

1st Florence Workshop on Rail Transport Regulation
November 15th, 2010

Organization and Regulation of the Rail Industry in Japan

European University Institute, Theatre Room

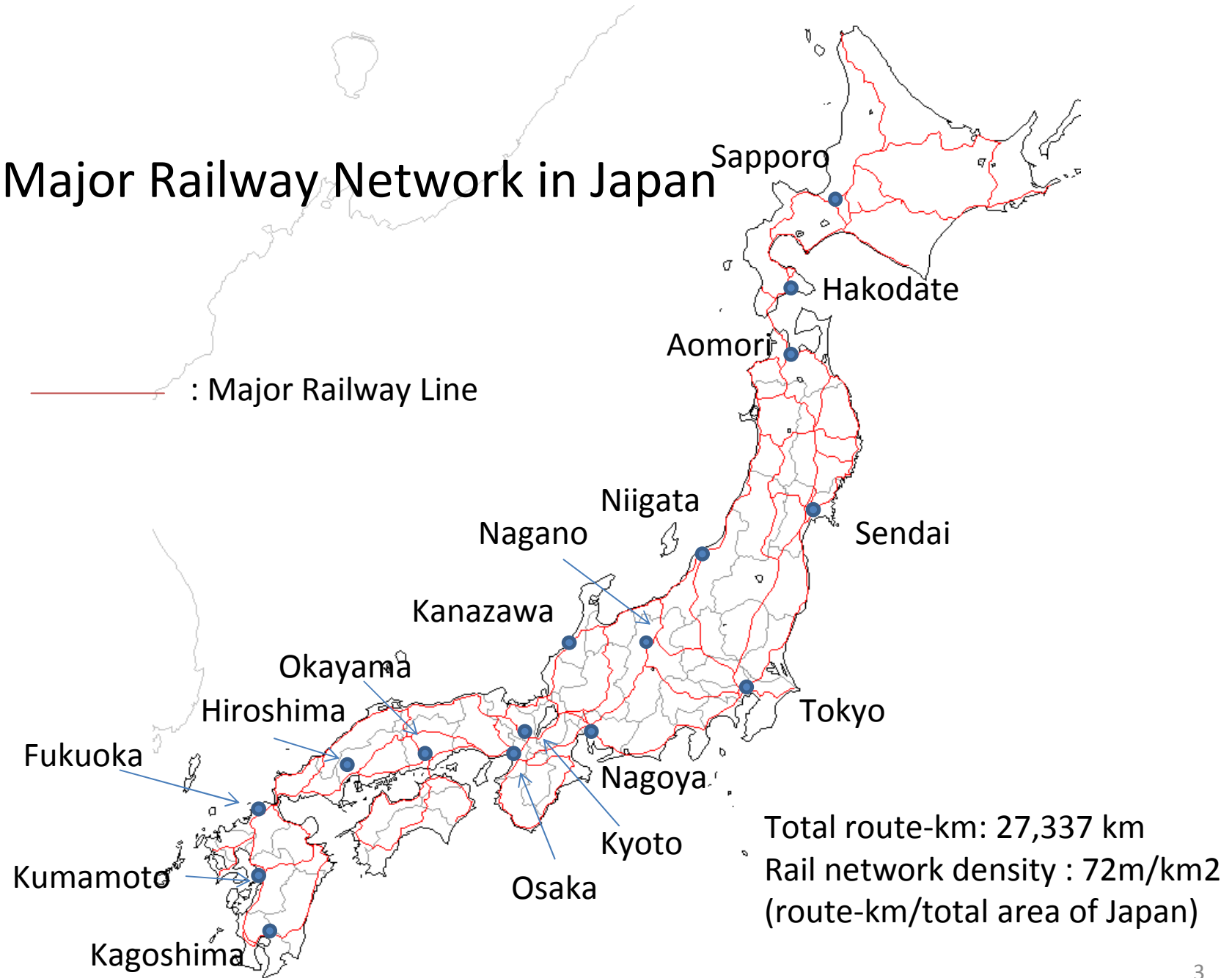
Fumitoshi Mizutani

Kobe University, Graduate School of
Business Administration

Current Transport Situation in 2007

	Rail	Auto	Ship	Air
Number of passenger-km (million)	405,612	936,049	3,834	84,327
Market share in terms of passenger-km(%)	28.4	65.5	0.3	5.9
Number of ton-km (million)	23,308	354,800	202,962	1,145
Market share in terms of ton-km (%)	4.0	60.9	34.9	0.2

Major Railway Network in Japan



Major Rail Operators in 2009

Kinds of rail operators	Description	Remarks
JR	6 passenger JRs and 1 freight JR	JRs are the former JNR, which was privatized in 1987.
Subways	9 municipal subways and 1 Tokyo metro	Tokyo metro was privatized in 2004.
Large private railways	15 privately owned rail companies.	Considered as efficient railways
Other private railways	143 rail companies	
Total	175 rail organizations	163 passenger rails 12 freight rails

Urban Transportation in Three Large Metropolitan Areas in 2006

Metropolitan Area	Rail (Total)	Rail (JRs)	Rail (others)	Auto
Tokyo Metropolitan Area	13,799 (56.9%)	5,469 (22.6%)	8,330 (34.3%)	10,432 (43.1%)
Osaka Metropolitan Area	4,596 (47.9%)	1,365 (14.2%)	3,231 (33.7%)	5,005 (52.1%)
Nagoya Metropolitan Area	1,111 (21.6%)	229 (4.5%)	882 (17.1%)	4,026 (78.4%)

(Note): (1) Unit: million passengers

(2) Other rails are mainly private railway companies and subways.

Regulator and Major Law

- Main regulator: Ministry of Land, Infrastructure and Transport (MLIT), Railway Bureau
- Regulatory body is **not separated** from policy making.
- Main role of MLIT:
(1) Policy making, (2) Regulating, (3) Giving subsidies, etc.
- Major Law: Rail Business Law, enacted in 1987

Mizutani, F. (2005) "Regulation and Deregulation in the Japanese Rail Industry,"
CESifo DICE Report: Journal for Institutional Comparisons, Vol.3, No.4, pp.10-15.

Major Regulatory Reforms

- 1987: The Rail Business Law (RBL) was established.
 - JNR was privatized.
 - All kinds of rail organizations are subject to this law.
- 1997: Reform of the RBL
 - Fare deregulation: Previously, price level had to be approved.
 - Ceiling price: approval by regulator
 - Below ceiling price: report to regulator
 - Yardstick regulation scheme was introduced.
- 2000: Reform of the RBL
 - Entry deregulation:
 - From a license system to a permission system
 - As a permission criterion, the matching of demand and supply was abolished.
 - Exit deregulation:
 - From a permission system to a notification system one year prior to exit

Privatization of JNR

- Japan National Railways were privatized in 1987. There are 7 characteristics of the privatization of the JNR.
 1. Horizontal separation (or regional subdivision)
 2. Functional distinction (or passenger-freight distinction)
 3. Vertical integration (or operation and infrastructure integration)
 4. Lump-sum subsidies for small JRs
 5. Establishment of an intermediary institution
 6. Allowance of non-rail service
 7. Yardstick competition scheme (Yardstick Regulation)

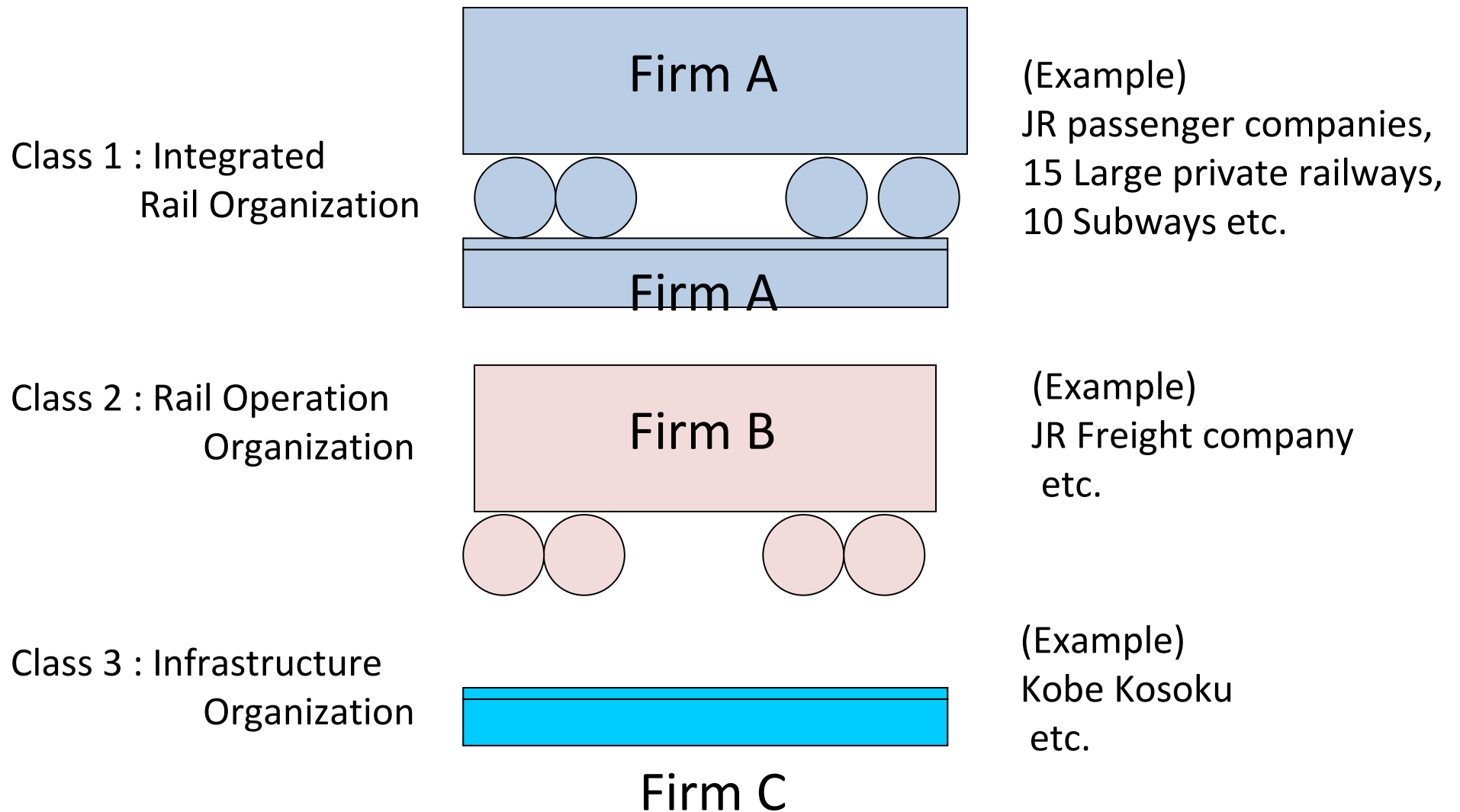
Mizutani, F. and K. Nakamura (2004) "The Japanese Experience with Railway Restructuring," in T. Ito and A. O. Krueger (eds.), ***Governance, Regulation, and Privatization in the Asia-Pacific Region***, The University of Chicago Press, pp.305-336.

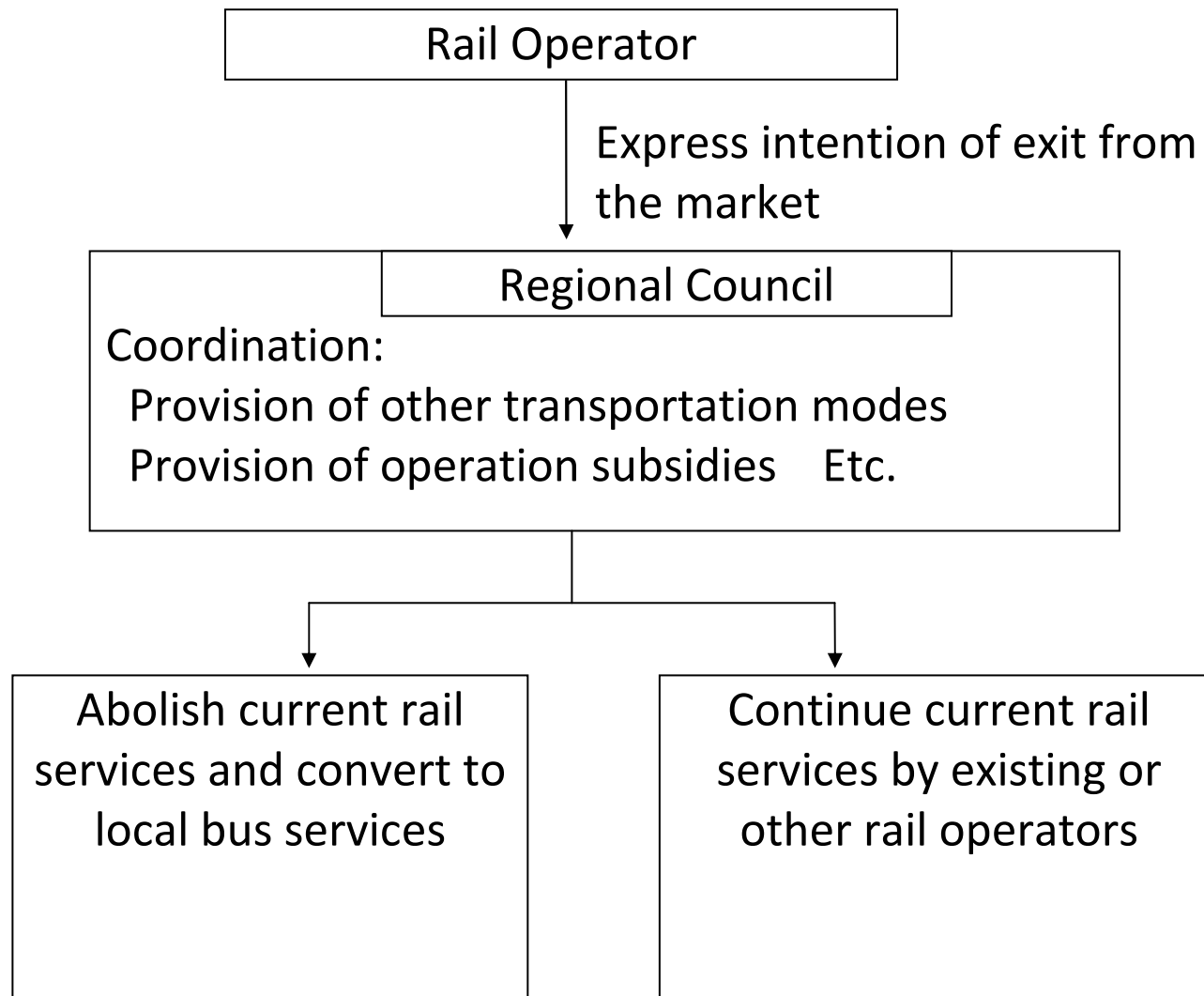
Mizutani, F. and K. Nakamura (1997) "Privatization of the Japan National Railway: Overview of Performance Change," ***International Journal of Transport Economics***, Vol.24, No.1, pp.75-99.

Entry and Exit Regulation

Kinds of regulation	Major points
Entry regulation	Permission system (individual operator basis) There are 3 classes. Class 1: Integrated rail organization Class 2: Rail operation organization Class 3: Infrastructure organization
Exit regulation	Report in advance (1 year prior to exit)

Three Kinds of Rail Organization





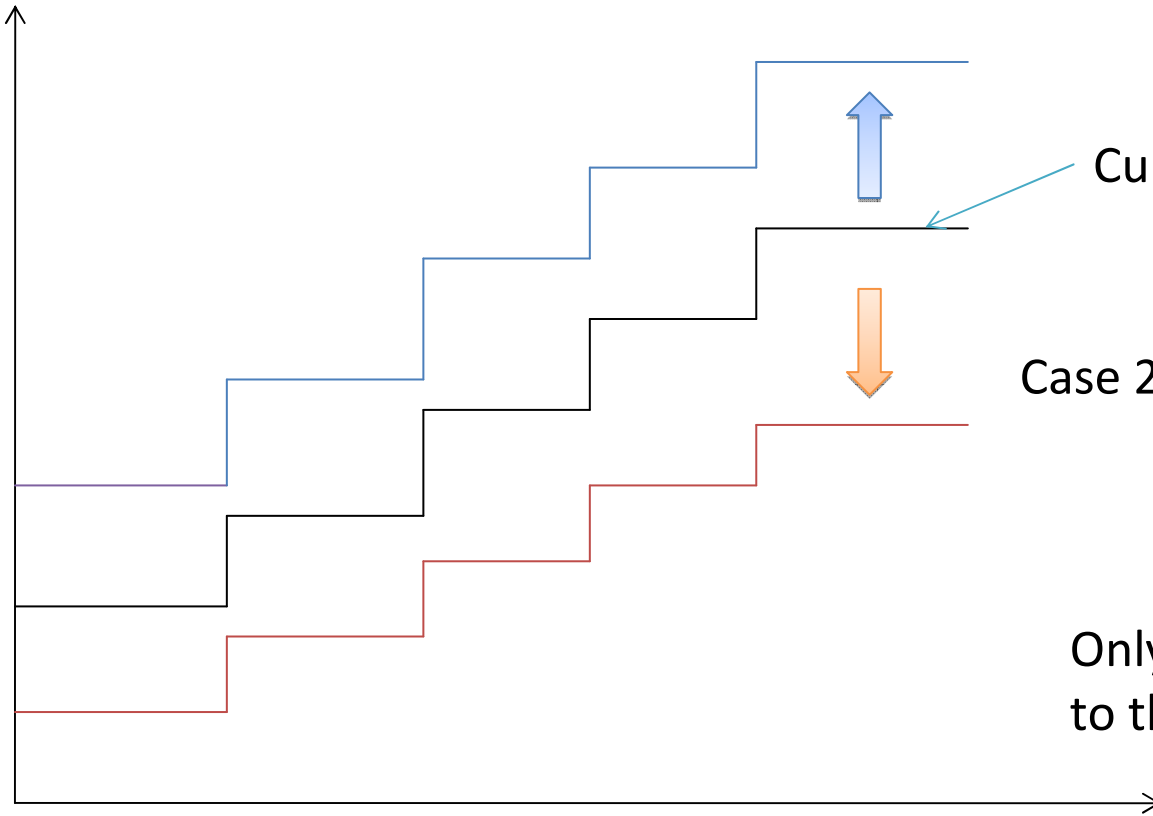
Exit Procedure System in the Regional Council

Fare Regulation

Kinds of regulation	Major points
Ceiling price	Approval by a regulator
Price under ceiling price	Report to a regulator
Incentive system	Yardstick regulation
Fare level	Full cost principle
Other fares	Report to a regulator There is a variety of rail fares (express, off-peak, discount tickets, etc.)

An Example in Price Changes

Price (Yen)



Travel Length (km)

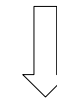
The price level must be approved by the regulator.



Case 1: Increase price over the ceiling price

Current Ceiling Price Level

Case 2: Decrease price under the ceiling price



Only report the price level to the regulator

Competition in the Rail Industry

- Competition for tracks

As rail companies provide rail services while in general holding their own tracks, there is no competition for tracks.

- Competition in the rail industry

The yardstick competition scheme is applied to some rail operators.

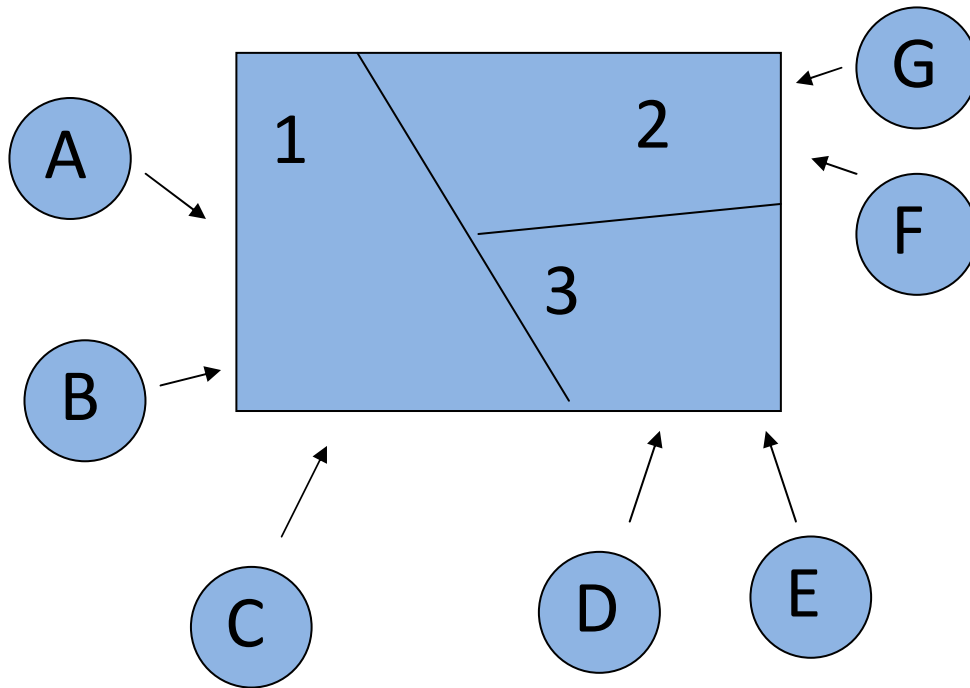
(ex.) (1) 15 large private rails, (2) 6 passenger JRs,
(3) 10 subways

Yardstick Competition

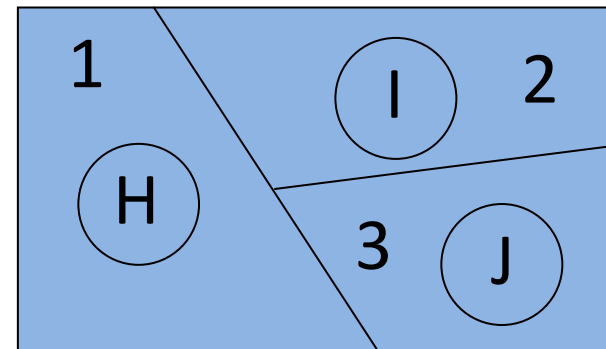
UK: Franchise bidding
to decide train operators

Japan: Yardstick regulation
for existing rail operators

Competition in the Market

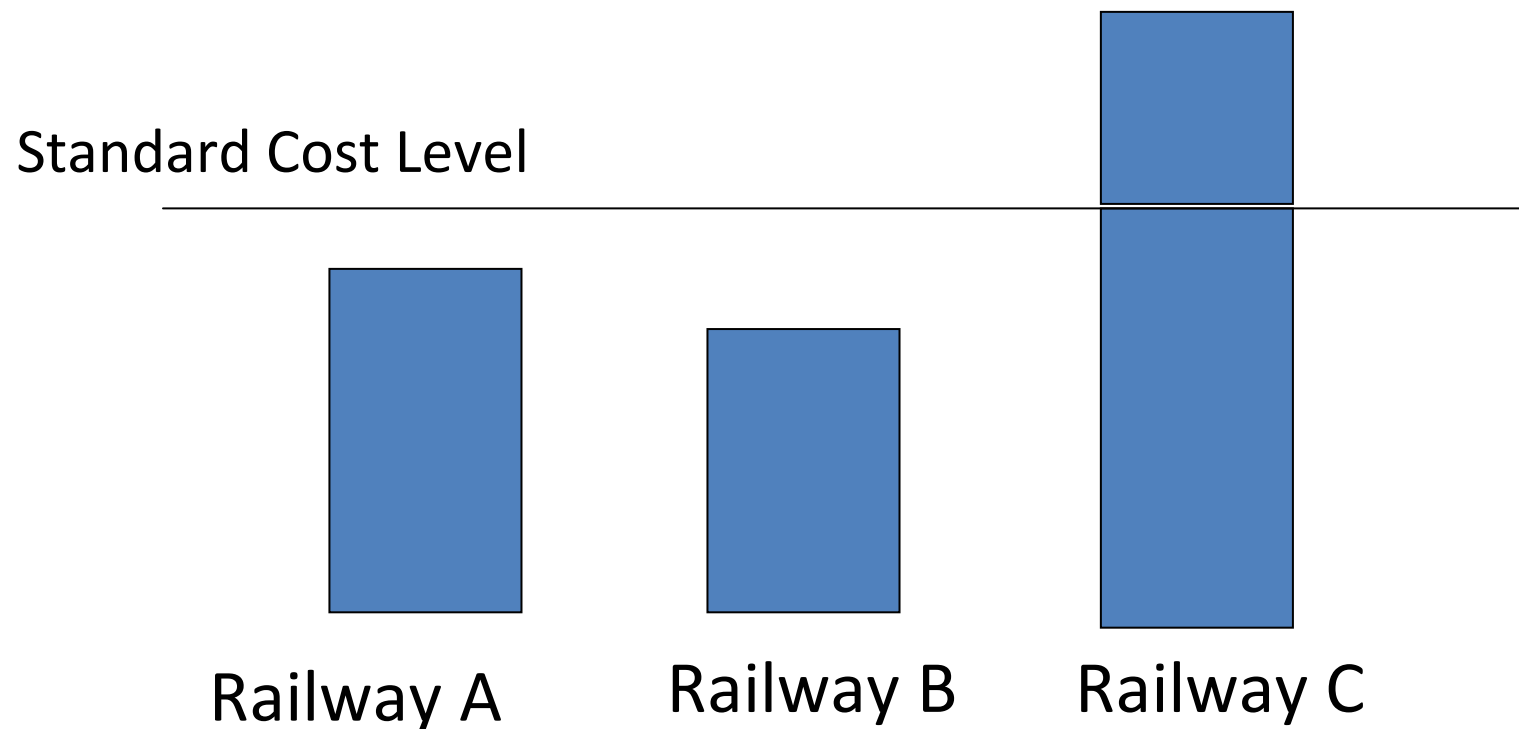


Yardstick Competition



Yardstick Competition Scheme (Yardstick Regulation)

- Railway C is required to lower its costs.



Effectiveness of Yardstick Regulation

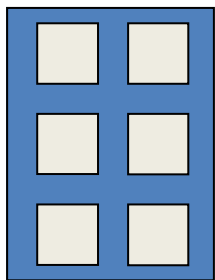
- According to Mizutani et al. (2009), the introduction of yardstick regulation and competition tends to decrease a rail company's variable cost.
- Between 1995 and 2000, railways to which yardstick regulation was applied improved cost efficiency by about 11.5%.

Mizutani, F., H. Kozumi and N. Matsushima (2009) "Does Yardstick Regulation Really Work? Empirical Evidence from Japan's Rail Industry," *Journal of Regulatory Economics*, Vol.36, No.3, pp.308-323.

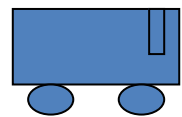
Non-Rail Business by Private

Railways

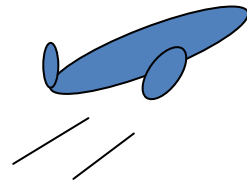
- Private railways engage in non-rail business.
- These activities contribute to increasing rail ridership.
- Accounting rules strictly distinguish rail costs from non-rail business costs.



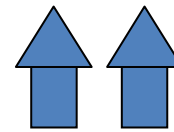
**Department
Store**



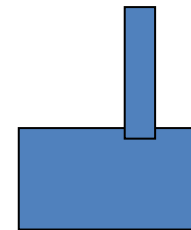
**Bus
Services**



Tourism



**Real Estate
Development**



Machinery

Vertical Separation or Integration?

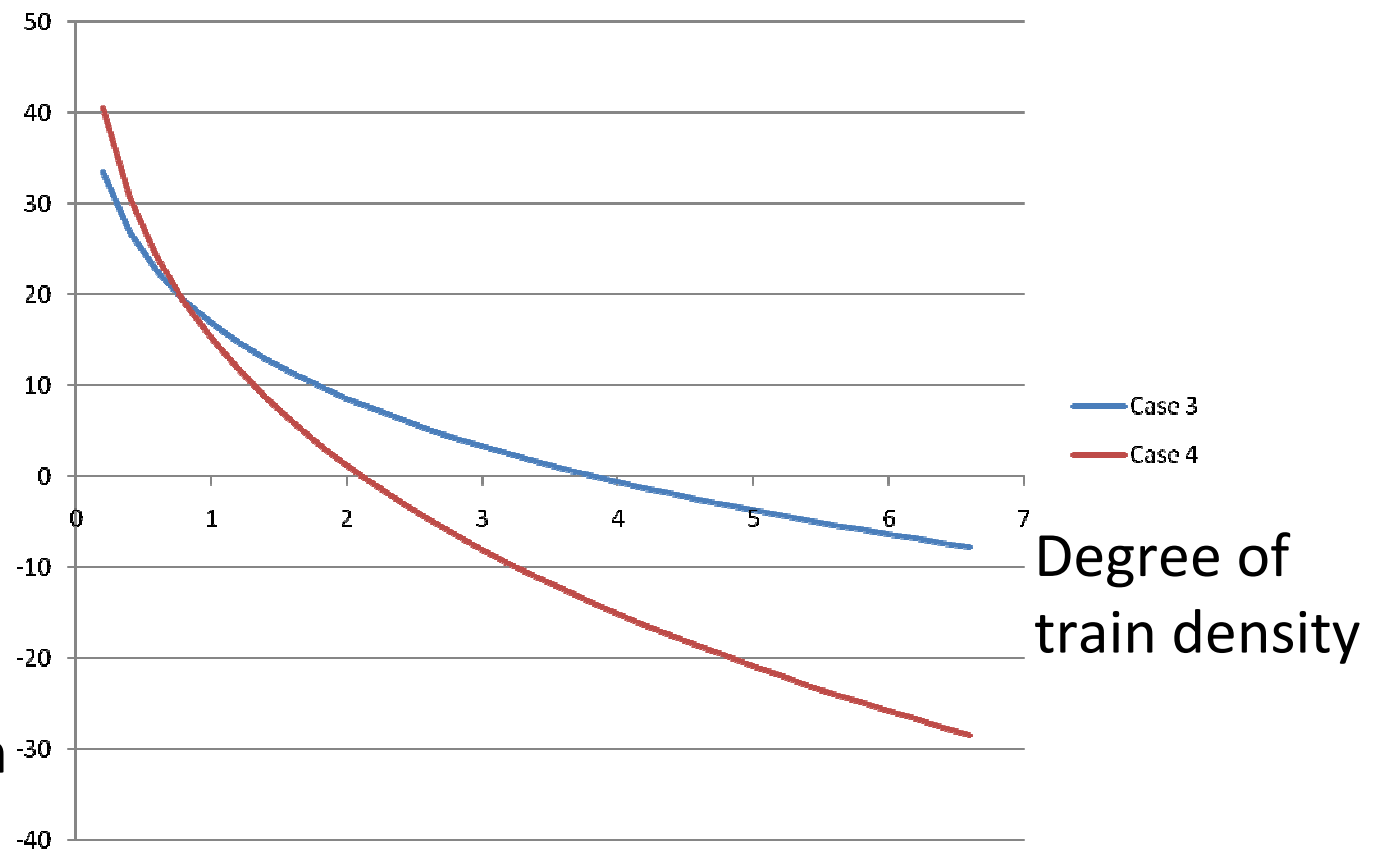
Empirical Analysis of OECD Countries' Rail Data

% of cost reduction
by vertical separation

Vertical separation
is cost effective.



Vertical integration
is cost effective.



Empirical Findings on Vertical Separation

- In our calculation, if train density reaches about 2.11 to 3.83 times the sample mean, vertical separation starts to increase the costs.
- Among our observations in 2007, railway organizations with the higher train density are BLS (Switzerland), SBB CFF FFS (Switzerland), JR (Japan), KOREAIL (South Korea), and NS (Netherlands).
- Except for NS, a vertical separation policy has not been taken in these rail organizations.

Summary of Major Characteristics of the Rail Industry in Japan (1)

- Most railways are **privately owned**.
- Passenger rail transportation is still **vital**, especially in large metropolitan areas.
- Most railways are **vertically integrated** systems.
- Many private railways run **non-rail businesses** (e.g. real estate development, department stores, bus operations, and so on)
- There is **no competition for tracks**. But the **yardstick competition** scheme is applied for three rail groups: (1) 15 large private railways, (2) 6 passenger JRs, (3) 10 subways.

Summary of Major Characteristics of the Rail Industry in Japan (2)

- The regulator is **not** independent from the ministry.
- Fare Regulation:
 - Ceiling price: **approval** by regulator
 - Below ceiling price: **report** to regulator
- Entry Regulation
 - Permission system
- Exit Regulation
 - Notification system in advance (1 year prior to exit)

Thank you