

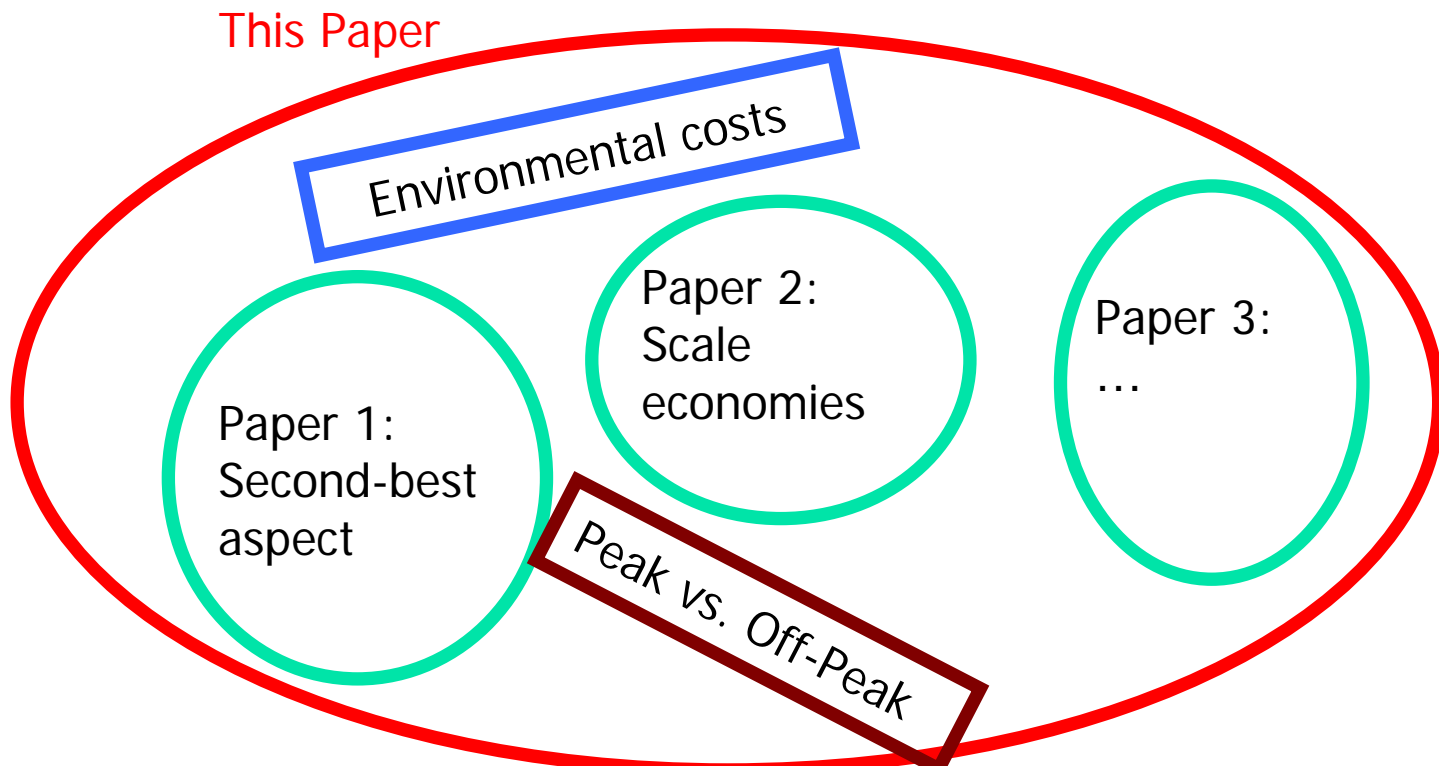


Comments on “On the Optimal Fares for Public Transport”

National Graduate Institute for
Policy Studies
Yukihiro Kidokoro

Purpose of the Paper

- derive rationales about transit subsidies by considering many aspects at a time





What are keys?

- Almost all the elements are included



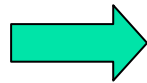
- Analysis becomes complex, but

Key driving forces exist

Key 1: Second-best pricing

- Given road congestion with fixed fuel tax

Higher
transit subsidy



Lower
transit fare

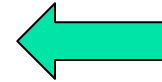


Shift to
public transit



Reduced
road congestion

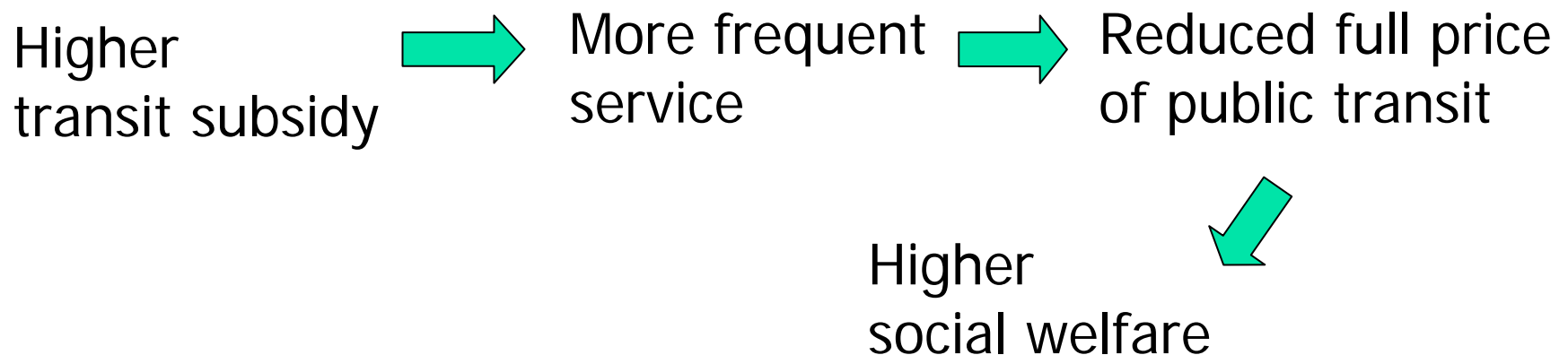
Higher
social welfare



This effect is stronger if road congestion is heavier, that is, in peak-time



Key 2: "Scale" Economy



This effect is stronger if service is less frequent, that is, in off-peak-time



Is there another key?

- Population and Population Density

	Population (million)	Area (km ²)	Population Density (per km ²)
Washington	0.57	159	3585
Los Angeles	3.69	1836	2013
London	7.39	1572	4701
Tokyo	8.13	618	13155
Sendai	0.99	784	1265

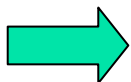
Is the difference in population density critical?



Tokyo

- 8 private railway firms and 1 private subway
 - Profitable including capital costs
- In addition, Tokyo metropolitan government operates subway (Toei) and bus
 - Unprofitable including capital costs, but profitable excluding capital costs

Given an inefficient operation by non-private sector, subway and bus can recover the non-capital operating costs.



Question: How is the capital costs recovered?



Tokyo Toei Subway and bus

- Tokyo Toei Subway (170 yen for 0-4km)
 - Revenue: 181.6 billion yen
 - Total cost (including depreciation and interest payment): 195.5 billion yen
 - Operating cost (excluding them): 106.9 billion yen
 - Cost-recovery ratio: 170%
- Tokyo Toei bus (200 yen/ride)
 - Revenue: 42.1 billion yen
 - Total cost (including depreciation and interest payment): 42.8 billion yen
 - Operating cost (excluding them): 37.7 billion yen
 - Cost-recovery ratio: 112%



Sendai

- Sendai city government operates subway and bus
- Sendai is the smallest in Japan among the cities where subway operates
 - Subway: Profitable excluding capital costs
 - Bus: Unprofitable. Transfer is significant.

Sendai bus cannot recover the non-capital operating costs.

➡ Question: To what extent, should bus be subsidized?



Sendai city subway and bus

- Sendai City Subway (200 yen for 0-3km)
 - Revenue: 12.3 billion yen
 - Total cost (including depreciation and interest payment): 17.8 billion yen
 - Operating cost (excluding them): 5.99 billion yen
 - Cost-recovery ratio: 205%
- Sendai City Bus (route-dependent fare)
 - Revenue: 9.3 billion yen
 - Total cost (including depreciation and interest payment): 12.0 billion yen
 - Labor cost: 9.3 billion yen
 - Transfer from tax: 3.1 billion yen
 - (Estimated) cost-recovery ratio: 78-100%