



PARIS SUBURBAN RAIL SUMMARY (COMMUTER RAIL, REGIONAL RAIL)

October 2003

Europe's largest public transport system is in Paris, which has 9.7 million people and a population density of 9,100 per square mile. Approximately 24 percent of travel in the Paris area is on public transport, and more than one-quarter of that is on commuter rail (Figure 7). The core of the system is the RER (regional express) system, which provides services from the suburbs through the city in tunnels that have been largely constructed in the last thirty years. In addition, many lines converge on intercity railroad stations (such as Gare du Nord or Gare Montparnasse) located at the periphery of the Paris central business district. The commuter rail system extends to over 1,000 route miles on more than 40 routes, with more than 500 stations. There are 0.51 commuter rail stations per square mile (one for each 2.0 square miles) of developed land. In the central business district, people walk to their destinations or catch metro, bus or regional express services to complete their journeys. Annual commuter rail ridership is more than 900 million rides, equal to all of the public transport ridership in Washington-Baltimore and Boston combined.

Average public transport system operating speeds are 23.6 miles per hour, nearly 50 percent faster than the 16 mile per hour automobile rate. Service frequencies, however, are significantly lower than in Tokyo, with from zero to 12 percent of service operating on five minute frequencies or greater during off-peak hours. The commuter rail system is operated by public authorities and receives operating subsidies. Virtually all capital costs are subsidized.

The central business district has nearly 900,000 jobs. This represents 17 percent of metropolitan area employment. The central business district is, however, losing market share quickly. From 1990 to 1999, CBD employment declined nearly 200,000 jobs, while job growth in the outer suburbs was nearly 140,000.¹

¹ Calculated from INSEE data.

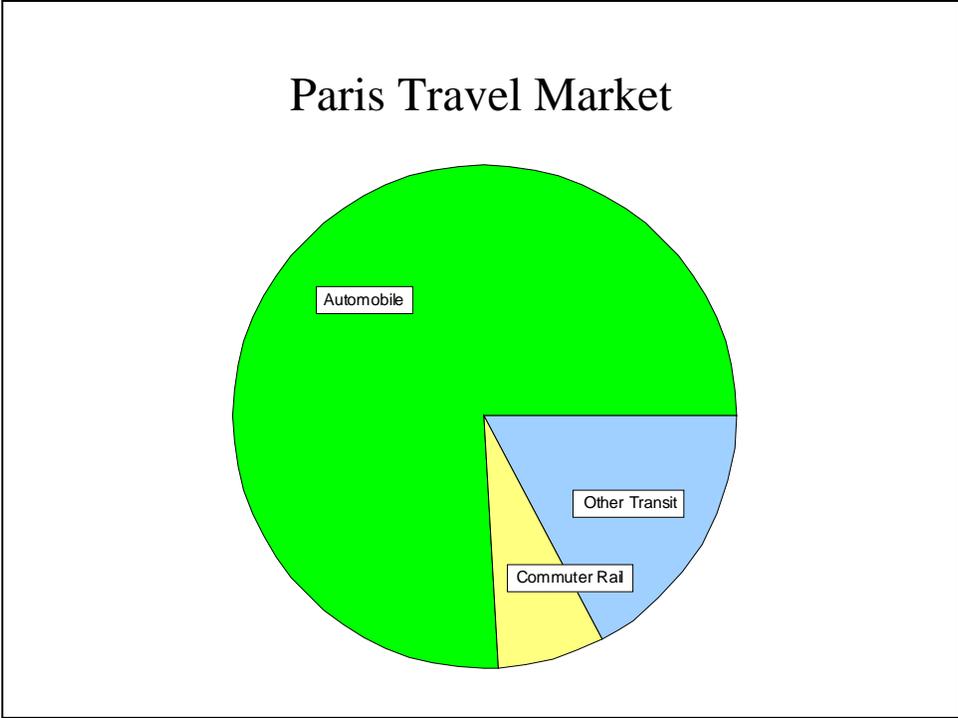


Figure 1

But, the Paris commuter rail system operates considerably lower service frequencies and does not provide the extent of regional connectivity as the Japanese systems. As a result, a somewhat lower level of automobile competitive service is provided from the suburbs to the core, while little service is provided between suburban origins and destinations. Public transport’s share of trips within the city of Paris is 67 percent, while the share between suburban locations and Paris is 59 percent, while public transport travel within the suburbs is much lower, at 15 percent. Nonetheless, by US standards, this suburban public transport market share is very high. In Paris, like other European urban areas, lower income households are more concentrated in suburban locations. No automobile households number 23 percent in suburban Paris, well above US suburban levels. Travel demand within the suburbs is more than double the travel in and to the core (Table 3).²

Table 3 Travel in the Paris Metropolitan Area		
Sector	Overall Share of Trips	Public transport Share of Trips
Within Paris	13.2%	66.8%
Suburbs-Paris	16.4%	58.9%
Within Suburbs	70.4%	15.4%
Source: IAURIF, Paris		

² Data from INSEE, 1999.

APPENDIX TABLES

	Appendix Table A International Pre-Automobile Commuter Rail Systems					
	Tokyo	Osaka	Nagoya	Paris	London	Sydney
DEMOGRAPHICS						
Population (000)	31,200	15,250	8,050	9,650	12,230	3,539
Urban Area (Square Miles)	2,030	1,050	1,090	1,060	1,600	811
Population Density	15,369	14,524	7,385	9,104	7,644	4,365
Gross Product/Capita 1999	\$28,327	\$25,376	\$28,535	\$32,343	\$27,365	\$25,643
Compared to Tokyo	0.0%	-10.4%	0.7%	14.2%	-3.4%	-9.5%
CENTRALIZATION						
% Population>15,000 Density	71%	70%	24%	56%	23%	1%
% Land>15,000 Density	46%	43%	9%	18%	8%	0%
Core Population Share	26%	17%	27%	22%	59%	15%
Suburban Population Share	74%	83%	73%	78%	41%	85%
CBD (Downtown) Employment Share	16%	18%	13%	17%	16%	11%
Outside CBD Employment Share	84%	82%	88%	83%	84%	89%
Employment in CBD (000)	2,434	1,380	500	891	1,099	175
PUBLIC TRANSPORT SYSTEM						
Public transport Market Share	56.7%	59.5%	24.6%	24.1%	17.1%	13.6%
Public transport/Auto Speed	1.6			1.5		
COMMUTER RAIL						
Commuter Rail Market Share	39.5%	36.4%	12.0%	7.2%	3.7%	5.6%
Compared to New York	59.9	53.3	18.2	11.0	5.6	8.5
Miles of Route	1,779	1,095	528	1,012	2,260	1,273
Stations	1,243	1,065	843	540	940	306
Station Density	0.61	1.01	0.77	0.51	0.59	0.38
Operating Subsidy?	No	No	No	Yes	Yes	Yes
Capital Subsidy	No	No	No	100%	100%	100%
Share with Freight?	No	No	No	Little	Little	Little
HIGHWAYS						
Traffic Density (Vehicle Miles/Sq.Mi.)	118,854			83,462		
Compared to Tokyo	0.0%			-29.8%		

EXTENT OF AUTO COMPETITIVE PUBLIC TRANSPORT SERVICE

Within Core	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
Suburbs to Core	HIGH	HIGH	HIGH	MIDDLE	MIDDLE	MIDDLE
Within Suburbs	HIGH	HIGH	HIGH	LOW	NIL	NIL

Appendix Table B
United States Pre-Automobile Commuter Rail Systems

	New York	Chicago	Boston	Philadelphia
DEMOGRAPHICS				
Population (000)	20,253	8,307	4,032	5,149
Urban Area (Square Miles)	4,711	2,123	1,736	1,799
Population Density	4,299	3,913	2,323	2,862
Gross Product/Capita 1999	\$43,805	\$39,384	\$40,301	\$36,025
Compared to Tokyo	54.6%	39.0%	42.3%	27.2%
CENTRALIZATION				
% Population>15,000 Density	44%	24%	20%	22%
% Land>15,000 Density	5%	4%	2%	3%
Core Population Share	40%	35%	15%	29%
Suburban Population Share	60%	65%	85%	71%
CBD (Downtown) Employment Share	19%	13%	13%	14%
Outside CBD Employment Share	81%	87%	87%	86%
Employment in CBD (000)	1,733	485	280	351
PUBLIC TRANSPORT SYSTEM				
Public transport Market Share	9.0%	3.6%	3.8%	2.9%
Public transport/Auto Speed	0.9	0.8	0.6	
COMMUTER RAIL				
Commuter Rail Market Share	0.7%	0.5%	0.4%	0.3%
Compared to New York	1.0	0.7	0.6	0.4
Miles of Route	979	333	328	304
Stations	404	250	116	176
Station Density	0.09	0.12	0.07	0.10
Operating Subsidy?	Yes	Yes	Yes	Yes
Capital Subsidy	100%	100%	100%	100%
Share with Freight?	Little	Little	Little	Little

HIGHWAYS

Traffic Density (Vehicle Miles/Sq.Mi.)	63,312	57,968	43,350	57,168
Compared to Tokyo	-46.7%	-51.2%	-63.5%	-51.9%

EXTENT OF AUTO COMPETITIVE PUBLIC TRANSPORT SERVICE

Within Core	HIGH	HIGH	HIGH	HIGH
Suburbs to Core	MIDDLE	MIDDLE	MIDDLE	MIDDLE
Within Suburbs	NIL	NIL	NIL	NIL

Appendix Table C
United States Automobile Era Commuter Rail Systems and Lines

	Washington- Baltimore	Los Angeles	San Diego	Miami	Dallas-Fort Worth	Seattle
DEMOGRAPHICS						
Population (000)	6,010	14,000	2,674	4,919	4,146	2,712
Urban Area (Square Miles)	1,840	2,299	782	1,116	1,407	954
Population Density	3,266	6,090	3,419	4,408	2,947	2,843
Gross Product/Capita 1999	\$41,316	\$33,486	\$34,495	\$31,261	\$40,306	\$38,928
Compared to Tokyo	45.9%	18.2%	21.8%	10.4%	42.3%	37.4%
CENTRALIZATION						
% Population>15,000 Density	10%	23%	3%	7%	2%	2%
% Land>15,000 Density	1%	6%	2%	2%	0%	0%
Core Population Share	20%	26%	46%	7%	29%	21%
Suburban Population Share	80%	74%	54%	93%	71%	79%
CBD (Downtown) Employment Share	19%	2%	6%	2%	6%	12%
Outside CBD Employment Share	81%	98%	94%	98%	94%	88%
Employment in CBD (000)	444	167	73	41	112	171
PUBLIC TRANSPORT SYSTEM						
Public transport Market Share	3.3%	1.4%	1.5%	1.3%	0.5%	1.8%
Public transport/Auto Speed	0.8	0.4	0.5			
COMMUTER RAIL						
Commuter Rail Market Share	0.05%	0.02%	0.02%	0.03%	0.01%	0.01%
Compared to New York	0.08	0.03	0.03	0.04	0.02	0.01

Miles of Route	191	415	43	71	35	34
Stations	56	48	9	19	9	7
Station Density	0.03	0.02	0.01	0.02	0.01	0.01
Operating Subsidy?	Yes	Yes	Yes	Yes	Yes	Yes
Capital Subsidy	100%	100%	100%	100%	100%	0%
Share with Freight?	Yes	Yes	Yes	Yes	Yes	Yes

HIGHWAYS

Traffic Density (Vehicle Miles/Sq.Mi.)	74,798	104,970	85,687	109,613	68,077	60,936
Compared to Tokyo	-37.1%	-11.7%	-27.9%	-7.8%	-42.7%	-48.7%

EXTENT OF AUTO COMPETITIVE PUBLIC TRANSPORT SERVICE

Within Core	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
Suburbs to Core	MIDDLE	MIDDLE	MIDDLE	MIDDLE	MIDDLE	MIDDLE
Within Suburbs	NIL	NIL	NIL	NIL	NIL	NIL

Note: Washington-Baltimore CBD data is for Washington and Baltimore.

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