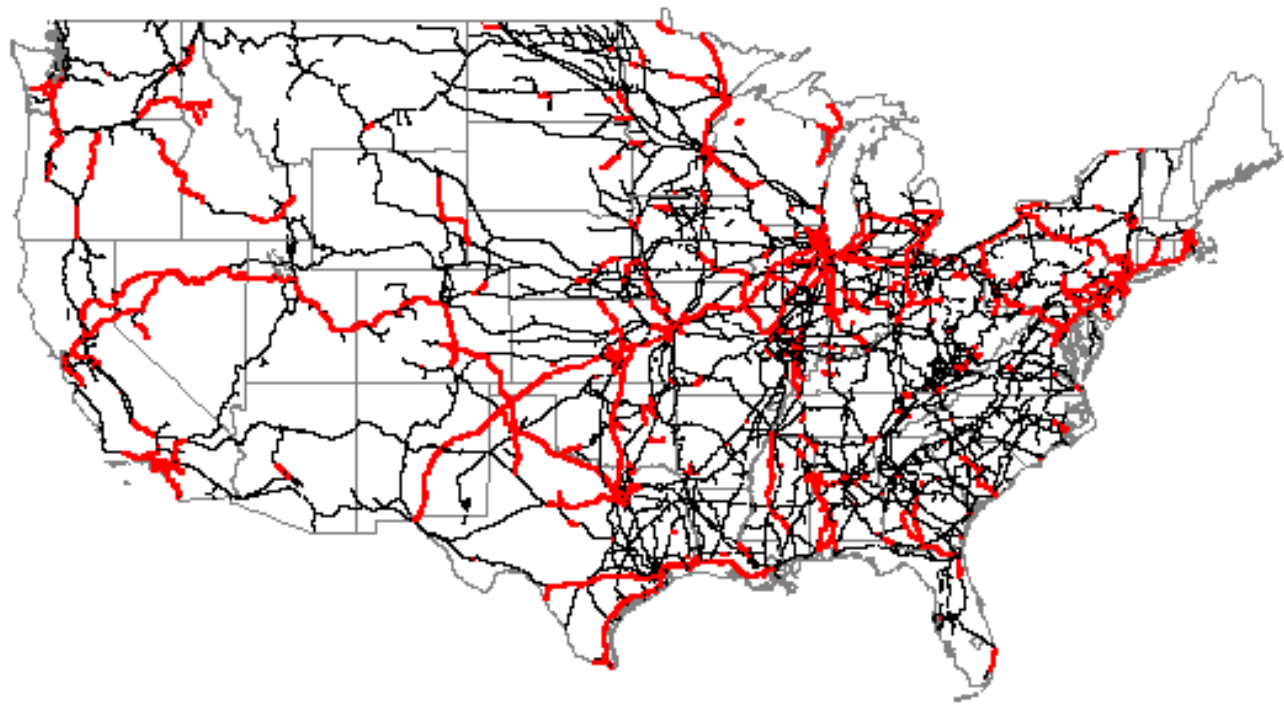
DOT/FRA Office of Policy



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Competition on the Same Tracks: Multiple Use U.S. Freight Tracks (Excluding Amtrak)



Amtrak: The Secondary User



LEGEND

- Amtrak® Train Routes
- VIA Rail Canada Train Routes
- Thruway Connecting Services*
- Other Connecting Services*
- Other Rail Services*
- ★ Amtrak® Vacations Destinations

For Information & Reservations, Call
1-800-USA-RAIL
 Due to space limitations, not all stops are shown.

* Depending on route, connecting services may be provided by train, motorcoach, van, taxi or ferry. Separate fares and reservations may be required on other carriers.

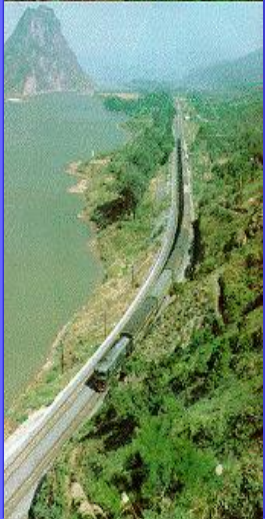
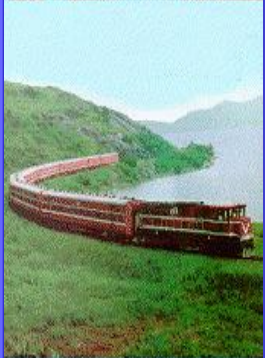
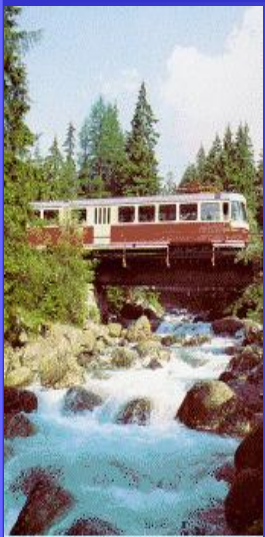
Amtrak System Map Effective May 1999



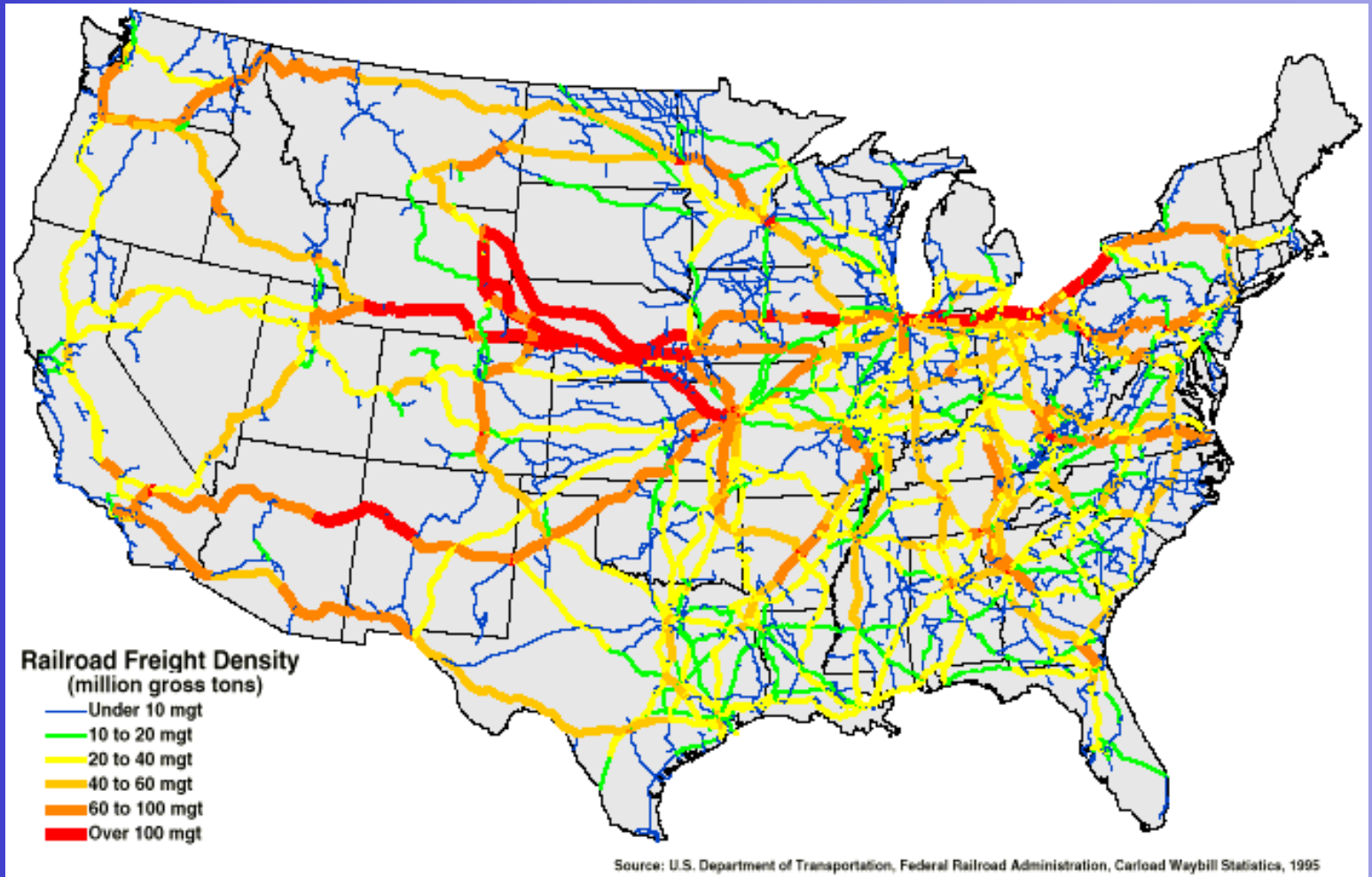
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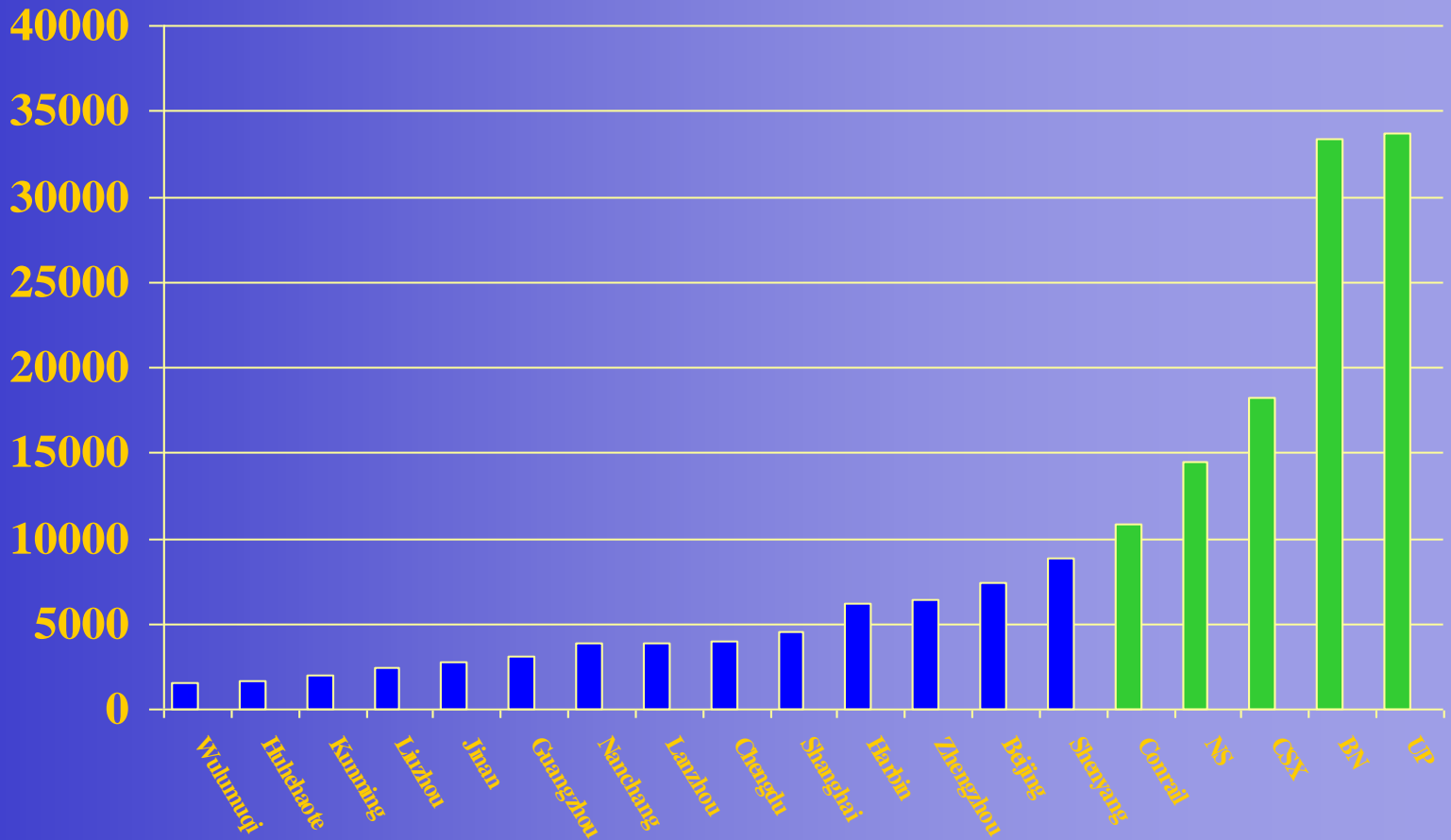
The Full Predominant/Secondary Model: Multiple Use U.S. Tracks Including Amtrak



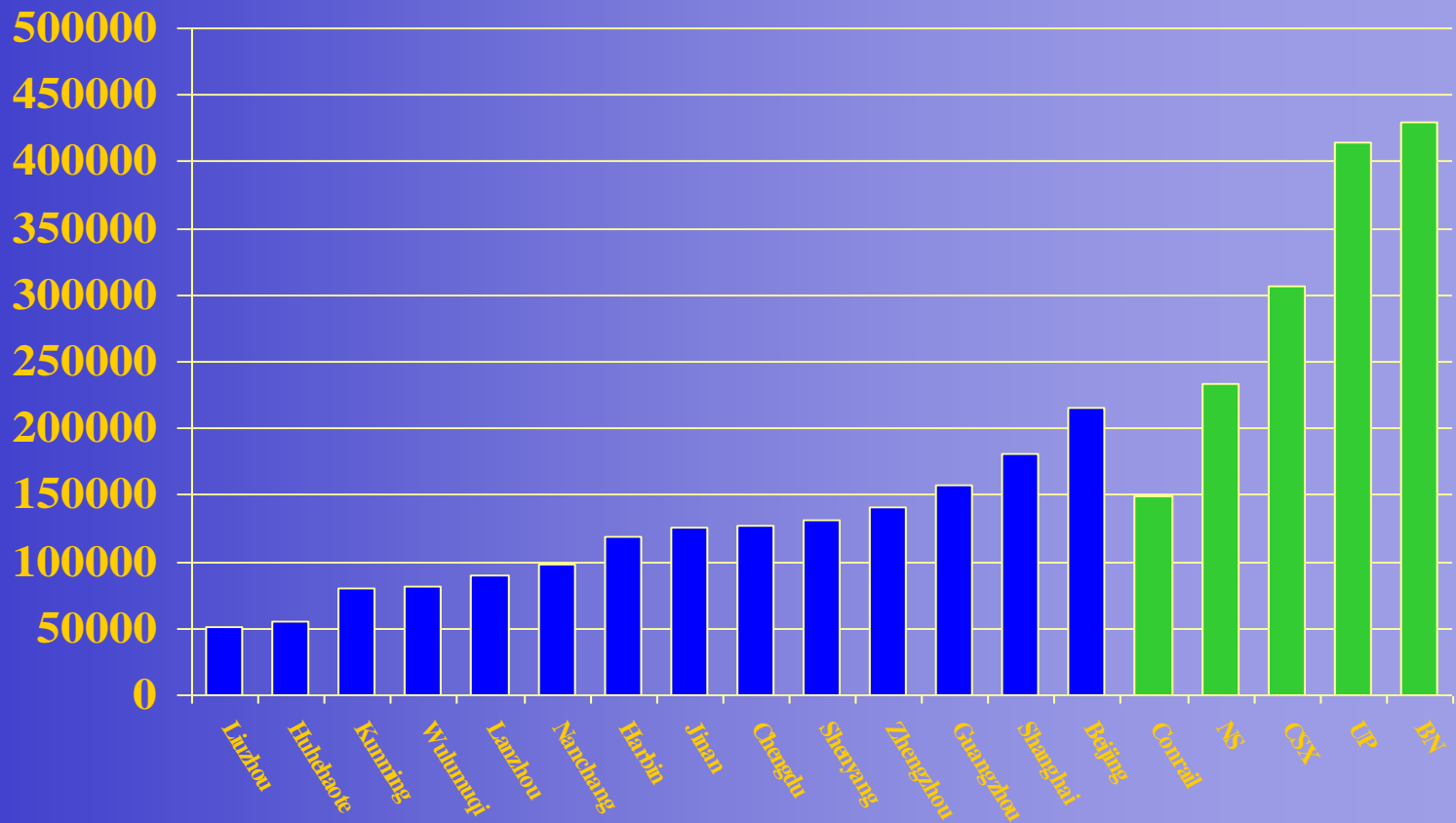
Analytical Tools: U.S. Freight Line Traffic Density



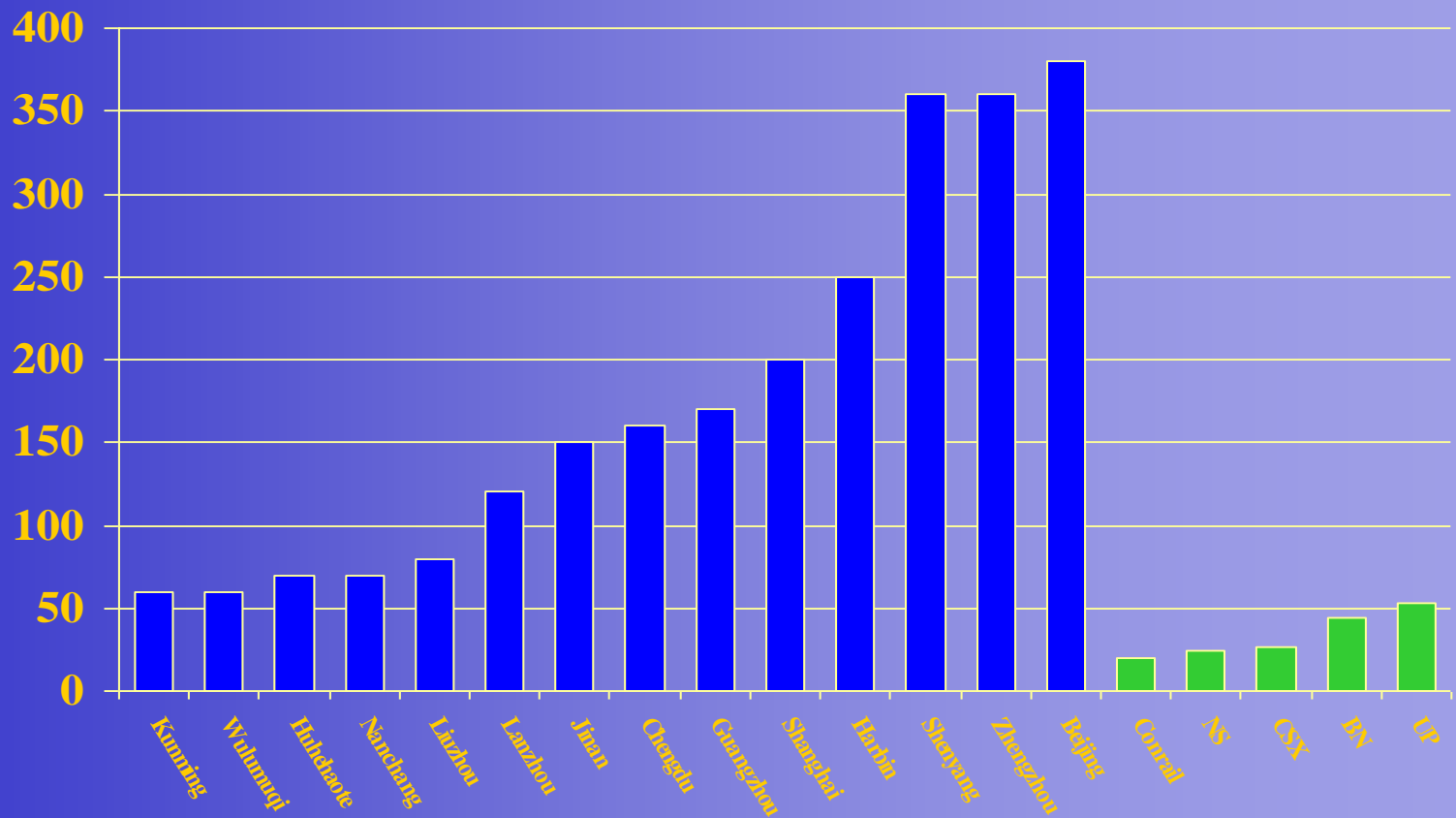
Km of Line: MOR Administrations Compared with U.S. Railroads



Freight Tons Originating (000,000): Comparison of MOR Administrations with U.S. Railroads



Employees (000): Comparison of MOR Administrations with U.S. Railroads



“Other Separations”: Equipment Ownership

US Freight Wagon Fleet 1997

Type	Total	Class I Railroads	Other Railroads	Car Companies and Shippers
Box cars:	156,574	94,165	46,204	16,205
Plain	31,681	5,017	12,889	13,775
Equipped Box	124,893	89,148	33,315	2,430
Covered Hoppers	365,196	150,121	20,255	194,820
Flat Cars	134,233	83,745	10,893	39,595
Refrigerator Cars	29,650	24,035	3,379	2,236
Gondolas	187,224	109,162	17,546	60,516
Hoppers	163,917	101,724	16,070	46,123
Tank Cars	225,029	945	35	224,049
Others	8,596	4,596	1,726	2,274
Total	1,270,419	568,493	116,108	585,818



Structural Models in China

- Integral: administration, regional or national structures with operations integrated with infrastructure
- Predominant operator : freight controls infrastructure (accounting separation of costs), secondary passenger companies pay for access. Freight competition through trackage rights or parallel tracks
- Infrastructure separations: break link between operators and track. All pay for access
- Mixes are possible, and predominant model could be an interim step toward separation if desired
- Both predominant model and separation models can foster private involvement if desired



MOR's 14 Administrations



The “U.S.” and “European” Models in China -- How They Might Work

Model	Possible Form in China		Advantages	Disadvantages	Issues
	Freight	Passengers			
“U.S. Model”	<p>“Administrations,” freight and infrastructure integrated (Accounting separation). Competitive trackage rights. Some system-wide freight operators and private wagons.</p>	<p>Market-based, national, regional or local carriers, all paying access fees. Carriers would be completely separated from freight carriers and infrastructure.</p>	<p>Easier transition. Good interim organization. Risk of disruption less. Passenger companies created gradually.</p>	<p>Parallel competition complex. Administration boundaries not major markets. Private operation difficult.</p>	<p>Establishment and division of freight and passenger tariffs. Modify Administration boundaries? Scheduling and dispatching of cross-Administration trains?</p>
“European Model”	<p>Administration-based infrastructure. Freight licenses at Administration level, but broadened for competition. Carriers pay non-discriminatory access fees. Private wagons?</p>	<p>Market-based, national, regional or local carriers, all paying access fees. Carriers would be completely separated from freight carriers and infrastructure.</p>	<p>Competition and market fit. Private operation easier. Lower interchange costs. Less regulation.</p>	<p>Highest risk of disruption of freight. Lack of good cost information would make access charges difficult to set.</p>	<p>Setting of service licenses. Establishment of access charges. Where would scheduling and dispatching be done?</p>



How to Decide

□ Commercialization (Govt/Enterprise separation):

- Better pricing
- PSO payments

□ Integral, Predominant and Separation Models

- Production vs market “efficiency”
- Disruption vs competition
- Licenses vs open access
- Regulation vs competition
- Public vs private



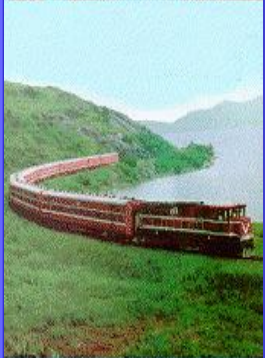
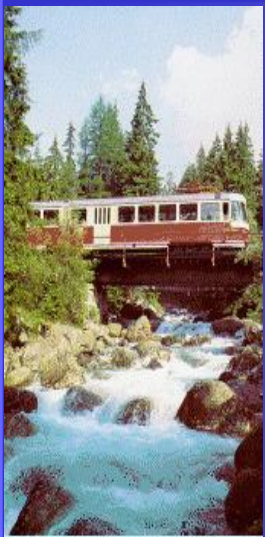
Tools for System Structure Decisions

- TMIS traffic flow data -- input to everything
- Network model, including system flows
- Point-to-point costing models
- All exist **NOW** in China but are not integrated: will need integration and refinement
- Work can be financed **NOW** in the policy component of National Railways Loan (and/or from Railways VI)



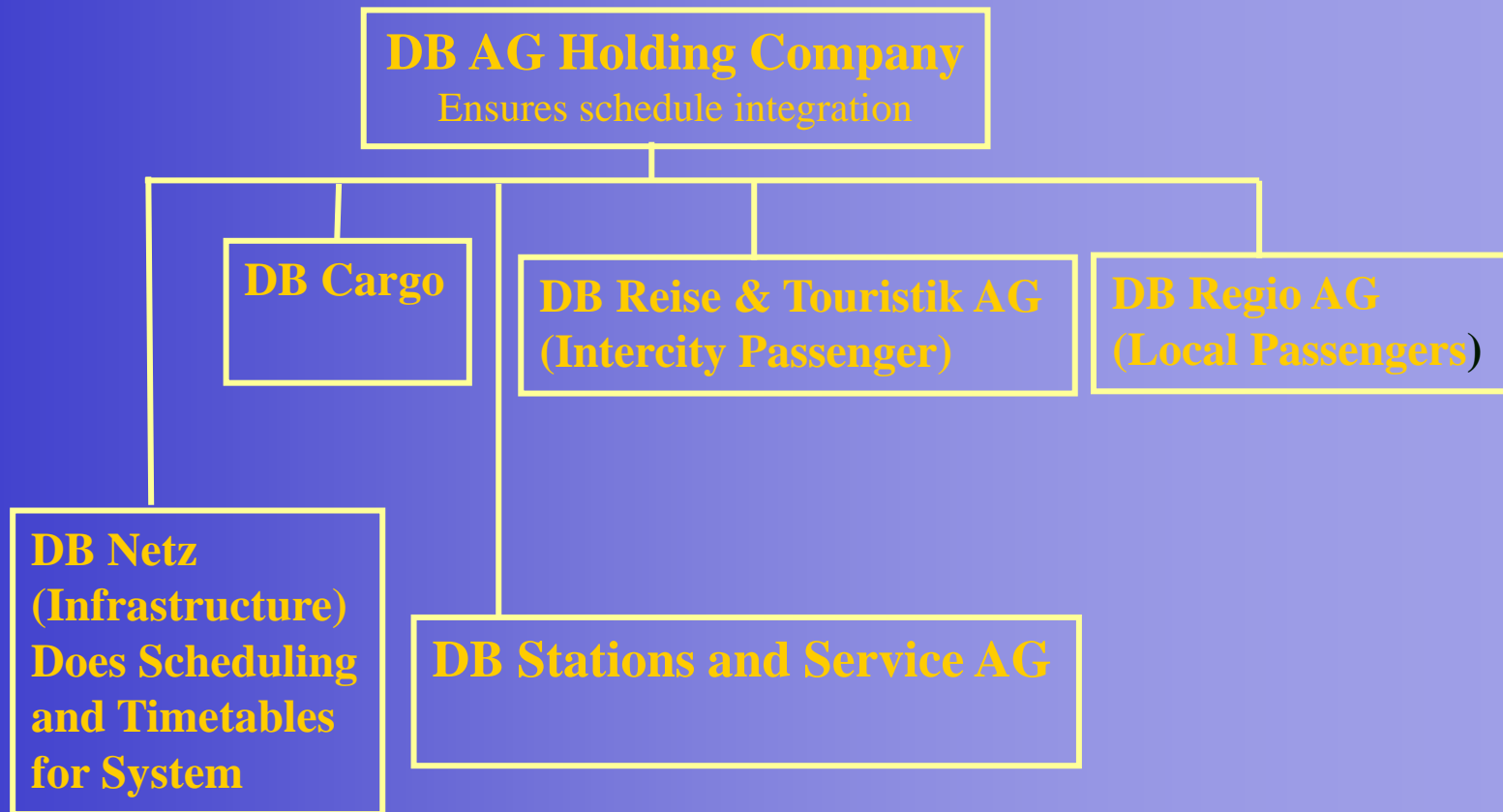
Transitional Issues

- Managing disruption -- centralized dispatching and scheduling
- German and Romanian models

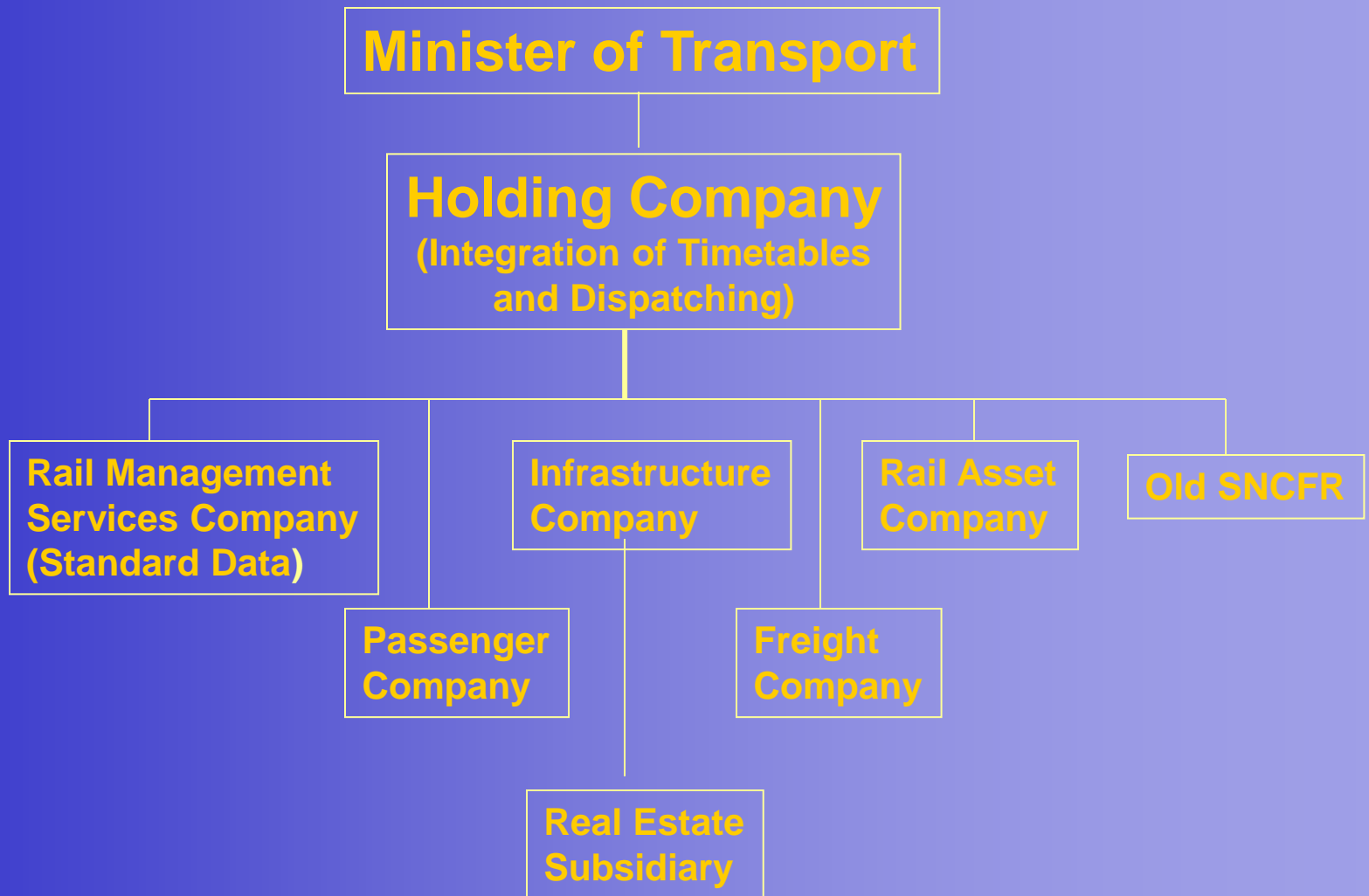


The Deutsche Bahn Structure

Germany: DB Prepares for Change



Romania: The New Railway System



Using the Reform Components

- Make sure Nanchang does accounting separation for freight costs as well as PTC

- Use Railways VI, VII and NRL moneys:
 - Support system studies

 - Advisory group(?)



A Good Way to Proceed

- Start with U.S. Model -- retain Up/Down as second stage
- Start with separated national and regional passenger companies -- adjust over time
- Start with Administration-based, integral freight companies, but with selected trackage rights competition between major markets
- Broaden trackage rights over time with experience and information
- Leave private operations for later stage, but consider wagons
- Use policy components of National Railways (Nanchang pilot and TMIS traffic information, system flow models and traffic costing models) to guide the implementation.

