



## EMTA BAROMETER OF PUBLIC TRANSPORT IN THE EUROPEAN METROPOLITAN AREAS

# EMTA barometer

European Metropolitan Transport Authorities

2009

## Foreword

The association of European Metropolitan Transport Authorities (EMTA) brings together the public authorities responsible for planning, co-ordinating and funding the public transport systems of 28 of the European largest metropolitan areas and Montreal (Canada).

**A precise knowledge of reality is a prerequisite to define pertinent policies.** Decisions on public transport affect the daily lives of millions of people, the investment and operation costs of complex system often amount to millions of euros if not billions and have a determinant impact on the economic dynamism and environmental quality of urban areas.

In this context, **comparison of data between territories facing the same kind of challenges (benchmarking) is a useful source of information for decision makers.** The EMTA Barometer of public transport in the European metropolitan areas aims to provide such comparative insight.

Where they exist, **public transport authorities are the only organisations with a broad view of mobility issues in large urban contexts.** Metropolitan areas have multi-modal and multi-operator public transport networks. Besides, gathering data on mobility patterns and passenger perception is instrumental to their knowledge. Data collection shall therefore be a key responsibility of public transport authorities.

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To achieve this end, it is important to:

- > **define pertinent territories**, corresponding to the reality of mobility of people. Analysis should capture the reality of the territory where people do travel beyond administrative boundaries of local authorities or transport companies;
- > **determine a set of key indicators** that shall be collected and reviewed regularly so as to have a clear view of the main trends under way;
- > **take into account not only public transport, but also mobility in a broader sense**, including of course trips involving private cars, but also taxis, bicycle, and walking.

The well known difficulties and biases of collecting data call for a process of harmonization of definition at European level according to the Action Plan on Urban Mobility (European Commission, 2009). In the meantime, EMTA continues to collect data from the transport authorities of the European largest cities. The present leaflet is a summary of key findings from the Barometer full version 2009 data\*.

Changes over the previous edition - "Barometer 2008"- show:

- > Populations tend to densify in the metropolitan areas, at the same time several transport authorities enlarge their territorial scope (metropolitan areas of Seville and of Cadiz Bay);
- > the modal share in favour of public transport is still high in the main cities, and remarkably is quite balanced among private car (34%), soft modes walking and cycling (36%) and public transport (31%).
- > the demand for public transport is above one trip per inhabitant every working day, although in several metropolitan areas a decrease has been noticed due to the economic crisis;
- > Resources from fare revenues amount in average to 45.9% of the operational costs across the metropolitan areas surveyed and the public subsidies amount to 45.5%.

*The Barometer is produced by CRTM Madrid.*



\* The Barometer 2009 data has been published in full version in May 2012 and available from [www.emta.com](http://www.emta.com) publication section.



> 24 areas are listed in this leaflet with some changes over the previous edition of 2006. It presently includes data from Cadiz Bay and Lyon Urban Community while Frankfurt Rhein-Main and Greater Manchester haven't participated.

## Description of the metropolitan areas surveyed

	Authority responsible	Population 2009 (inhabitants)	PTA* area surface (km <sup>2</sup> )	Urbanized surface (km <sup>2</sup> )	Family size	Annual GDP per capita (€)
Stadsregio Amsterdam	Stadsregio	1,406,500	1,003	na	2.1	30,200
Barcelona Metropolitan Region	ATM	5,010,000	3,239	597	2.5	26,350
Berlin-Brandenburg	VBB	5,954,200	30,372	3,295	1.8	24,189
West Midlands (Birmingham)	Centro	2,619,600	901	435	2.4	20,259
Brussels Metropolitan	MRBC	3,100,000	5,000	1,100	2.4	63,382
Central Hungarian Region (Budapest)	BKK	2,951,436	7,597	2,544	2.6	16,194
Cadiz Bay	CMTBC	707,245	2,898	80	3.2	na
Greater Copenhagen	Movia	2,500,835	9,133	1,973	2.1	41,735
Helsinki	HSL	1,033,933	791	408	2.0	54,593
Greater London	TfL	7,753,600	1,579	1,042	2.3	35,326
Lyon Urban Community	SYTRAL	1,285,942	515	211	2.3	na
Madrid Community	CRTM	6,458,684	8,026	1,037	2.7	31,577
Greater Montreal	AMT	3,596,283 <sup>(1)</sup>	3,980	na	2.9	29,649
Paris Ile-de-France	STIF	11,729,613	12,012	2,534	2.3	46,984
Middle Bohemia Region (Prague)	ROPID	1,876,292	3,860	na	na	24,537
Metropolitan Area of Seville	CTAS	1,442,734	4,221	337	2.8	10,709
South Yorkshire (Sheffield)	SYPT	1,317,300	1,552	326	2.2	14,850
County of Stockholm	SL	2,019,182	6,491	na	3.5	na
Stuttgart Region	VRS	2,421,250	3,012	603	na	33,164
Turin Metropolitan Area	AMMT	1,555,778	837	246	2.2	20,781
Valencia Metropolitan Area	aVMM	1,800,031	1,415	325	2.5	21,462
VOR Region (Vienna)	VOR	2,769,117	8,441	na	2.1	36,582
Vilnius	MESP	850,324	9,731	449	3.2	14,801
Warsaw	ZTM	2,401,000	2,279	na	na	13,193

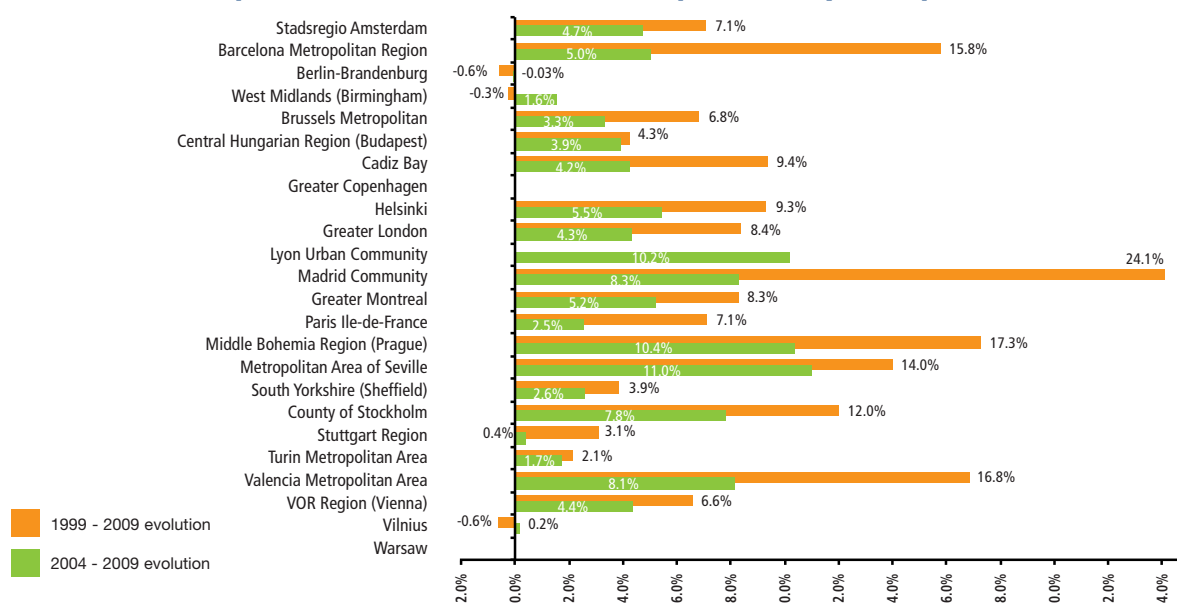
\*PTA: Public Transport Authority. <sup>(1)</sup> 2006 population

## > European metropolitan areas keep growing but have various demographic structures

Most urban areas surveyed have seen an increase of their population over the past ten years 1999-2009. The average growth rate is around 8% for the cities that have provided data. Spanish metropolitan areas such as Madrid Community, Valencia Metropolitan Area, Barcelona Metropolitan Region, Metropolitan Area of Seville a growth over 10% along with Middle Bohemia Region (Prague) and County of Stockholm while the rest of the metropolitan areas scored under 10%. Three metropolitan areas have a very slight decrease in population on the last 10 years period. They are Berlin-Brandenburg, West Midlands (Birmingham) and Vilnius. Though in the last two regions the evolution is positive in the last 5 years.

The weight of the main city over the whole metropolitan area is roughly a 48% of total population with large differences illustrating the diverse administrative frameworks and histories of the cities.

## Evolution of Population: decade 1999-2009 compared to 5 years span 2004-2009

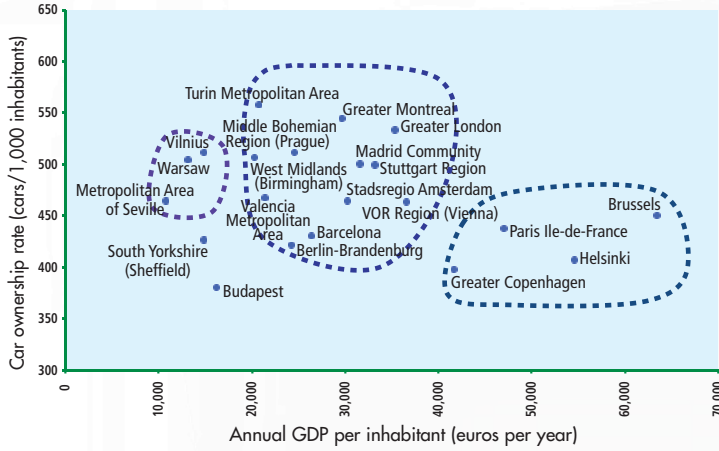


> Car ownership rates are twice as high in some cities as in others (620 cars per 1,000 inhabitants in Turin vs 340 in Budapest and 367 in Copenhagen). We can observe different groups and it seems that several wealthy metropolitan areas have a relatively low car ownership ratio (under 450 cars/1,000 inhabitants), and lower use of private car. In other words, public transport authorities have growing responsibilities in the metropolitan areas to offer attractive public transport services to a less car dependant community.

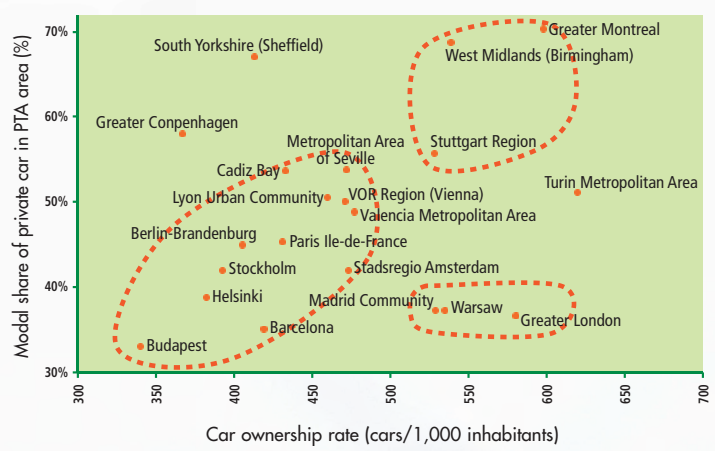




**Car ownership rate versus annual GDP per capita**



**Modal share of private car versus car ownership rate**



Other factors like urban density, family size, existence of efficient public transport systems, or the cost of using and parking of cars can lead to lower car ownership rates.

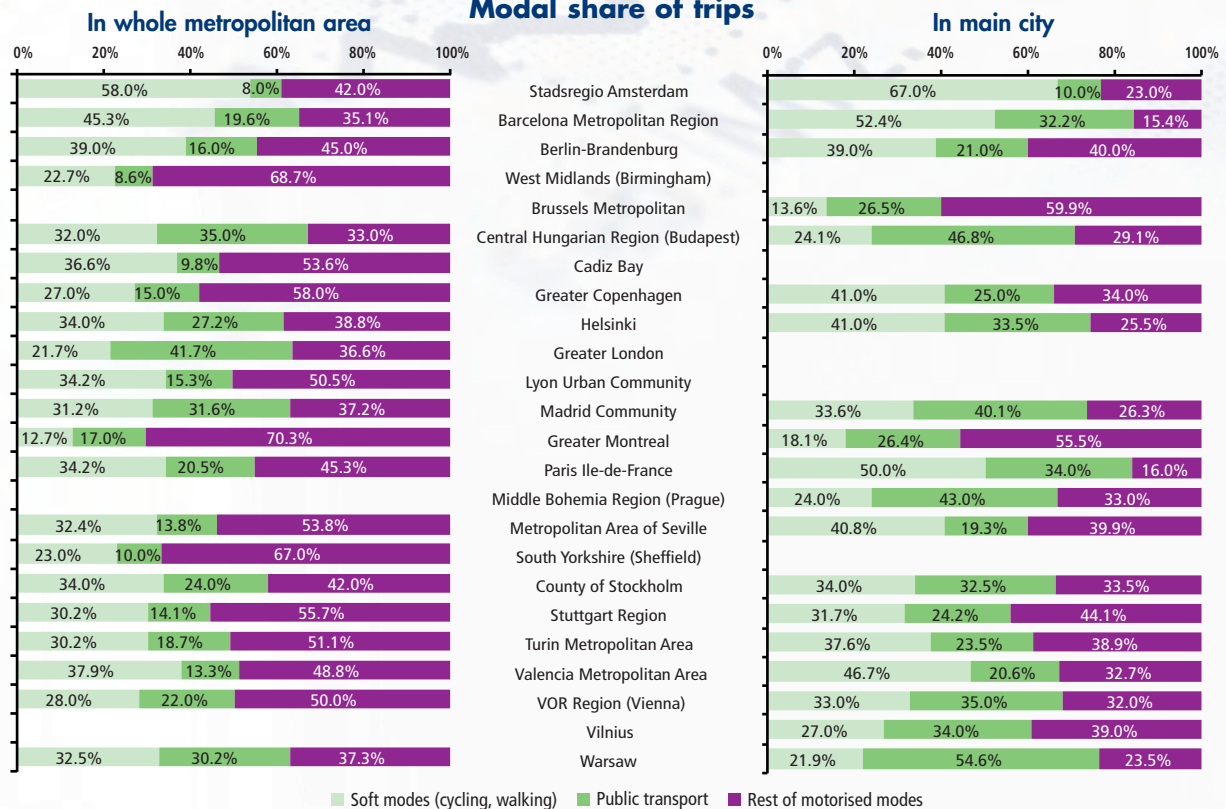
> **Public transport accounts for more than 30% of all trips (48% considering only motorised trips) in the densest parts of most European metropolitan areas (in the main cities),** illustrating its fundamental economic, social and environmental role in large urban territories. Soft modes (walking and cycling) account for 36% and rest of motorised modes (mainly private car), for 34%.

Most of the **main cities** achieve more than 60% of modal share for what we can consider as “sustainable mobility” (as sum of public transport and soft modes). Amsterdam, Barcelona, Budapest, Helsinki, Madrid, Paris and Warsaw stand out with a rate over 70%, illustrating the very dense public transport systems irrigating the heart of those capital cities, and the deep-rooted habit of walking and/or biking in the European cities.

The **metropolitan areas** of these cities mentioned above together with Greater London, County of Stockholm and Berlin-Brandenburg have a clear predominance of sustainable modes over the private car. Greater London, Central Hungarian Region (Budapest), Madrid Community and Warsaw are the metropolitan areas among those surveyed, where public transport accounts for the highest modal shares of all trips (between 42% and 30%).

There is a gap between modal share in the main city and modal share in the whole metropolitan area where public transport accounts, in average, for 20% of all trips (29% considering only motorised trips). This figure rather stable as monitored over the past years, embodies one of the main challenges facing public transport authorities and operating companies in the coming years: to develop public transport in the suburbs and the less dense parts of the metropolitan areas.

**Modal share of trips**

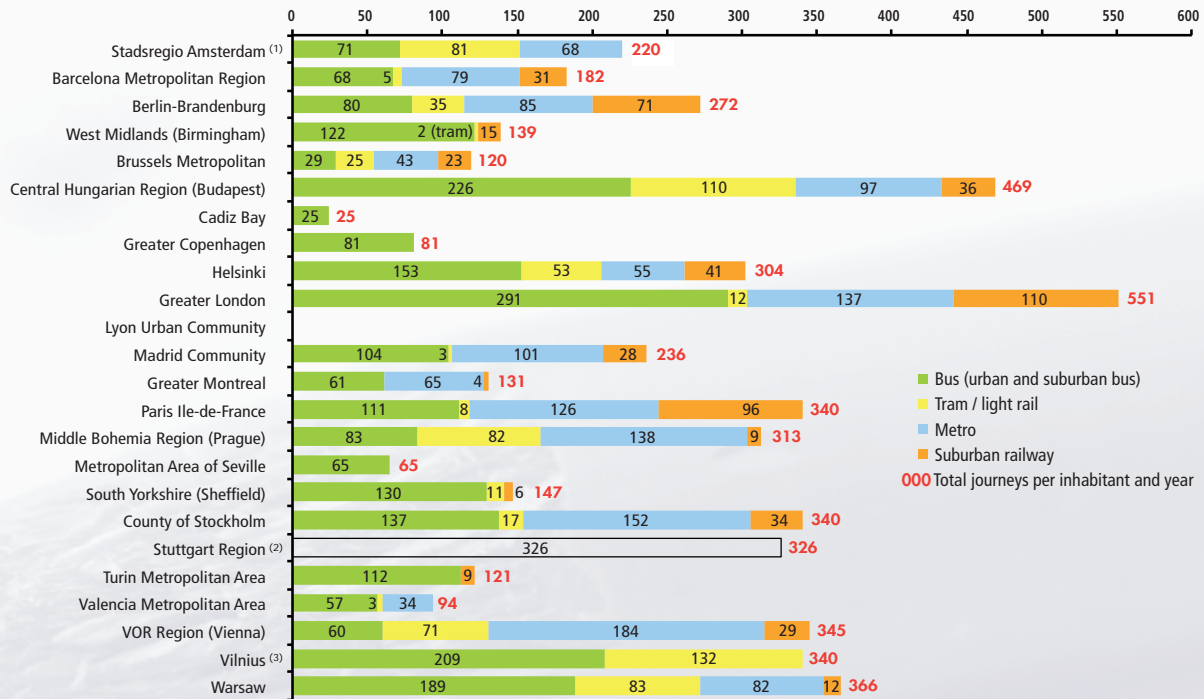




> Regarding the public transport demand, each inhabitant does more than 240 journeys (vs 230 in 2006) per year on public transport, more than one trip every working day. In some cases the total demand is over 400 journeys as in Budapest and Greater London. In two thirds of the metropolitan areas, the share of the bus mode is still dominant.

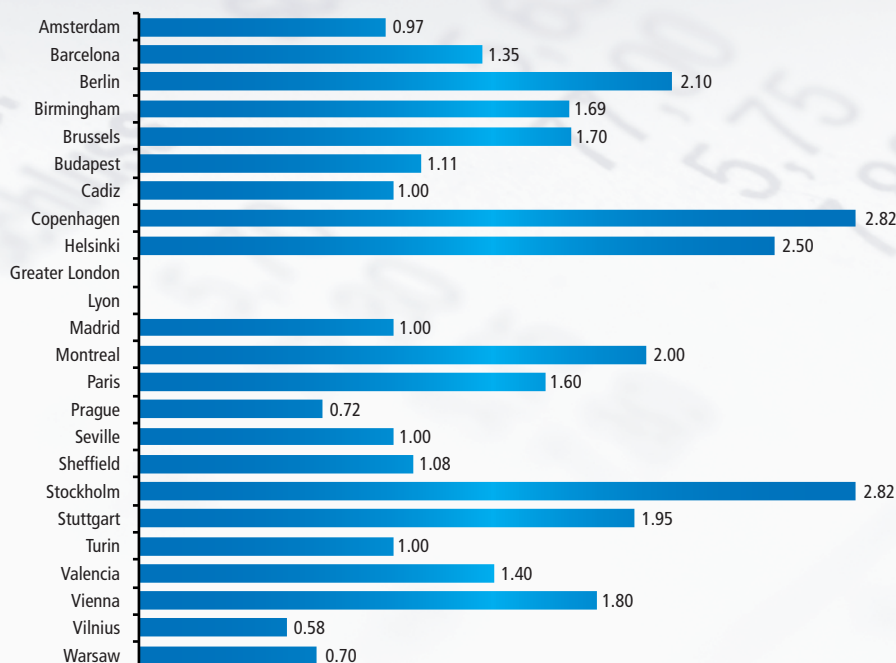
Over the years the increase in public transport demand reflects the effort being made by authorities and operators to offer a high quality public transport system, with accessible vehicles and stations, using ITS (Intelligent Transport System) technologies to guarantee reliability and safety in the operation, and real time information and contactless tickets to the user to promote the public transport use and make it more competitive to stand in front of the private vehicle.

### Public transport demand per inhabitant



> Fare policies and fare levels differ a lot between the different metropolitan areas. The price of a single ticket valid for the main city varies from €0.58 up to €2.82. The monthly pass varies from €19.50 to €85.16. However, these figures make no difference with the size and economic features of the metropolitan areas.

### Single ticket price for the main city (Euros)



<sup>(1)</sup> Bus figure refers only to urban bus

<sup>(2)</sup> Figure includes all modes

<sup>(3)</sup> Green refers to urban buses and yellow to trolleybuses



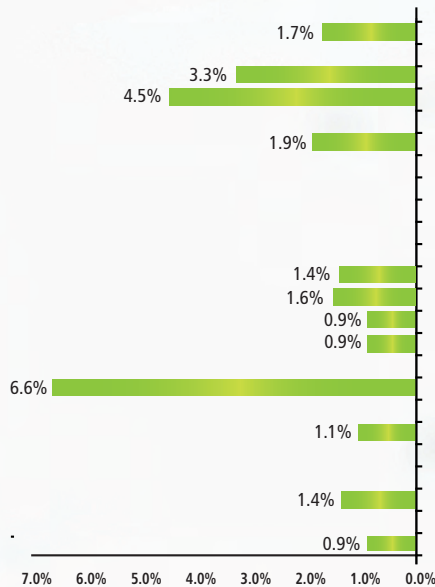


The monthly pass fare in main city compared to GDP per capita (annual GDP in city divided by 12) gives a ratio of 2.2%. Especially cheap are the monthly passes in Paris, Prague, Stuttgart and Warsaw (1%) as opposed to the highest prices in Sheffield (6.6%) or Birmingham (4.5%) both situated in the United Kingdom.

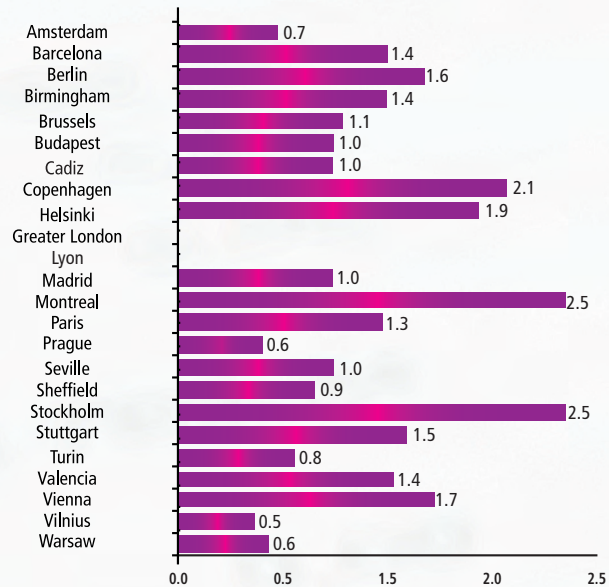
If we compare the single ticket with the petrol litre price (unleaded 95) we observe that lower ratio (0.5-0.9) should contribute to the use of public transport, while on the other hand higher ratios (over 2) indicate high level of welfare (Copenhagen, Helsinki, Montreal, Stockholm) or costly public transport systems.

### Main city fare ratios

Monthly pass fare in main city / Monthly GDP per capita (%)



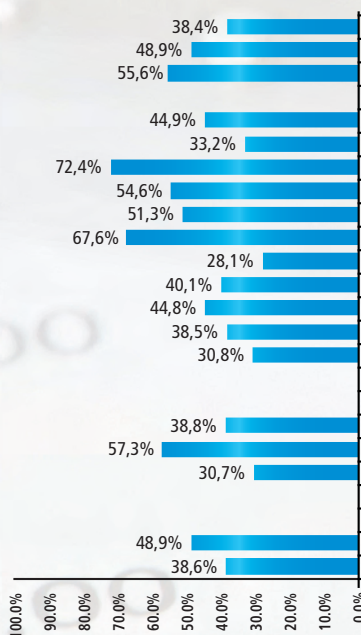
Single ticket fare in main city (€) / petrol litre price (unleaded 95 in 2009, €)



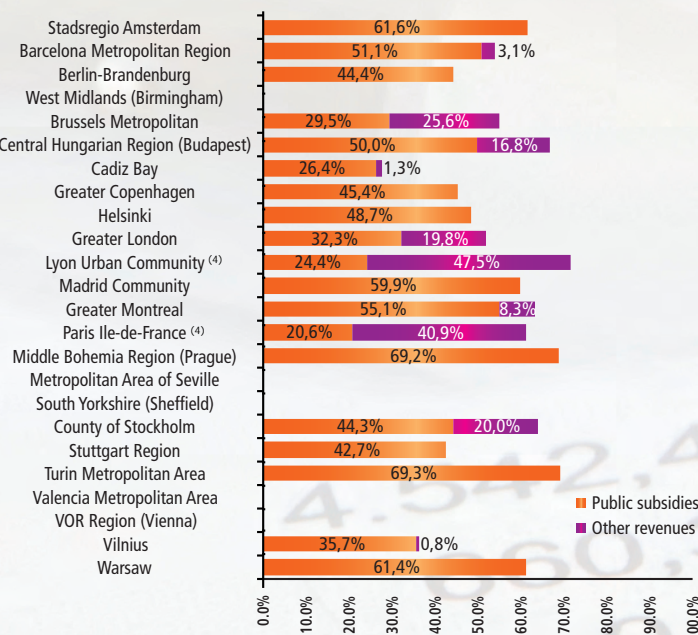
> The rates of coverage of costs of operation by fare revenues are also varying greatly, many cities cover more than 50% of operational cost with fare revenues but others are far from it. In average among those metropolitan areas surveyed, the operational costs of public transport in 2009 are covered 45.9% by fare revenues (slightly below than 2008, 47%) and 45.5% by subsidies (vs 51% in 2008).

### Coverage of operational costs

Coverage by fare revenues



Coverage by public subsidies and other revenues



(4) In French metropolitan areas (Lyon Urban Community and Paris Ile-de-France) the percentage of "Other revenues" refer to the transport tax (Versement Transport), covering 47.5% and 40.9% of operational costs respectively





## MEMBERS AS OF 1<sup>ST</sup> JANUARY 2012

PTA	City	Web Site
STADSREGIO	AMSTERDAM	<a href="http://www.stadsregioamsterdam.nl">www.stadsregioamsterdam.nl</a>
ATM	BARCELONA <i>MoB*</i>	<a href="http://www.atm.cat">www.atm.cat</a>
VBB	BERLIN-BRANDENBURG <i>President</i>	<a href="http://www.vbbonline.de">www.vbbonline.de</a>
CTB	BILBAO	<a href="http://www.cotrabi.com">www.cotrabi.com</a>
CENTRO	BIRMINGHAM	<a href="http://www.centro.org.uk">www.centro.org.uk</a>
MRBC	BRUSSELS-CAPITALE REGION	<a href="http://www.bruxelles.irisnet.be">www.bruxelles.irisnet.be</a>
BKK	BUDAPEST <i>MoB*</i>	<a href="http://www.bkk.hu">www.bkk.hu</a>
CMTBC	CADIZ BAY	<a href="http://www.cmtbc.es">www.cmtbc.es</a>
MOVIA	COPENHAGUE	<a href="http://www.movia.dk">www.movia.dk</a>
RMV	FRANKFURT	<a href="http://www.rmv.de">www.rmv.de</a>
HVV	HAMBURG	<a href="http://www.hvv.de">www.hvv.de</a>
HSL	HELSINKI <i>MoB*</i>	<a href="http://www.hsl.fi">www.hsl.fi</a>
TfL	LONDON	<a href="http://www.tfl.gov.uk">www.tfl.gov.uk</a>
SYTRAL	LYON	<a href="http://www.sytral.fr">www.sytral.fr</a>
CRTM	MADRID <i>Vice President - acting Treasurer</i>	<a href="http://www.crtm.es">www.crtm.es</a>
AMT	MONTREAL	<a href="http://www.amt.qc.ca">www.amt.qc.ca</a>
EPT	MURCIA	<a href="http://www.entidadpublicadeltransporte.es">www.entidadpublicadeltransporte.es</a>
RUTER	OSLO	<a href="http://www.ruter.no">www.ruter.no</a>
STIF	PARIS ILE-DE-FRANCE <i>Vice President</i>	<a href="http://www.stif.info">www.stif.info</a>
ROPID	PRAGUE	<a href="http://www.ropid.cz">www.ropid.cz</a>
CTAS	SEVILLA	<a href="http://www.consorciotransportes-sevilla.com">www.consorciotransportes-sevilla.com</a>
SYPTÉ	SHEFFIELD <i>MoB*</i>	<a href="http://www.sypte.co.uk">www.sypte.co.uk</a>
SL	STOCKHOLM	<a href="http://www.sl.se">www.sl.se</a>
VRS	STUTTART	<a href="http://www.region-stuttgart.org">www.region-stuttgart.org</a>
AMMT	TORINO <i>MoB*</i>	<a href="http://www.mtm.torino.it">www.mtm.torino.it</a>
aVMM	VALENCIA	<a href="http://www.avmm.es">www.avmm.es</a>
VOR	VIENNA	<a href="http://www.vor.at">www.vor.at</a>
MESP	VILNIUS	<a href="http://www.vilniustransport.lt">www.vilniustransport.lt</a>
ZTM	WARSAW <i>MoB*</i>	<a href="http://www.ztm.waw.pl">www.ztm.waw.pl</a>

*MoB\**: Member of the Board