

Impact Assessment of a new parking pricing scheme in Madrid City Centre

Andres Monzon
Professor of Transportation
Transport Research Centre
Universidad Politecnica de Madrid
Spain

María E. López-Lambas, Elena Lopez



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Access control to European City' Centres

- CBD concentrate many activities, that attract trips
- But it is necessary to reduce cars entering CBD
 - environmental nuisances, congestion, accidents, etc.
- Different European cities have implemented different access control systems:
 - London: *congestion pricing*
 - Paris: parking restrictions & priority to pedestrians and PT
 - Stockholm: *environmental pricing*
 - Rome: access to pollutant cars (LTZ zones)
 - Oslo, Bergen, Trondheim,....: toll rings
 - Vienna: parking enforcement and cycling
 -MADRID?

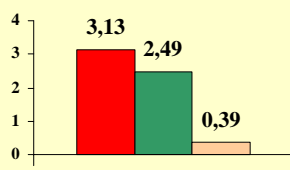


Madrid Region

POPULATION, SURFACE AND DENSITY

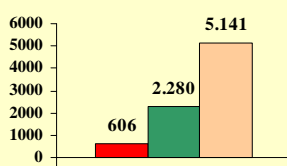
	Population		Area (km ²)	Density 2006 (inhab/km ²)
	1986	2006		
Madrid City	3,058,182	3,128,600	606.4	5,159.3
- Central Core-CBD	1,028,960	996,595	42.0	23,728.5
- Rest of the city	2,029,222	2,132,005	564.4	3,777.5
Madrid Metropolitan Ring	1,537,472	2,491,248	2,280.7	1,092.3
Rest of region-Regional Ring	184,918	388,276	5,141.4	75.5
Total Region	4,780,572	6,008,183	8,028.5	748.4

POPULATION (millions)



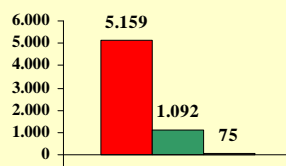
Total Regional Population
6,008,183 inhabitants

AREA (km²)

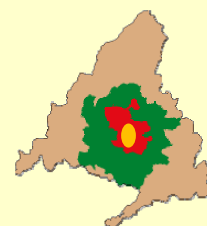


Total Regional Area
8,028 km²

DENSITY (inhab/km²)



Mean Density of Regional Population
748,4 inhab/km²



■ Madrid City
■ Metropolitan ring
■ Regional ring



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Mobility Patterns in Madrid Region

Modal split in Madrid Metropolitan Area, 2004

Mode	Urban trips	%	Metropolitan trips	%
Walking	2,449,839	32.0	1,835,742	30.2
Public Transport	2,918,938	38.2	1,481,175	24.4
Car	1,716,583	22.4	2,700,828	44.5
Taxi	508,319	6.6	24,804	0.4
Motorbike	52,818	0.7	30,469	0.5
Total	7,646,497	100.0	6,073,018	100.0

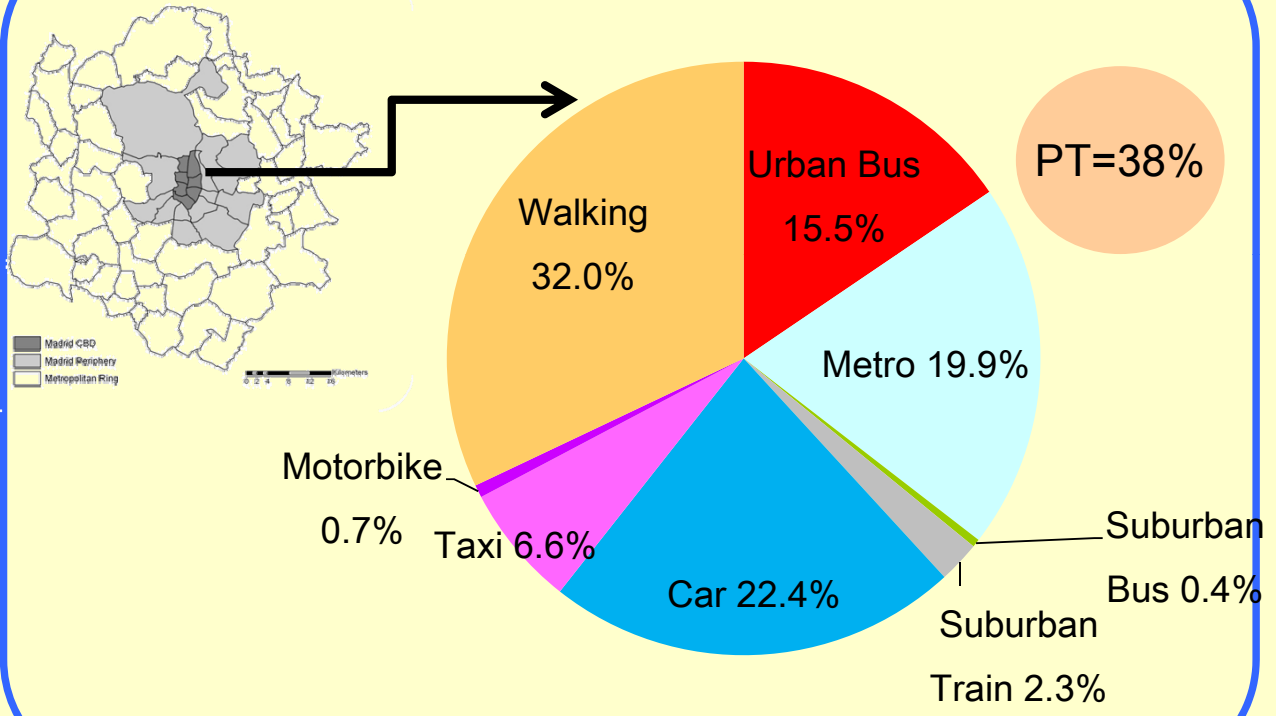


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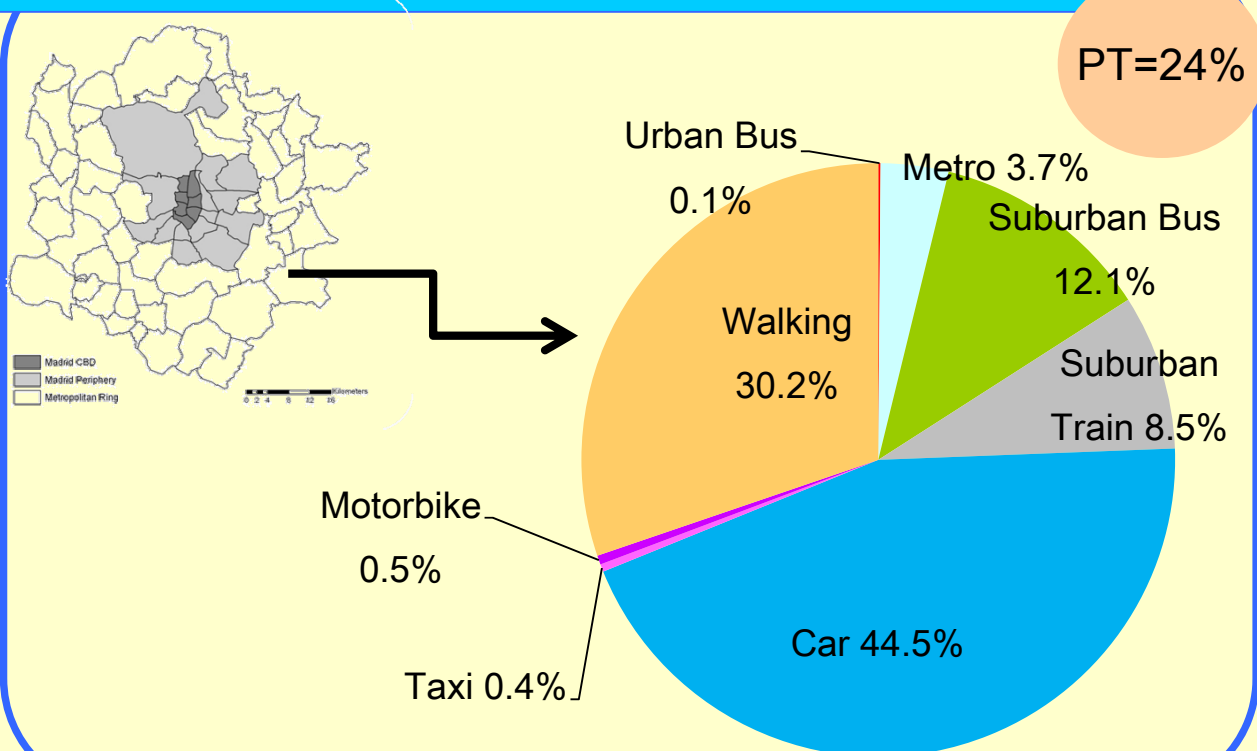
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Modal split. Urban trips, 2004

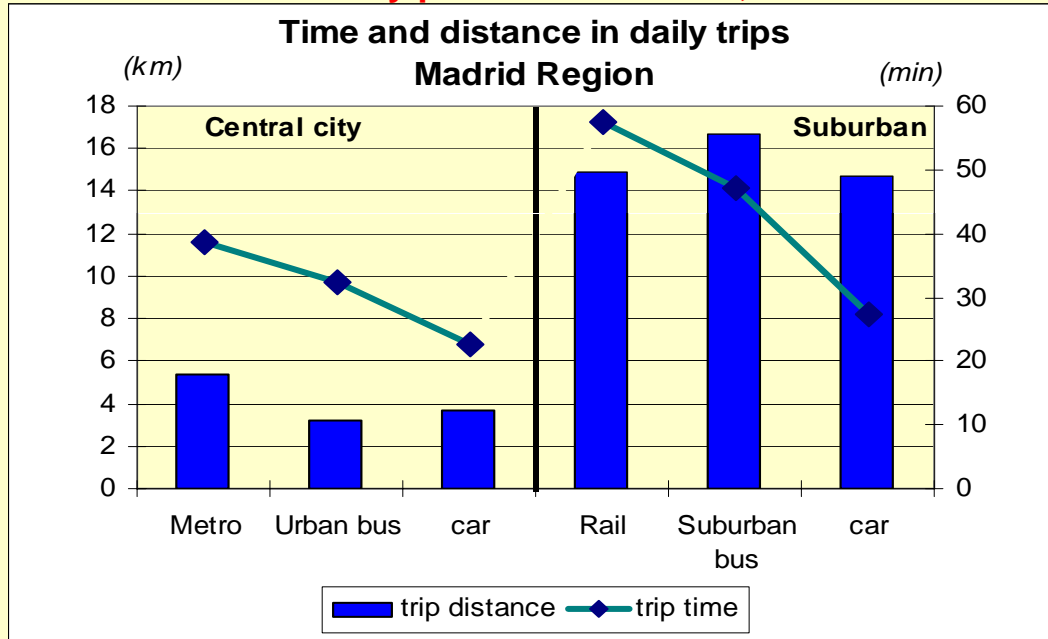


Modal split. Metropolitan trips, 2004



Mobility Patterns in Madrid Region

Mobility performance rates, 2004



Car is a competitive option both in time and distance
Less dense → less sustainable metropolitan city



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Madrid mobility strategy? – policy measures

- **Improve PT patronage**

Metro Extension Plan 2003-07: 90 km
New urban railway line 8.3 km
5 new intermodal interchanges
22 km of separated bus lanes, etc.



- **Re-design of the M-30 inner orbital motorway**

To attract car traffic out of CBD, the M-30 motorway has been totally renovated to concentrate orbital trips



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Madrid mobility strategy? – policy measures

- Pedestrianisation of historical zones

From 1994- 45,000 m²

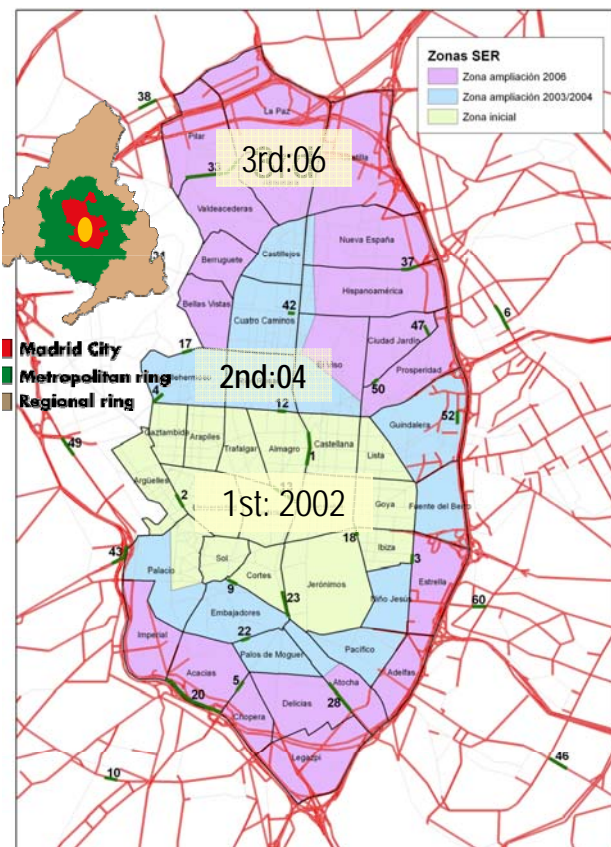
- Parking pricing&control

SER



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Parking Control System in Madrid Centre: SER



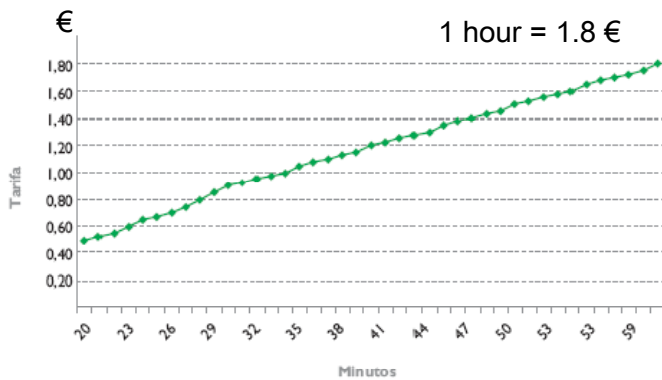
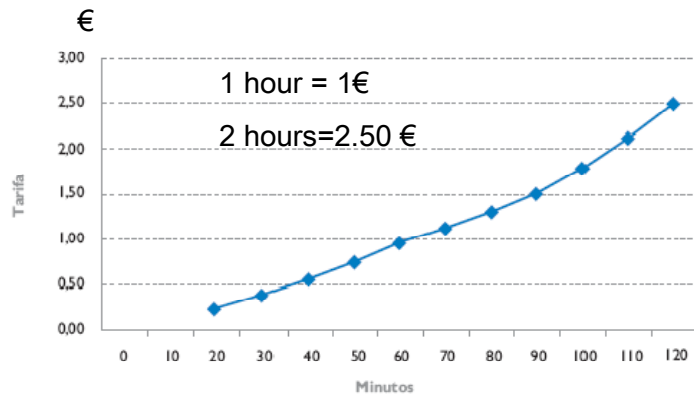
Parking pricing scheme in Madrid CBD

- starting in Nov'2002
- 2 extensions: 2004, 2006
- 166,000 parking spaces
- cover 46,000 sq-km
- 2 types of spaces
 - 35,000 Green places
 - free for residents, no limit
 - max: 1 hour for others
 - expensive
 - 131,000 Blue places
 - 2 hours everybody
 - cheaper

Parking Control System in Madrid Centre: SER

Fee levels (2006)

blue spaces
progressive fee cheaper
and longer stay



green spaces: residents
linear fee
expensive and shorter stay

VALES Y PUERTOS
ID

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Parking Control System in Madrid Centre: SER

	fees collected in 2006			
	per year €	per day €	per space and day €	per ticket €
blue	33,523,618	132,272	3,73	1,34
green	26,130,708	102,139	0,79	1,24
total	59,654,326	234,411	1,42	1,29

Recaudación año 2006 por Colores



Azules Verdes

	vehicles parked per space/day	payed time
		%
blue	2.68	37%
green	0.60	4.3%
total	1.03	24.5%



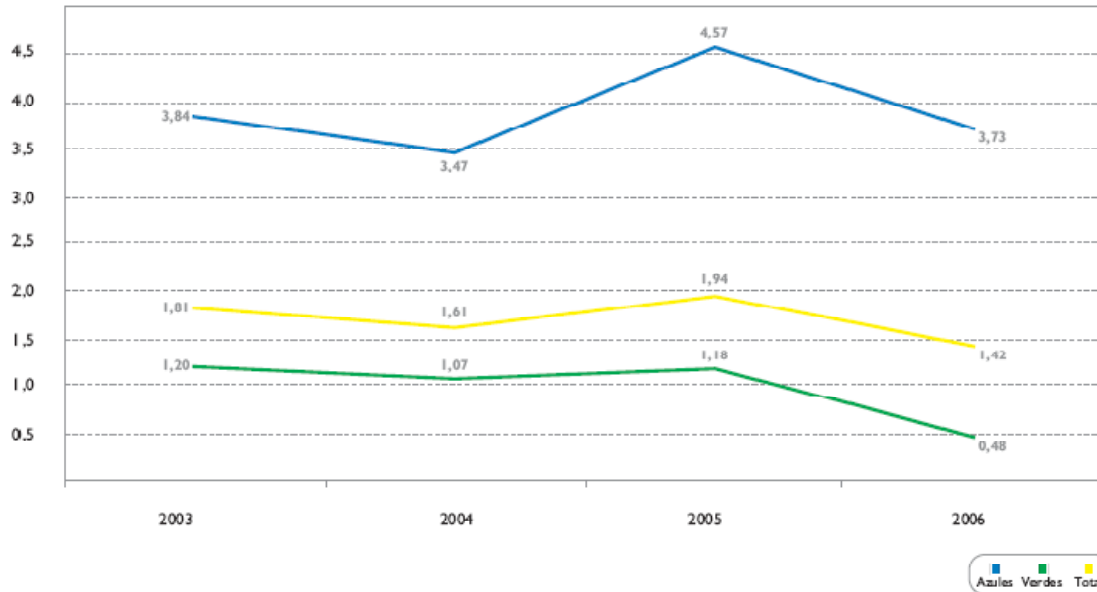
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Parking Control System in Madrid Centre: SER

Evolution of fees collected by day and parking space

Recaudación por Día y Plaza Años 2003 - 2006.
Collection for Day and Space 2003 - 2006.
Recettes par Jour et Place 2003 - 2006.



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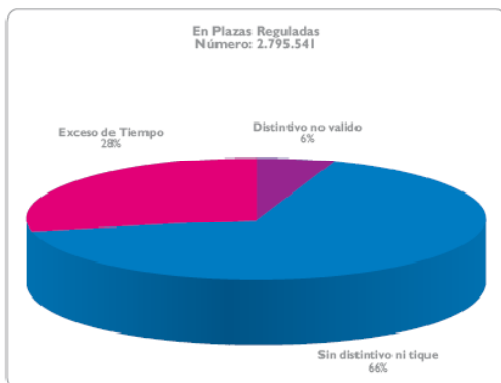
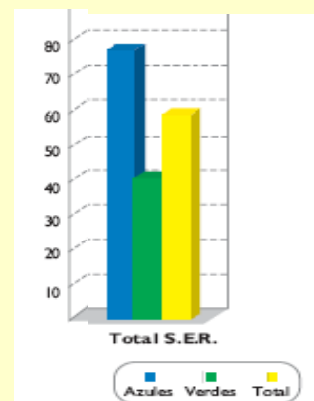
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Parking Control System in Madrid Centre: SER

Penalties (2006)

Number of penalties	
No ticket	1,848,000
Excess time	793,000
Invalid ticket	154,000
Other violations	526,000
Total	3,321,000

Average time of stay (2006)



blue: 77 min
green: 40,6 min
Total: 58,8 min



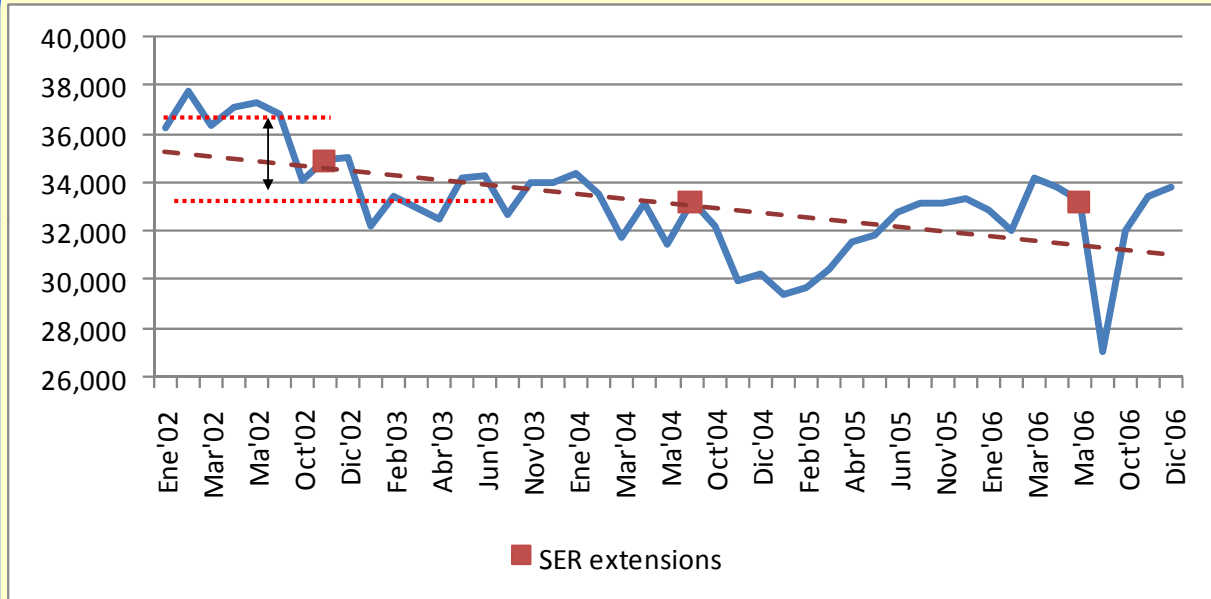
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Effects of SER on mobility patterns

ADT evolution in central part count stations



12% reduction when SER started

Variations from 26% to 6% according to different seasons

Outer extensions: immediate effect, not permanent



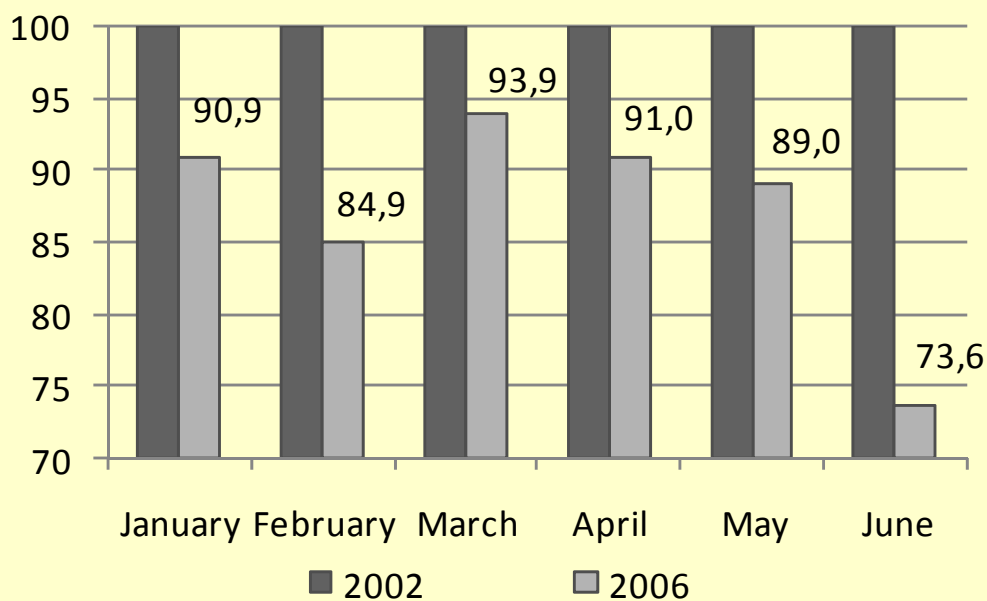
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Effects of SER on mobility patterns

ADT evolution in central part count stations



Although the growth of population and mobility, there is a reduction of traffic flows in central zones



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Conclusions

- Short term effects of parking pricing: 12% reduction in traffic flow in central areas.
- Reduced traffic entrance from outside
- More effective when applied to central core.
- Less impact of extensions to outer parts
- Problem: no differential parking fees according to distance to city centre: policy mistake
- Parking fee is perceived like a tax, no induces changes in behaviour
- No evidence of transfer to PT

