

THE FREE PUBLIC TRANSPORT IN FRANCE

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ABSTRACT

This paper presents an initial overview of a very different way to price the public transport, providing it gratis, as a public good, with real experiences in a developed country, France. The free public transport may be considered as one emerging urban transport policy issue, with already long term experiences in various countries like USA (Chappel-Hill, since 2002), Belgium (Hasselt, since 1997) and France (twenty five cities as the end of 2011, the first since 1971), and since January 2013, also in Talinn, Estonia capital with 400 thousand inhabitants. Actually, this paper suggests that free public transport may be a major innovation in the economic institutional arrangement of urban transport. The French cases presented here are longer and broader, with a city providing it for about 40 years (Colomiers), and before 2013, with the bigger urban agglomeration in the world providing free public transport, Aubagne-Étoile (since 2009) with more than 100 000 inhabitants. By the end of 2011, more than 770 thousands Frenchs had free public transport available in twenty urban areas. This paper provides an overview and insights on the free public transport real practice in France.

Keywords: Public Transport, Free Public Transport, Transport Economics

INTRODUCTION

The idea of free public transport means free public transport for all users in the urban area, not a selective gratuity for students or elderly. This idea has been around for a lot of years since the early 1970's. In France, Colomiers and Compiègne adopt it since the first half of 1970's. In Italy, Bologna had adopted the free public transport in 1973 but abandoned it in 1977.

By January 2013, the free public transport is in place worldwide in Belgium, France, United States and now Estonia. France have the most important experience until now because the lasting and national spread.

In this paper, I try to present the free public transport experience in France. The French revolution has changed the economy in the sense of the institutionalization of public services and tax system in a democratic way, I think that the French experience may change the way cities in the world will plan and organize public transport in a large part of the XXI century.

THE MAIN FACTS

The cities and timeline of free public transport in France

Figure 1 presents the timeline of the adoption of free public transport in France and the accumulated population served and also the marks of changes in the *Versement Transport*, the tax on payroll that is directed to funding public transport in France.

It should be note that the *Versement Transport* changes, allowing small cities to get the tax, appears to have had no influence in the evolution of free public transport until year 2000. In the 2000 decade, with the allowance for cities with population between 10 and 20 thousand inhabitants have tax revenue from the *Versement Transport*, nine cities in this range adopted the free public transport: in 2000 Senlis, in 2002 Mayenne, in 2003 Figeac, in 2006 Pont-Sainte-Maxence, in 2008 Bar le Duc, Cluses, Noyon and Saint-Brévin-les-Pins, and in 2009 Chateaudan. It was after passing the 100,000 limit that Aubagne adopted the free public transport because. However, Chantilly with a population less than 20,000 people adopted the free public transport before having access to this tax revenue.

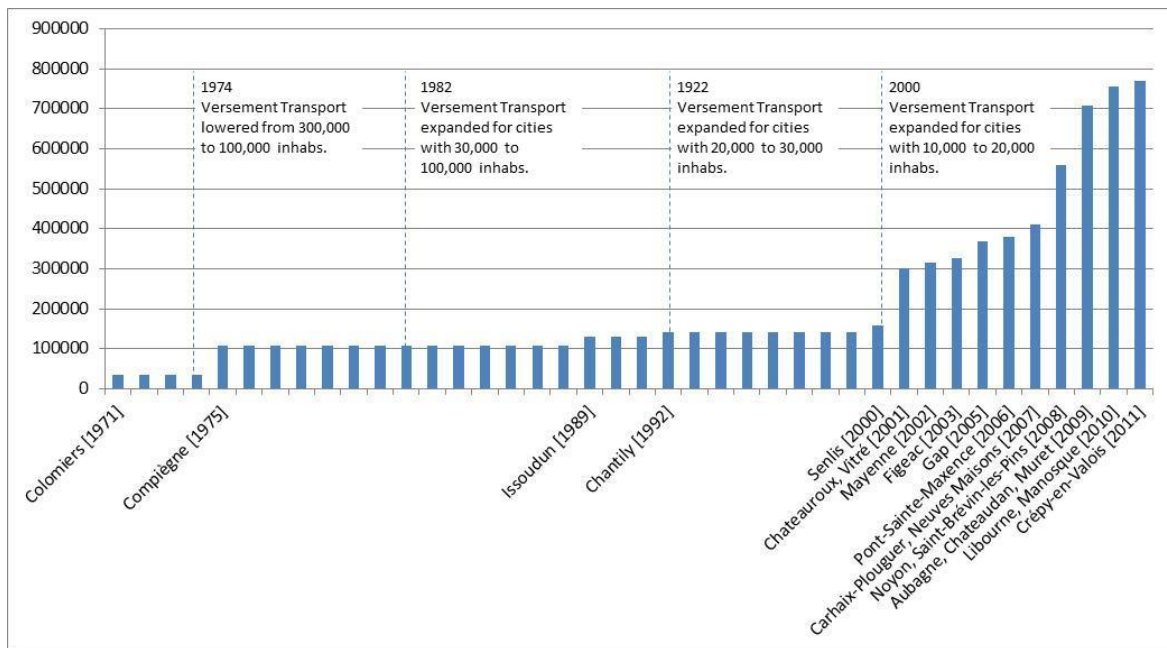


Figure 1 – Timeline of Free Public Transport in France and total population served, 1971-2011

In 2011 the experience last for 40 years already, but for a long time, from 1975 to 1989 only two cities have it, Colomiers and Compiègne, and for the next 10 years until 2000, only two more cities joined them. In this period, from 1971 to 1999, 29 years, the total population served was about only 100 thousands inhabitants in five urban agglomerations.

The 2000 decade register the rise of cities and population served by free public transport. In the end of 2000's the free public transport had moved up to larger cities, with the 100 thousand inhabitants of the community of Aubagne-L'Etoile in 2009. Since the year 2000, we have seeing a significant increase in the population served with free public transport, reaching about 770 thousand by 2011.

As an incidental note, it's is curious that the general shape of accumulated cities and population follow the general shape of innovation adoption. Also interesting enough, none of these early adopters has come back to a fare system giving-up the free public transport.

Figure 2 presents the distribution of the free public transport in France according the size of cities, and the distribution of all French cities with public transport in the same range, i.e. less than 1,000 to 110,000 inhabitants. We can see first that the distribution of free public transport follows roughly the distribution of French cities in the same range except for the 10 to 20 thousand class, with more than the general distribution, and for 50 to 60 thousand and 90 to 100 thousand classes that have no cities with free public transport at all.

The population range of the free public transport cities in France represents 76 percent of the total of cities with public transport but 32 percent of the population according the data of cities with public transport by Certu (2010). This suggests that the free public transport experience can spread even more in this range of population size, especially when we consider that in this range the revenue from users pays for 17% of the operating costs, and less than 10% for total expenses considering both operating and investments.



Figure 2 – Distribution of cities with free public transport by size of population, and all French cities in same range

Considering the size of the cities, the distribution presented in Figure 3 shows that the major part are small cities, with 65% below 100 km².

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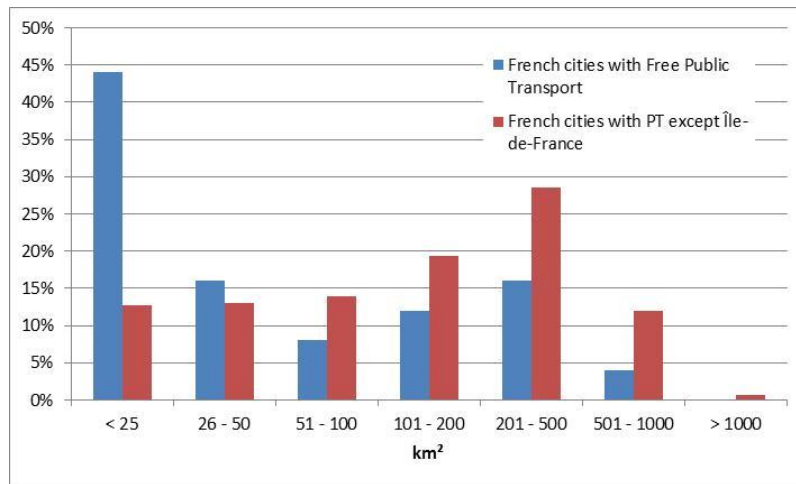


Figure 3 – Cities distribution by size in km²

From the population density of the cities presented in Figure 4 we may say that are cities with low to median population density. However, the distribution of free public transport cities according population density follows the same pattern of French cities with public transport. The figure also suggests that population density can play a role in the free public transport adoption.

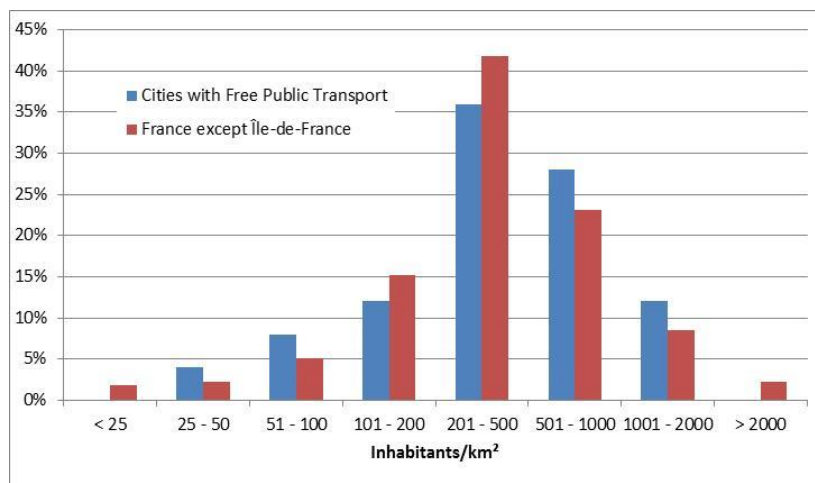


Figure 4 – Distribution of population density of cities with free public transport in France

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Table 1 presents the cities with free public transport in alphabetical order and their main data.

Table 1 – Cities of France with Free Public Transport, as in 2011

Ref	City/Community	Year of adoption	Transport Authority	Villes	Pop 2009	Area km ²	Ihab/km ²	
1	Aubagne	2009	Communauté D'Agglo du Pays D'Aubagne et de L'Etoile	12	105,119	244.69	430	
2	Avanchers/Valmorel	2008	Ville des Avanchers-Val Morel	1	773	21.93	35	
3	Bar le Duc	2008	Syndicat Intercommunal des Transports Urbains du Barrois	3	19,672	47.08	418	
4	Carhaix-Plouguer	2007	Ville de Carhaix	1	8,198	27.68	296	
5	Castres	2008	Communauté D'Agglomération de Castres-Mazamet	16	82,804	425.14	195	
6	Chantilly	1992	Ville de Chantilly	1	11,181	16.19	691	
7	Chateaudan	2009	Ville de Chateaudun	1	14,283	28.48	296	
8	Chateauroux	2001	Communauté D'Agglomération Castelroussine	12	76,778	459.89	167	
9	Cluses	2008	Ville de Cluses	1	17,953	10.46	1716	
10	Colommiers	1971	Syndicat Mixte des Transports en Commun de L'Agglomération Toulousaine	1	34,603	20.83	1661	
11	Compiègne	1975	Agglomération de la Région de Compiègne	15	73,668	199.19	370	
12	Crépy-en-Valois	2011	Ville de Crepy-en-Valois	1	14,133	16.28	868	
13	Figeac	2003	Commune de Figeac	1	10,627	35.16	302	
14	Gap	2005	Ville de Gap	1	41,170	110.43	373	
15	Issoudun	1989	Communauté de Communes du Pays D'Issoudun	12	22,634	323.20	70	
16	Libourne	2010	Ville de Libourne	1	24,506	20.63	1188	
17	Manosque	2010	Ville de Manosque	1	23,069	56.73	407	
18	Mayenne	2002	Ville de Mayenne	1	14,338	19.88	721	
19	Muret	2009	Communauté D'Agglomération du Muretain	9	30,682	93.51	328	
20	Neuves Maisons	2007	Communauté de Communes Moselle et Madon	12	23,435	125.33	187	
21	Noyon	2008	Commune de Noyon	1	14,335	18.00	796	
22	Pont-Sainte-Maxence	2006	Ville de Pont Ste. Maxence	1	12,007	14.76	813	
23	Saint-Brévin-les-Pins	2008	Commune de Saint-Brevin-Les-Pins	1	12,414	19.29	644	
24	Senlis	2000	Ville de Senlis	1	16,907	24.05	703	
25	Vitré	2001	Vitré Communauté	36	65,451	691.92	95	
Total			25	143	770,740	3,071		
					Average	30,829	123	550
					Median	19,672	29	406
					Max	105,119	692	1716
					Min	773	11	75

The geographic spread

Figure 5 shows the geographic spread of free public transport in France. It can be seen that it is not a local or regional spread, but a national one.

The geographic spread of free public transport in France can contribute to its diffusion. Looking to the Figure 5 we locate the two first adopters for almost 20 years, from 1971 to 1989, Colommiers in the south, Compiègne in the north. Later, in 1989, Issoudun adopts it in the center.

We can see also, the formation of clusters of diffusion of the idea, especially in north around Compiègne. The new comers in 2009, like Muret and Aubagne may accelerate the diffusion in their regions and south France.

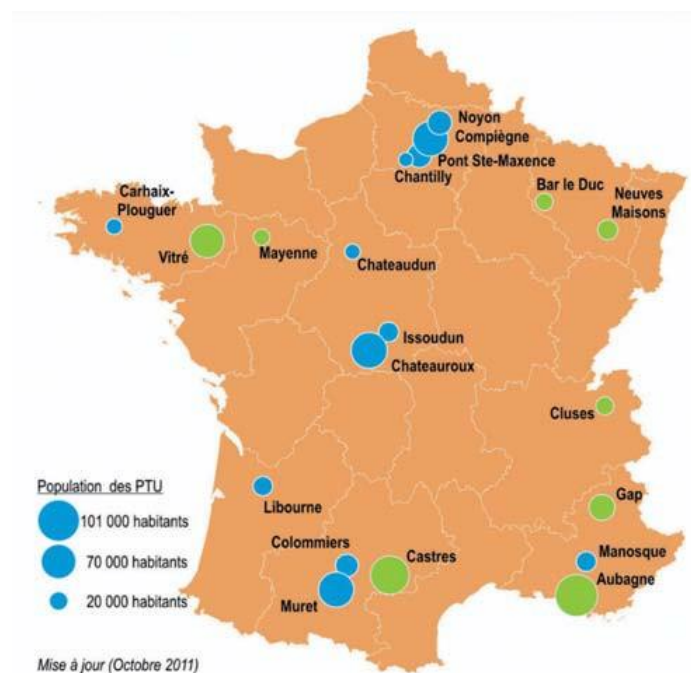


Figure 5 – The geographic spread of free public transport in France (Certu, 2011)

COMPARISON AGAINST PAID SYSTEMS

10 to 20 thousand inhabitants

Table 2 presents the data available for 2010 figures of cities on the 10 to 20 thousands inhabitants range. We have data for 4 of the 11 cities with free public transport and for 16 from 45 cities with fares. Though Chamonix is included it should be noted of this special touristic features, however, with 99% subsidizing, we may say that Chamonix has a free public transport in practice.

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The data reveals that the free public transport cities performs well in trip/inhabitants and in consequence in cost per trip. The cost per km is similar to the variation of the others cities, what means that the cost reduction is not a real gain in free public transport, as noted in others studies (Duhamel, 2004; Cordier, 2007).

Table 2 – Selected indicators from 2010 data available for cities with 10 to 20,000 population, by trips/pop

City	Fare €	Pop	Pop/ km ²	Trips (*)	km (*)	Operat Cost	Fare Rev.	Trip/ Pop	Trip/ km	€/km	€/trip	% OC
Chamonix	1.50	13 916	186	1700	813	3 655	28	122.2	2.1	4.43	2.12	1
Gros-Morne	1.20	10 883	200	422	476	1 186	396	38.8	0.9	2.43	2.74	34
Pont Ste Maxence	Free	12 059	813	406	83	384		33.7	4.9	3.41	0.69	0
Trinite (La) [2008]	n.a.	13 872	309	452	361	836	544	32.6	1.3	2.25	1.80	68
Chantilly	Free	11 193	691	354	78	312		31.6	4.5	3.66	0.81	0
Honfleur	0.50	12 501	372	381	199	700	200	30.5	1.9	3.51	1.84	29
Briançon [2008]	1.00	12 103	429		245	952	161	29.5	1.5	3.37	2.03	18
Saint-Claude	1.20	11 999	169	283	184	610	123	23.6	1.5	2.65	1.72	25
Senlis	Free	16 950	703	382	198	714		22.5	1.9	2.85	1.48	0
Figeac	Free	10 727	302	218	198	362		20.3	1.1	1.54	1.40	0
Landerneau	1.10	18 447	570	367	280	606	138	19.9	1.3	1.65	1.26	30
Pontarlier	0.60	22 023	461	381	104	670	66	19.6	3.7	6.09	1.67	10
Fecamp	0.50	19 842	1310	349	237	896	168	17.6	1.5	3.79	2.57	19
Digne-les-Bains	1.00	18 530	157	250	360	893	129	13.5	0.7	2.48	3.57	15
Mende	0.80	13 236	365	166	208	508	50	12.5	0.8	2.44	3.06	10
Lourdes	1.20	15 797	419	132	115	474	131	8.4	1.1	3.09	2.69	37
Douarnenez	0.80	15 642	620	120	171	600	74	7.7	0.7	2.95	4.22	15
Bolbec	0.80	11 978	963	47	56	169	30	3.9	0.8	3.00	3.60	18
Tulle	1.00	18 092	668	64	134	496	32	3.9	0.5	3.13	6.56	8
Vire	0.80	19 284	139	50	77	254	18	2.6	0.7	3.24	4.96	13

[2008] = Data from 2008; (*) in 1,000

60 to 90 thousand inhabitants

Table 3 presents two comparisons, one in 2003 presented by Duhamel (2004) as an example that one city with free public transport, Chateauroux were placed below others cities of the similar size and with fares. We take the data from CERTU (2012) to see the evolution of demand in the same cities.

Table 3 – Four cities compared, 2003 - 2010

	2003 (1)			2010 (2)						
	Pop	Trip/ Pop	Fare	Pop	Trip/ Pop	Fare	Trip/km	€/trip	Fare	%OC
Châteauroux	71 162	39	Free	76 059	57	3.07	3.3	0.92	Free	0%
Bourg en Bresse	63 400	52	1.10 €	73 580	36	3.37	1.4	2.48	1.30 €	31%
Chartres	86 000	52	0.96 €	90 279	64	3.75	3.5	1.08	1.10 €	27%
Cherbourg	94 000	60	1.00 €	89 948	61	4.04	2.6	1.53	1.20 €	26%

(1) Duhamel (2004); (2) CERTU (2012)

% OC = percentage of operating cost paid by fare revenue.

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In 2010, Chateauroux passes to the same level of trip per population as two of the others while one of them lower its performance. Moreover, Chateauroux gets in 2010 the lower operating cost and the lower cost per trip of all.

Table 4 presents the data available from CERTU (2012). We have data for 2 from the 4 cities with free public transport, and for 33 from 44 cities with fares and subsidies. So, for a total of 48 cities in the 60 to 90,000 population range we have data for 36, what means 73% of the total. Though Chartres has passed to 118,000 after 2007 with a new agglomeration, the data for public transport relates to the main city with 90,279 inhabitants.

Table 4 – Selected indicators from 2010 data available for cities with 60 to 90,000 population, by trips/pop

City	Fare €	Pop	Pop/ km ²	Trips (*)	km (*)	Op Cost	Fare Rev	Trip/ Pop	Trip/ km	€/km	€/trip	% OC
Compiègne [2007]	Free	60 845	370	5 900	998	3 115		81.7	5.9	2.88	0.49	0
Saint-Quentin	1.25	75 418	476	4 960	1 482	7 604	1 984	65.8	3.3	4.76	1.42	26
Chalons-en-Champagne	1.00	63 032	330	4 287	1 322	5 891	2 081	64.7	3.2	3.93	1.21	35
Chartres	1.10	90 279	271	7 625	2 912	8 303	2 052	64.2	3.5	3.75	1.08	25
Cherbourg	1.20	86 948	1254	5 287	2 005	8 162	2 001	60.8	2.6	4.04	1.53	25
Chateauroux	Free	76 059	167	4 298	1 293	4 024		56.5	3.3	3.07	0.92	0
Creil	1.10	73 645	2134	4 047	1 315	5 637	1 202	55.0	3.1	4.24	1.38	21
Annemasse	1.20	78 930	1027	4 256	1 803	5 747	1 849	53.9	2.4	3.15	1.33	32
Cholet	1.15	82 219	249	4 284	1 910	6 264	1 380	51.7	2.2	3.10	1.38	22
Evreux	1.10	85138	293	3 985	1 604	7 193	1 389	46.8	2.5	4.11	1.65	19
Beauvais	0.90	81 350	265	3 338	1 343	6 157	703	41.0	2.5	4.58	1.84	11
Macon	1.10	67 481	282	2 743	1 059	5 226	470	40.6	2.6	3.93	1.52	9
Longwy	1.30	65 216	560	2 609	1 765	6 083	659	39.6	1.5	3.08	2.08	11
Saint-Malo	1.15	84 210	341	3 244	2 392	7 246	1 184	38.5	1.4	3.00	2.21	16
Montlucon	1.10	62 745	337	2 359	1 321	5 215	553	37.6	1.8	3.94	2.20	11
Roanne	1.15	70 440	741	2 626	1 357	5 957	1 027	37.3	1.9	4.13	2.13	17
Nevers	1.10	68 818	355	2 474	1 723	6 011	1 112	35.9	1.4	3.46	2.41	18
Bourg-en-Bresse	1.30	73 580	258	2 622	1 930	6 829	1 386	35.6	1.4	3.37	2.48	20
Charleville-Mezieres	1.05	70 835	734	2 459	1 315	5 604	1 267	35.0	1.9	4.09	2.19	23
Périgueux	1.25	75 041	297	2 466	1 602	5 497	690	32.9	1.5	3.31	2.15	13
Tarbes	1.00	78 493	672	2 523	1 156	4 068	605	32.1	2.2	3.48	1.60	15
Auxerre	1.20	48 068	199	1 520	915	3 690	415	31.6	1.7	4.03	2.43	11
Arles [2009]	n.a.	64 674	75	2 170	627	3 035	373	27.2	3.5	4.72	1.36	12
Menton	1.00	68 070	392	1 830	1 125	5 569	863	26.9	1.6	4.48	2.75	15
Ajaccio	1.00	79 597	294	2 124	1 198	6 606	1 191	26.7	1.8	5.28	2.97	18
Puy-en-Velay (Le)	1.15	49 766	134	1 531	875	4 193	619	25.2	1.8	4.79	2.74	15
Saumur	1.35	64 901	116	1 546	1 405	4 267	692	23.8	1.1	2.73	2.48	16
Vienne [2008]	n.a.	68 755	254	1 418	878	3 143	674	20.6	1.6	3.56	2.20	21
Brive-la-Gaillarde	1.00	81 007	251	1 536	974	3 156	468	19.0	1.6	3.24	2.05	15
Soissons	1.10	49 210	209	1 156	560	1 547	415	19.0	2.1	2.67	1.29	27
Agen [2008]	1.10	67 480	253	1 200	821	3 246	525	17.8	1.5	3.89	2.66	16
Louviers	1.00	61 286	242	1 084	1 275	3 597	602	17.7	0.9	2.82	3.32	17
Cambrai [2008]	1.00	47 771	357	698	403	1 946	173	11.5	1.7	4.82	2.79	9
Royan	1.50	75 868	144	654	1 351	4 003	419	8.6	0.5	2.73	5.63	10
Arcachon [2008]	1.00	61 600	191	274	926	1 571	221	4.4	0.3	1.54	5.19	14
Saint-Omer	1.00	66 254	360	72	117	457	49	1.1	0.6	3.91	6.35	11

[2007],[2008] = data from 2007, 2008; (*) in 1,000

Considering the trip per population as the main indicator, we have both the two cities with free public transport in top 6, Compiègne as the first and Chateauroux in sixth. And because of high figures on trips, the two free public cities are the lowest costing trips.

FREE PUBLIC TRANSPORT AND SUBSIDY IN FRANCE

The case of the free public transport in France and all the criticism cannot be considered without understanding how the public transport is actually financed in the country.

All the paid public transport system subsidizes the fares. The figure y next shows the distribution of the proportion of subsidy to cover operating cost in a sample of 16 cities with data available in the database of Certu (2010).

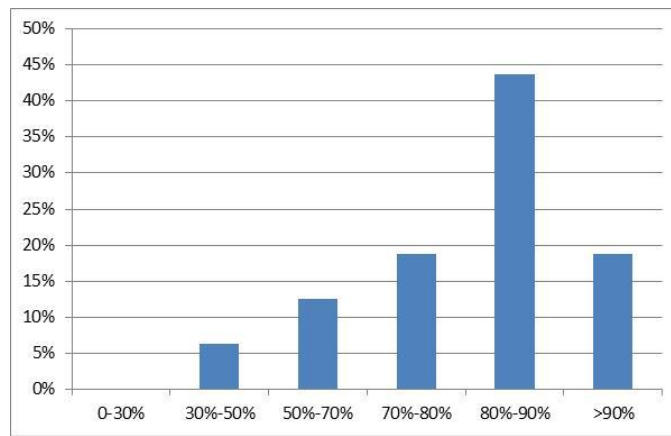


Figure x – Subsidy related to operating costs, sample of Certu (2010), cities with 10 to 20 thousands inhabitants.

On national average, the revenue from passengers covers only 20% of total cost, operation and investments. Considering only the operating costs, the revenue from users covers from 7% to 50% of the costs, depending on size of the system. The Figure y presents the average for different size of systems based on data from GART (2011).

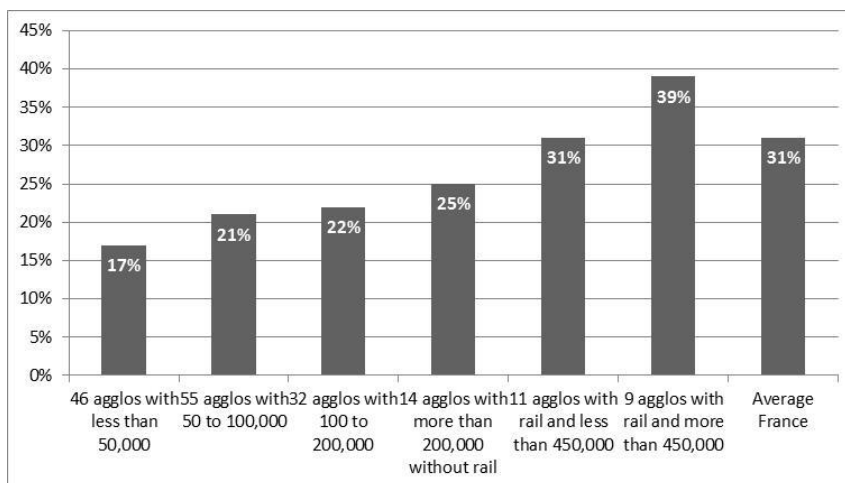


Figure x – Subsidy as proportion of operating cost, by size and type of system. Source: GART (2011, p.16)

The data on the total annual spending on public transport in France shows that the total spending in public transport in 2009 was 16.7 billion €, the part of this that came from fare was 4.4 billion € (Certu, 2012). The revenue from fares represents only 26 percent of total nationwide operating spending in French public transport.

Considering the France GDP of about 2 trillion euros, in the macroeconomic side, reallocating 0.22 % of France GDP enables the country to provide free public transport *pour tous et partout en France*, for everyone and everywhere in France. So, to provide free public transport in all France is now a matter of redistribute 0.22% of the wealth generated yearly toward the public transport. It does not appear to be unfeasible.

SOME CONCLUDING REMARKS

One main finding is that no city in France has returned to a paid public transport since the first adoptions in Colomiers and Compiègne almost 40 years ago. The financing schemes vary from the use of the *Versement Transport* only to the use of the city or agglomeration budget financing.

The demand for public transport increases in figures from 50% to 300%, but not reach the infinity what proves the derived demand main characteristic of public transport and that the passenger's transport demand is finite, even with price zero. This has an implication for transport planning in the sense that it can be possible estimate accurately the total demand in the scenario of free public transport and adjust the supply properly. Without the fare restriction, the public transport system can capture the society full mobility wants.

Some of the new users are car users, but the figure of modal change from cars to public transport is small which suggests that for a comprehensive sustainable transport policy, some car restriction measures should follow the free public transport adoption.

After all, it appears that the free public transport has come to stay in France. However, most of the free public transport system are of small size, and only in 2009 has reached an urban agglomeration of hundred thousand inhabitants, Aubagne et l'Etoile. The new adoption in Talinn, Estonia, starting in January 2013 puts the idea of free public transport in a new dimension – Talinn has 400 thousand inhabitants.

And, from a theoretical point of view, the main conceptual finding is that free public transport turns the public transport into actually public, a public good, and using Adam Smith words "provided for all and defrayed by the whole society" via taxes.

The free public transport challenges some established thoughts in the public transport, in special that the direct user is the only beneficial of the system and should pay for it. In research side, the free public transport leads to study urban transport in the fields of public economy, public finance, public choice, and common-pool resource economics. It lead also to theoretical research on the difference in free public provision and private or public transport production

becomes an important issue. In the policy side, the free public transport leads to challenges on inclusion, planning, institutional arrangements, private supply, and fiscal issues.

At the end, France is far more close to the free public transport everywhere and to everyone in the country than for an adoption of a market price system to it.

I think that if France eventually turns to free public transport, it could be a new French Revolution in public transport and public economy.

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