

---

*Ceris-Cnr, W.P. N°16/2000*

# THE PUBLIC TRANSIT SYSTEMS IN ITALY: A CRITICAL ANALYSIS OF THE REGULATORY FRAMEWORK

**Massimiliano Piacenza**

*(Università di Roma “La Sapienza” - Ceris-Cnr)*

**December 2000**

## **Abstract**

In this paper we attempt to shed some light on the way the regulation of public transit systems has been approached in the past and is presently addressed in Italy. The reduction of x-inefficiency represents a great challenge for the local authorities, given the high operating costs faced by the transportation companies and the moderate tariffs level that do not allow the operators to balance costs and revenues. Throughout the 1980's and the first half of the 1990's, the problem was essentially met by means of stopgap measures taken mainly for emergency, to curb the deficit build-up. In the past five years it has been turning the efforts towards a radical reorganization of the whole local public transportation (LPT) industry, with the law 549/95, completed with the *Decreti Legge* 422/97 and 400/99. The reform process includes among its goals the attribution of financial responsibility to the sector operators and the start of privatization of the public transit systems. The introduction of more competitive environment, mainly by the resort to tendering for the allotment of concessions, represents the challenge for the future. A complete evaluation of the achieved results is probably still premature. Nevertheless, as the first goal is concerned, the reform appears suitable to yield some positive result. On the contrary, the liberalization and privatization of the LPT sector is progressing very slowly, due to the protection still given to the public-owned companies. It is then expected that in the future a decisive action with regard to such important aspects of the regulatory reform will be undertaken.

**Key words:** public transit systems, regulation, x-efficiency, competitive tendering

**JEL:** R48, L92, L51

*Massimiliano Piacenza: Department of Economics, Università di Roma “La Sapienza”, Via A. Cesalpino 12/14, 00161 Rome, Italy; email [M.Piacenza@ceris.cnr.it](mailto:M.Piacenza@ceris.cnr.it).*

*\* I would like to thank Giovanni Fraquelli, Farid Gasmi and Marc Ivaldi for their useful comments on the first version of this paper. I am also grateful to Silvana Zelli and Maria Zittino for their help in arranging text and tables, and Ceris-Cnr for technical support.*

*\*\* This work has been carried out within the Ceris-Cnr-HERMES project “I trasporti locali: dal sussidio all'incentivazione all'efficienza”, coordinated by professor Giovanni Fraquelli.*

WORKING PAPER CERIS-CNR  
Anno 2, N° 16 – 2000  
Autorizzazione del tribunale di Torino  
N. 2681 del 28 marzo 1977

*Direttore Responsabile*  
Secondo Rolfo

*Direzione e Redazione*  
Ceris-Cnr  
Via Avogadro, 8  
10121 Torino, Italy  
Tel. +39 011 5601.111  
Fax +39 011 562.6058  
E-mail [segreteria@ceris.cnr.it](mailto:segreteria@ceris.cnr.it)

*Segreteria di redazione*  
Maria Zittino

*Distribuzione*  
Spedizione gratuita

*Fotocomposizione e impaginazione*  
In proprio

*Stampa*  
In proprio

Finito di stampare nel mese di April 2001

**Copyright © 2000 by Ceris-Cnr**

All rights reserved. Parts of this paper may be reproduced with the permission of the author(s)  
and quoting the source.

Private edition

## Contents

<b>1. Introduction.....</b>	<b>7</b>
<b>2. The structure of the sector .....</b>	<b>8</b>
2.1. <i>Modal composition of the local public transport .....</i>	8
2.2. <i>Ownership structure of the supplying firms.....</i>	9
2.3. <i>The planning and the financing of the services: the framework before         the reform.....</i>	11
<b>3. Economic analysis: the critical aspects .....</b>	<b>16</b>
3.1. <i>Public expenditure in transportation sector .....</i>	17
3.2. <i>Modification of the mobility demand.....</i>	18
3.3. <i>Dynamics of the tariffs.....</i>	20
3.4. <i>Costs and productivity trend.....</i>	22
<b>4. Start and development of reforms in the LPT sector .....</b>	<b>25</b>
4.1. <i>Aimed purposes and first evaluation of the results.....</i>	26
4.2. <i>Intervention of the National Antitrust Authority.....</i>	32
<b>5. Conclusion .....</b>	<b>36</b>
<b>References.....</b>	<b>39</b>

## 1. Introduction

The local public transport falls into the category of services referred to as *network utilities*, where the characteristics of an essential public service and the features of natural monopoly at the local level give rise to important regulation questions. Generally, the transport network is under the jurisdiction of a local authority (Region or smaller local body) that is responsible for the planning of the services within the pertaining territorial area, while the supplying of the services is allotted to a transit company, mostly public with regard to the Italian sector. At present, the high operating costs of the local operators constitute a great challenge for the political authorities of the different communities, given the permanent deficit characterizing the sector. Indeed, it appears that the tariffs that are currently employed to insure that the obligation of universal public service is fulfilled do not allow the transit company to balance costs and revenues. Therefore, the local authorities are compelled to a compromise between, on the one hand, the need for budget balance, ensured by the payment of a subsidy to the transport operators, and, on the other hand, the mission of public service that the companies should pursue. In other words, the regulator has to ensure the economic-financial equilibrium of the utilities, while avoiding the waste and inefficiencies that rebound upon the service users. To reach this aim of “optimal” regulation, first, it is necessary to identify the factors that, in the real experience of the firms operating in the sector, actually influence the productive structure and the dimension and the nature of costs. Second, given the knowledge (not always complete) of the technology, the productive capacity and the degree of efficiency characterizing the transport operators, it is important that the governing authority give proper incentives to the firms to improve their productivity, which, in turn, is a critical determinant of operating costs. And this, in accordance with the new theory of regulation of monopolies<sup>1</sup>, may be achieved by acting upon the incentives mechanisms underlying the contractual relationship governing the relations between the regulatory authority and the firms or the more implicit incentives that result from the competitive pressure characterizing the market structure.

The purpose of this work is to shed some light on the way these issues have been approached in the past and are presently addressed in the context of public transit systems

---

<sup>1</sup> The *new theory of regulation* emerged in the early 80's with the contributions of Loeb and Magat (1979) and Baron and Myerson (1982) and has been fully evolving in the more recent works of Laffont and Tirole (1986, 1990a, 1990b, 1993). This theory, by emphasizing the impact of the power of incentive schemes adopted by the regulator on the cost performance of the regulated firm, put the regulation problem in terms of a principal-agent relationship within a framework of asymmetric information. In this way it manages to provide a methodology for designing optimal regulation mechanisms and a rigorous foundation for the welfare analysis of different institutional settings subjected to informational constraints pertaining to the production technology and the cost-reducing effort released by managers of the regulated firm.

in Italy. To this end, the analysis of the institutional and regulatory framework of the Italian industry is very useful to pinpoint the specific problems faced by this sector that the reforms in progress should aim to solve. This analysis will also allow us to identify the empirical and theoretical tools of economic analysis that should provide useful guidance for a more detailed study of these issues in the future.

The remainder of the paper is organised as follows. After a description of the structure of the Italian sector (paragraph 2) and the main critical aspects from an economic point of view (paragraph 3), the goals of the reform in progress are discussed (paragraph 4, section 1): rationalisation of the competence concerning local transport, financial responsibility of the sector operators (local administrations and public transit companies) and introduction of more competitive environment. In the same section a first evaluation of the achieved results is also presented. Subsequently (paragraph 4, section 2), there will be a review of the corrective actions that have been suggested by the National Antitrust Authority. Finally, in the conclusion (paragraph 5) existing problems will be highlighted, underlining the central role that the reform is giving to the regions, and the close tie within the local services between privatisation policy and success of the liberalisation process.

## **2. The structure of the sector**

### *2.1. Modal composition of the local public transport*

The local public transportation (from now on LPT) sector divides into urban and extra-urban transport systems and is internally composed of different transit modes. Those include:

- bus-lines, operating in both the urban and the extra-urban areas;
- tramway, that provides urban service in five cities (Turin, Milan, Trieste, Rome, and Naples) and extra-urban service only in Milan;
- subway, with urban service in Rome, Milan and Genoa;
- railways in regime of government license or management, operating on an extra-urban scale;
- State Railways (FS), limited to the services concerning the local transit.

Like the majority of European countries, in Italy, the road-mode of transportation has been progressively increasing in importance, given the higher costs of the infrastructure investments which usually have to be supported to develop the alternative means of transport, and at present the supply of bus services dominates the LPT sector. Indeed the

bus-lines system embraces more than 1.100 firms, 18 per cent of which provides only urban services, 67 per cent only extra-urban services, and the remaining 15 per cent supplies both types of service. On the whole, this transit mode accounts for over the 80 per cent of LPT services in terms of supplied seat-kilometers<sup>2</sup>.

It is well worth remarking the recent attempts to invert this tendency towards the increasing monomodality of the LPT, which has in fact had the direct effect of worsening the already dramatic marginality of the public service in comparison with the overwhelming use of private cars. More specifically, the opportunity to develop the organization of the LPT in an intermodal way has gained strength with the emanation of the law n. 211/92 concerning the highway mass transit. This law defines a package of interventions allowed to benefit from government contributions, in particular the realization and the development of subway and tramway networks and local railway systems, with regard to which 44 projects are known to have been approved at the present time<sup>3</sup>.

## *2.2. Ownership structure of the supplying firms*

In most of continental Europe<sup>4</sup>, local transit services are provided by only one multi-modal company under the direct or indirect authority of a public body responsible for the programming of public transport, except for some instances in which the services are operated by more than one firm (typically the case for some bus lines in the suburbs and extra-urban areas). In addition to this common feature of monopoly at local level which characterizes the provision of the LPT services, one can highlight the predominant position in the Italian sector of public operators in comparison with private companies<sup>5</sup>.

The conditions for the management of the LPT services adopted in the past were those set by the law n.151/81<sup>6</sup> (article 4), i.e., 1] on a shoestring of the local government units

---

<sup>2</sup> Source: Ministry of Transport and Navigation (1997).

<sup>3</sup> These projects imply investments of over 12 trillion lire, nearly half of which covered through government contributions. More specifically, 29 of the approved projects relate to the realization and the development of subway and tramway networks, for a total amount of over 8.5 trillion lire, 40 per cent of which is covered through State funding, while the remaining 15 interventions concern the local railway lines and imply investments over the 3.7 trillion lire, mostly (84 per cent) financed by government contributions.

<sup>4</sup> Obviously, the British LPT sector in comparison with the other European countries is characterized by a different organization that reflects the liberalization process of the industry, started with the British Transport Act of 1985.

<sup>5</sup> In contrast to other European countries, in which private sector dominates the public sector in the management of the LPT services. Emblematic, in this regard, is the French case, characterized by a quota of supplying firms under the government control that falls short of the 35 per cent.

<sup>6</sup> This law, whose emanation had the scope of improving the management of local public transport utilities against the constant waste of resources, cause for progressively bigger public deficits, can be considered as the first attempt to define an organic and rational system of rules for the regulation of the LPT sector, also in sight of its reorganization and development (see the paragraph 1.3 for the details).

(direct management), 2] through the formation of *special companies* whose complete ownership is under the local body<sup>7</sup>, and 3] in regime of concession, by means of the direct allotment of the transport lines to public-owned or private-owned firms<sup>8</sup>. In particular, the indirect management through the resort to the special company institution has represented without doubt the most recurring model and this allows us to justify the peculiar ownership structure, namely more public-oriented, that characterizes the Italian LPT sector.

**Table 1 - Local public transit: main traffic data for the road transport by separating local state-owned from private-owned companies (years 1985-1995)**

Type of traffic index	Years	Local State-owned companies	%	Local private-owned companies	%	Total
Vehicles (number of buses)	1985	26,113	66	13,547	34	39,660
	1990	28,053	66	14,416	34	42,469
	1993	27,639	66	14,139	34	41,778
	1994	26,827	64	14,773	36	41,600
	1995	26,032	63	15,277	37	41,309
Number of service workers	1985	94,070	80	23,341	20	117,411
	1990	87,405	78	23,997	22	111,402
	1993	80,722	78	22,228	22	102,950
	1994	76,482	77	22,640	23	99,122
	1995	71,621	76	22,575	24	94,196
Passengers (in millions)	1993	3,090,611	87	460,061	13	3,550,672
	1994	3,122,765	87	462,448	13	3,585,213
	1995	2,995,127	85	513,768	15	3,508,895

Source: Ministry of Transport and Navigation (1997)

<sup>7</sup> The legislative definition of the *special company* institution has changed out of all during the years with respect to what the legislator referred to in 1981, moving towards a larger autonomy from the owner local body as regards the managerial policy. At present this institute is regulated by the law n. 142/90, stating under the first paragraph of the article 23: “the special company is a local body’s instrumental institution, incorporated and endowed with entrepreneurial autonomy and its own statute which was approved by the town council”.

<sup>8</sup> With regard to the granting of transport lines concessions, the law n. 151/81 referred to special regional ordinances, which had to establish: a) the term and the procedure of the allotment, b) the conditions for the practice, as regards the safety and the regularity of the services, c) the circumstances of rescission and d) the cases of interregional lines. The reform of the LPT sector, started in the second half of the nineties, has been attempting to introduce important innovations with regard to the process of awarding concessions, in particular by recommending the resort to competitive tendering (decree law n. 422/97), in order to promote the competition and encourage the allocative efficiency in the sector. However, as we well see in the paragraph 3, the regions and the local bodies have been revealing conspicuous delay in adopting such measures. This has raised the intervention of the National Antitrust Authority (AGCM) and has compelled to the emanation of new more stringent rules on the subject (decree law n. 400/99) to urge the regional and local authorities to conform to the guidelines of the reform.

Table 1 shows the distribution of local public-owned and private-owned companies for the road transport way in terms of number of buses, service workers and passengers during the years 1985-1995. The evolution of the traffic data during this period certainly highlights a progressively greater relevance of the private sector; nevertheless, the weight of the local public-owned companies goes on being decisive, specially in terms of number of passengers (85% public versus 15% private during 1995). We will go back at the end of this study to the issue of the importance of taking seriously the privatization policy in the sector, if one wishes that the liberalization of the LPT services, a guideline of the reform process in progress (see below), actually manifests oneself in the introduction of the widest admissible degree of competition and in a resultant efficiency recovery on the side of service supply.

### *2.3. The planning and the financing of the services: the framework before the reform*

The Italian Constitution gives the Regional authorities the power to legislate about some areas of regional interest (art. 117). Included among these are “regional tramways and roadways”. For the same subjects indicated in the article n. 117, the Constitution also gives the regions administrative powers (art. 118); however, there is always the possibility for the subjects of exclusive local interest, that the Government is giving some administrative functions to Provincial, Council and other local bodies.

The transfer of these responsibilities to the Regions has become realistic, even if with delay, following some orders of decentralization of administrative functions of the Government promulgated in 1972 and lately collected in an organic text with the D.P.R. (Republic President’s Decree) n. 616/77<sup>9</sup>. As far as the transport sector is concerned, article 84 transfers the functions concerning the tramways and roadways of regional interest to the regions; it concerns public transport services for people and goods (with the exclusion of post services) by using tramways, metropolitan lines and roadways. However, it is only with the law defining the order, the structure and the re-enforcement of local public transport (law n. 151/81) that we arrive at the definition of an organic and in some measure definitive framework of this sector.

---

<sup>9</sup> The global order that the DPR 616 intend to realise has been defined as follows: “for each subject the Government carry on the role of legislation and general planning, the region of legislation and specific planning, the minor territorial authorities (province and council) a role of administration organically defined” (Bobo e Pastori 1994).



The law 151 fixed the principles that the regions should follow for the exercise of the legislation and administrative power concerning the LPT. Article 1 (comma 1) defines the juridical description of the LPT services<sup>10</sup> specifying that local transport services that are exclusive competence of the Government (typically the railway service) are excluded from this category, while comma 2 of the same article, specify that the regions delegate, to the local bodies and their consortium, the execution of the administrative functions. Article 2 establishes that the planning functions of the regions have the purpose of creating a direct correlation between “economical development, territorial order, and transport organization” inside an integrated framework of modalities and infrastructure. Concerning the legislative power, article 3 establishes that the Regions have the following responsibilities:

- define the territorial limits of the traffic zones<sup>11</sup> based on criteria that take into account the needs of the territory organization and the mobility;
- define the guidelines for the organization and services structure;
- fix the criteria for the elaboration of the “traffic zones plan” made by the local authority, in order to guarantee coherence with the regional transport plan;
- promote inside each zone the creation of a consortium of the bodies for the exercise of administrative functions related to the LPT;
- encourage the circulation and the use of public transport systems in the urban center;
- define the rules for participation in the Regional Integrated Transport Plan (PRIT);
- establish the sanctions to be applied to the traveller for irregular travelling documents.

It is worth mentioning that in reality the administrative definition of the traffic zones has always prevailed and they have often been identified with the provincial territory. The definition of functional zones, i.e., coherent with what is defined by the law, has often been made only as informative support for the regional programming and planning. The situation that was consequently created was a complete overlaying of territory of the Province, traffic zone and consortium service area<sup>12</sup>; this situation could cause some problems where the map of the institutional territory differs greatly from the daily transport functional zone<sup>13</sup>.

---

<sup>10</sup> These are the services normally used for transport of people and goods made continuously or periodically, with defined itineraries, time, frequency and tariffs and non differentiated offer.

<sup>11</sup> For traffic zone it is intended the “territorial zone inside which it is carried out an integrated public transport service co-ordinated in relation to the mobility needs, with particular care to the work, school and tourist needs.

<sup>12</sup> The constitution of consortium among territorial authorities for the administration of the LPT services is tied to the definition of traffic zones. But the article 3 does not identify the consortium with the zone area; however this is what has become common practice.

<sup>13</sup> In these contests, spill-over effects may occur that can create noticeable problems of services organisation and public resources allocation. The most evident effect is due to the high presence of non resident users in the peak hours, particularly in city centres that attract many visitors. This phenomenon obliges the public transport companies to enlarge the service capacity in order to satisfy the request of resident tax

Further on we will go back to this aspect and discuss some recent actions of the National Antitrust Authority concerning the need to configure markets where the LPT companies are requested to operate outside the administrative borders, as these are not necessarily matching with the ideal zones of the users.

With regard to the financing system of the companies operating in this sector, very often they cannot cover the supply costs due to the high operating costs typical of the provision of LPT services and the low tariffs applied in order to insure that the obligation of universal public service is fulfilled. For this reason the Government is often subsidising the transport operators to allow them to achieve an economic-financial equilibrium. In Italy until a few years ago, the Government has made up part of the deficit created by this sector by subsidising the transit networks with funds properly created for this purpose, defined as the FNT (National Transport Fund). The FNT was established by article 9 of the law n. 151/81, starting from the financial year 1982, with the intention of correcting the frequent ex-post subsidization action carried out in the past which did not offer any incentive to efficiency. Indeed, on the contrary, it was creating a high waste of resources which were often the cause of high deficit and financial crisis that the operators had to face in the past 10 years<sup>14</sup>.

The Government subsidy was defined by a fund transferred ex-ante to the FNT (the amount and coverage of which had to be specify in the financial law); and a subsequent distribution among the Regions according to the criteria defined by the Minister of Transport on the basis of the dimensions of the transport service provided, the characteristics of the territory and the economical conditions of the companies. The contribution for the operating costs (together with the one for the investments)<sup>15</sup> was distributed from the region to the companies supplying the services. The distribution was made directly or through the local authorities and their consortium that have administrative activities, in order to allow the coverage between costs and proceeds. It was also specified that any eventual loss due to expenses not strictly pertaining the authorised routes were still

---

paying citizens. This increases the average costs in the long term and therefore determines a re-distribution from the tax-payers citizens to the non resident ones.

<sup>14</sup> As a consequence also of the management of the LPT system that had the characteristic, at least until the latest decree law (D.L.) n. 422/97, to have mainly social scope and not caring about the efficiency aspect, but more than anything to guarantee the citizen mobility and to sustain the level of employment .

<sup>15</sup> Concerning the contributions defined for investment in the purchasing of railways material, building and restructuring of infrastructures and fixed assets, control technologies and vehicle depots, the article n. 11 established the constitution of a special fund at the Ministry of Transport. This fund had to be distributed among the different Regions according to the population density, the traffic flow, and the plans for the development and the order of the territory; the distribution from the regions to the local authorities or directly to the LPT companies was bound to the condition of not being higher than 75% of the allowed expenses, except the possibility of the region to increase this amount using its own funds.

charged to the single companies, which had to stretch to make the budget balance within a maximum term of five years.

During the years following the law n. 151/81, in spite of what was clearly defined by this law, not only did the companies not manage to reach the equilibrium of their balance sheets, but as can be observed from table 2, the deficit situation of the companies got worse over time, in spite of the several economic and financial actions subsequently taken by the Government in order to allow the balance at least of a part of the deficit of LPT companies<sup>16</sup>. It is worth underlining that these actions merely had a “stop gap” effect, as they were taken in a very disorganised manner with no co-ordination, mainly for emergency rather than for a stable balancing of the budget in the long run.

A particular point concerning this fragmentary law evolution that has covered the LPT field throughout the 1980's and the first part of the 1990's, is the law n. 158/90. With this, a gradual process of granting financial responsibility to the field operators (the regional and local planners and consequently the firms supplying the LPT services) has started and was subsequently completed with the radical and organic reform from 1995 till 1997, for which primarily purpose was to eliminate the x-inefficiency<sup>17</sup> that typically characterises the current management.

Before law 158/90, the funds established by the regions in their budgets as contribution to exercise and investment expenses could not, by law, be lower than the yearly amounts that they were obtaining from the Government through the FNT and the investment fund in the LPT sector, that assumed therefore the form of special bond funds. This aspect has been cancelled by law 158/90 that established that all the financial funds defined by the Government legislation concerning aspects of regional interest should go to the National Common Fund. (ex art. 8 law 281/70). In this way the legislators tried to give to the regional authorities a higher incentive for budgeting policies concerning the use of the funds in the LPT sector. In fact as these funds could be allocated to other scopes, the cost-opportunity of an inefficient use increased significantly stimulating the regions to become a more efficient regulator.

---

<sup>16</sup> From this point of view it is important to bear in mind the law n. 18/87 defined the balance of the residual deficit of the transport companies from 1982 until 1986 with a Government contribution of 80% and the law 403/90 that allowed the local bodies and the regions to sign ten year loans to cover the deficits of the years 1987-1990. Further intervention was introduced with the D.L. n. 485/92, converted into law n. 32/93, and the D.L. n. 326/94, all with the scope of partially covering the old deficits by the definition of extraordinary Government funds.

<sup>17</sup> As regards the x-efficiency concept, see the pioneer contribution of Leibenstein (1966).

**Table 2 - Estimated deficits of the LPT companies operating in the Regions with an ordinary statute (thousand millions lire)**

<i>Year</i>	<i>Total expenses</i>	<i>Total proceeds</i>	<i>FNT contributions</i>	<i>Special State contributions</i>	<i>Residual Deficit</i>
1987	6,788	1,843	4,052	-	893
1988	7,387	1,924	4,214	-	1,249
1989	8,158	2,045	4,020	285	1,809
1990	8,859	2,041	4,201	481	2,136
1991	9,523	2,266	4,411	258	2,588
1992	9,809	2,515	4,764	-	2,530
1993	8,498	2,172	5,009	380	937
1994	8,364	2,357	5,061	-	946
Total	67,386	17,164	35,731	1,404	13,087

*Source:* Ministry of Transport and Navigation (1997)

Globally, however, we can conclude that all the efforts taken during the first part of the nineties that tried to balance the accounts throughout the sector had only a partial effect as they manage to reduce the build-up of the deficit (see table 2, years 1993-1994), but never managed to bring its value near to the balance. The structural nature of the unbalanced budget of the this sector has been apparent to the government authorities dealing with the public transport, and it is reasonable to believe that further reductions of this deficit would become more and more difficult to handle without any deep reforms, or eventual increase of the public funds. It was necessary to interrupt a situation that became more and more unbearable, that carried on for over 15 years and that periodically received Government action to partially repair the deficit. If we add to this the problem of the public transit systems that are increasingly failing to satisfy the local mobility requirements, for which we will give more details in the following paragraph where we analyse the evolution of the transport demand, it is easy to perceive that the problem was not solved with a simple rationalisation of individual aspects or a suitable mix of interventions on specific questions. The matter was indeed an institutional design problem requiring a structural re-organisation of the rules regulating the LPT sector.

The reply to this need of radical change was the Local Transport Reform, initiated with the law 549/45 granting the Regions the financial autonomy for LPT subjects starting from 1996 and completed with the decree law 422/97 that has transferred to the regions all the competence for local and regional transport.

### **3. Economic analysis: the critical aspects**

In the past 5 years the Italian legislators had started the reform process with the attempt to reorganize the LPT system that for many years had fallen into a deep functional, economic and managerial crisis. Before the introduction of the recent actions mentioned above, of which the innovative aspects will be described in the next paragraph, the LPT sector appeared to be trapped in a loop where the insufficient economic resources, mainly public, were followed by a continual deterioration of the quality of the service proposed, by a loss of demand, and an increase in the deficits.

Among the causes of these severe crisis, a significant role can certainly be attributed to the poor management and inefficiency of the offer largely caused by the institutional and legislative order that did not provide adequate incentives to the companies supplying the transport services. In addition to the poor structure offered by the public service, there has been also the high tendency of the population to make an ever-increasing use of the car, due to the evolution in the individual needs, causing a reduced use of local collective transport<sup>18</sup>. Hereafter, we will try to give a broad picture of the difficulties that for several decades were typical of the local public transport in our country and that only after the introduction of the latest legislation rules (law n. 549/95, D.L. 422/97 and D.L. 400/99) have started to show some signs of recovery. In particular, an analysis will be made, recalling the more significant statistical data; this analysis, according to most observers<sup>19</sup>, is showing the most critical aspects of the system, that is the increased volume of public funds absorbed by the sector (section 3.1), the shift of the local mobility demand towards the individual private transport (section 3.2), the limited increase of tariffs (section 3.3) and the unfavourable trends that appears from the indicators related to the costs and the productivity levels of the LPT firms (section 3.4).

---

<sup>18</sup> This phenomenon represents a historical trend that is common to all western countries, but that assumes in Italy particularly severe aspects, considering the dramatic drop in the quality of life in our city centre due to the heavy traffic conditions.

<sup>19</sup> It is referred, among the others, to CER (1997), Federtrasporto (1994, 1997, 1999) and CRN (1999).

### *3.1. Public expenditure in transportation sector*

Between 1985 and 1994 the public expenditure has represented without doubts a declining quote, from 15.8% to 12%, of the total costs for the mobility<sup>20</sup>. However, in 1994 the public expenditure for transports, equivalent to 45.400 billions lire, still represented 2.77% of the GDP and 6.32% of the global costs of the public administration net of interest. In the early 90's the public expenditure for mobility in proportion to the GDP was nearly 3%, with short term variations mainly due to cuts, blocks or deferment in the expenditure applied by the financial law, actions connected, or other "public finance manoeuvres".

What is more relevant in this context is the fact that the mainstream collective transport (railways, local public transport<sup>21</sup>, marine and air services), had for years represented an important fraction of the global public expenditure for the mobility in any case always more than 50% (see table 3). It is the collective transport which absorbs public funds, that as GDP quote are higher than the European average, but still not sufficient to cover the costs of the sector, whose deficit in 1994 was estimated to around 1,360 billions lire. Also it is significant to notice, for the purpose of our analysis, that this result is coming from a positive value of 2,000 billions in the motorway sector and about 640 billions for the airport service, against a negative value of over 4,000 billions lire in all the other sectors with 1560 assigned to the public companies dealing with the local transport and at least 300 to the railways operating under Government concession and management on an extra-urban scale. Also, assigning the funds paid by the Government to the State Railways for the public service costs (about 2,500 billions lire) and the operating expenses to maintain open the low traffic lines (about 1,100 billions) to the transport of regional and local interest, and considering the expenses of Council and Province for the roads (over 3,000 billions lire) it is possible to see how in 1994 the local mobility was absorbing 34% of the public resources established for the collective transport sector. Finally we should not forget that, of the total amount of the public funds given to the mobility about 2/3 has covered the current expenses, while only 1/3 has been allocated to the improvement and development of the infrastructures; this is a disproportion that is particularly high as for the expenditure of local bodies, of which the infrastructure competence boils down to the provincial and council roads.

---

<sup>20</sup> The concept of mobility includes the transport services, the infrastructure that these services are requesting, the police and vigilance services, and accessory services such as the vehicle licensing authority, etc. Concerning the meaning of public expenditure used in the text, the reference is to the expenditure (direct or under the form of transfers) of Government and local authorities.

<sup>21</sup> Relative to the data indicated here, the LPT sector includes the urban and extra-urban bus lines, the tramways, the subways and the taxi.

**Table 3 - Public expenditure in the collective transportation sector:  
years 1990-1994 (thousand millions lire)**

Type of Service	1990		1991		1992		1993		1994	
	Value	%	Value	%	Value	%	Value	%	Value	%
State Railways	11,790.6	27.9	11,351.3	26.9	9,989.3	26.0	17,218.1	34.9	15,249.2	33.5
Railways in govern. conces. and managem.	1,468.2	3.4	1,402.3	3.3	1,355.6	3.5	1,400.4	2.8	1,279.3	2.8
LPT	6,330.2	15.0	6,631.4	15.7	6,869.5	17.8	8,056.4	16.4	7,162.3	15.7
Inland navigation	138.5	0.3	207.9	0.4	175.2	0.5	190.8	0.4	156.4	0.3
Maritime navigation and harbors	2,090.6	4.9	2,653.6	6.3	2,252.9	5.8	2,134.3	4.3	1,865.5	4.1
Air navigation	1,017.5	2.4	1,121.9	2.6	1,197.1	3.1	676.0	1.4	796.9	1.7
Total	22,893.3	54.2	23,448.1	55.6	21,914.0	57.0	29,770.7	60.5	26,599.9	58.5
Total in percentage on the GDP	1.75		1.64		1.45		1.92		1.62	

Source: CER (1997)

From here the necessity has arisen to take a decisive action for reducing the level of public expenditure, for the balance of the old deficit that has become unacceptable in view of the present prerogative of the public finance; this goal could be reached with interventions focused to address the different LPT compartments towards a structural balancing of the budget, by a deep reform.

### 3.2. Modification of the mobility demand

In spite of the low tariffs (see below) and the high amounts of public money allocated to this sector, the public transport services have seen a progressive reduction of the quota of satisfied local mobility demand, as well highlighted in Table 4. This table illustrates the dynamics of the collective transport demand for the period 1991-1997 subdivided for different types of cities<sup>22</sup>.

<sup>22</sup> A concise element of evaluation is some statistical data about the number of passengers that used the urban and extra-urban public transport service in the five years 1992-1997; they were reduced to 12%, against an increase of public offer in terms of vehicles-km of 13%.

**Table 4 - Trend of the collective transportation demand by groups of cities**

<i>Size of the city</i>	Variation: 1991-1997	Variation: 1996-1997
Big cities	- 35.9% (yearly average: - 6.0%)	+1.8%
Middle size cities	- 14.6% (yearly average: - 2.4%)	-0.9%
Small cities	- 35.1% (yearly average: - 5.8%)	-1.1%

Source: CNR (1999)

One of the main causes of this phenomenon of growing marginality of the local public transport can be associated with the evolution of the mobility demand due to both the transformation of the urban structure and the variations of the available income, the type of consumer goods, and the attitudes; these factors jointly considered brought about a significant modification of users behaviour.

The population leaving the centre and the decentralisation of many functions towards the edge of city sites have in many cases rendered the shifting not easily compatible with the collective transport systems. In many Italian cities, part of metropolitan zones (Milan, Rome, Naples, etc.), one can see a large number of daily transfers by car, entering and leaving the cities, that especially for the routes outside the city centre could be served by the collective transport with difficulty. In addition to this phenomenon, we should add the new needs of mobility<sup>23</sup> that have produced a sensible increase of the “non systematic” transfers, which are more difficult to serve with the classic collective transport services that have fixed or quasi-fixed frequency and itinerary. In fact, this type of mobility, not “home based”, causes chain transfers, more distributed in the time and the space, and therefore less suitable to be satisfied by a system of collective transport of traditional type<sup>24</sup>.

Also the higher importance that the users are nowadays giving to the perceived quality of the transport system has been until now in conflict with the social vision of not very high quality, that in Italy has been typically given to the local collective transport. The quality of the service that depends on several factors such as waiting time, time spent on the vehicles, their safety, the walking distance, the comfort of the journey etc, has certainly contributed in over time to the abandonment of the collective means, particularly the road services.

<sup>23</sup> Among the factors causing the new needs of mobility, one important role should be given to the reduction of working hours and the consequential increase of the free time, in combination with the improvement in welfare and individual revenue, which has brought to an increase of the number of cars and the value of the time, and in addition to the female emancipation.

<sup>24</sup> They would request for their satisfaction new types of public services, essentially non-line services, such as call services, collective taxi, car sharing, car pooling, etc.



Recent studies about Italian realities (Naples) and European ones (Hannover, Stuttgart) have shown experimental evidence of this phenomenon, that in several cases was eliminated through the introduction of collective transport systems of better quality, in particular rail-based traction<sup>25</sup>, and by orienting the service organisation towards a higher tariffs integration and among the different ways of individual and collective transport<sup>26</sup>. This has obviously requested a suitable rationalisation of the competence pertaining to planning and financing of services and the investment policy, that our legislators have been trying to introduce through the reform process of the sector<sup>27</sup>.

### *3.3. Dynamics of the tariffs*

In spite of the high use of public resources as discussed above, it is not difficult to notice the propensity of the LPT sector to exhibit an increasing gap between costs and proceeds from traffic, responsible for the consistent build up of deficits and the high debts of some transportation companies that have requested more and more frequently a special intervention by the Government.

**Table 5 - Ratio between traffic proceeds and operating costs  
by transport modes (per cent values)**

<i>Type of LPT service</i>	1966	1972	1981	1990	1995
Railways in government concess. and managem.	33	19	16	12	18
Bus-lines	70	52	25	23	29
Tramway	61	23	21	26	32
Subway	85	72	21	30	46

*Source:* Ministry of Transport and Navigation (1997)

<sup>25</sup> This theory is confirmed also by the Italian data on total traffic for the local collective transport, that highlight from 1985 till 1996 a 36% increase of passengers per km on the metropolitan lines, cable-railway and tramway, that is in opposite trend to the 20% of global loss of the entire LPT compartment for the same period of time. (for a wider analysis see CNR, 1999). However it should be specified that often, in combination with the introduction of these new systems on rail, the local political administrations have started to block the incentive to the private traffic, by interventions such as the road pricing or the restriction of the car circulation in time and space (closed areas in certain times of the day or on some particular days).

<sup>26</sup> The modal integration of services is intended in terms of lines, timetable and interchange parking.

<sup>27</sup> At this regard it is important to underline that data relative to recent years seems to indicate that the crisis of the collective transport demand began to be reduced after 1995, when the legislative reform started. The number of passengers in the period 1995-1998 was slightly increased (+2.5%), representing however an

As shown in table 5, all the public transit services, from 1966 till 1995 have seen the progressive reduction of coverage ratio between proceeds from traffic and operating costs, with a particularly drastic drop for the bus-lines, for which the ratio goes from 70% in 1966 to 29% in 1995<sup>28</sup>. Still in 1997 the average national value of the ratio for the main council companies operating with the local collective transport, is defined below 29% against the European average of 50%<sup>29</sup>.

Looking at the entrance side, it is evident that the high difference between costs and income deriving from traffic was certainly due to the lower demand of collective transport, but partially also to the dynamics of the applied tariffs. In fact, in spite of the tariffs increase recorded for the period 1992-1997, that of the urban transports having been much higher than the dynamics of the consumer prices and also than the ones of the other transport compartments, the levels of the public transport tariffs in the Italian cities were very limited if compared with the average prices of the European cities of equivalent size. Table 6 is well highlighting this tariffs gap presenting this comparison against a sample of towns of different sizes. The data show that for all size bands the Italian cities are offering the cheapest urban public transport, either for the single fare ticket or for the monthly season-ticket. In particular, in the towns with more than 1 million population, the Italian tariffs in 1996 are even lower of 35%-40% with respect to the European average values<sup>30</sup>.

---

inverting trend.

<sup>28</sup> Considering also the same ratio only for bus lines and for each region it can be seen how the situation is more serious in some regions of the Centre and South of Italy, that cannot even reach a 20% of revenues from traffic on the total cost, and particularly even worse if we consider the only urban service (for example, Campania 9% and Lazio 16%); the situation in the North appears more stable (30% in the case of extra-urban service, 34% in the urban one).

<sup>29</sup> It is important to highlight the improvement of the ratio proceeds/costs recorded from 1995, which is exactly the year when it was noticed the trend inversion of the transport demand that was mentioned in the above note. For further details see CNR (1999).

<sup>30</sup> See CER (1997) and Federtrasporti (1999).

**Table 6 - Tariff indices in the urban transportation sector: comparison by groups of European cities (in Italian lire at the exchange rate of the 27/11/1996)**

<i>Size of the city (in terms of inhabitants)</i>	Country	Single fare ticket	Monthly season-ticket
<b>Cities with less than 500.000 inhabitants</b>			
Asti	I	58	35
Bologna	I	72	97
Copenaghen	DK	124	112
Florence	I	67	85
Graz	A	136	72
Lille	F	108	140
Lyon	F	98	138
Oslo	N	203	183
Parma	I	62	69
Salzburg	A	102	120
<b>Cities in the range 500.000 - 1.000.000 inhabitants</b>			
Bruxelles	B	100	106
Cologne	D	83	114
Frankfurt	D	133	158
Genoa	I	63	83
Hanover	D	129	-
Helsinki	Fin	124	98
Marseilles	F	98	136
Stuttgart	D	112	125
Turin	I	59	80
<b>Cities with more than 1.000.000 inhabitants</b>			
Barcelona	E	74	77
Berlin	D	185	124
London	UK	133	157
Madrid	E	74	65
Milan	I	72	101
Munich	D	156	176
Paris	F	111	95
Rome	I	72	67
Vienna	A	114	95

Source: CER (1997)

### 3.4. Costs and productivity trend

Considering what said above, we could suppose that the high deficits of the Italian LPT companies in the past decades was the direct consequence of the very low tariffs applied, in their turn resulting from the high value of “sociality” given in Italy to the collective transport of local interest in virtue of its feature of universal public service. In reality, there is a common agreement to separate our local transport from the European standards one it is not the inadequate tariffs level, and consequently the company earnings, but mainly the

structure of the costs, that are too high, and the poor level of productivity reached by this sector.

**Table 7 - Main efficiency indices for the urban bus service in Europe (yearly values)**

Country	Vehicles-km (thousands) /service worker	Operating costs (Ecu) /vehicle-km
Italy	14.77	3.02
“Other European Countries” (France, Denmark, Finland, Sweden)	19.38	2.16
United Kingdom	20.39	1.44

Source: European Commission (1998)

Table 7, elaborated for the ISOTOPE Project of the European Commission<sup>31</sup>, shows the main efficiency indicators for Italy, “Other European Countries” and United Kingdom, obtained by the experimental data (relative to urban bus service) of the information base developed inside the project<sup>32</sup>.

In terms of labour productivity the Italian sector is showing certainly lower performance (14.77 vehicles-km for each service worker) against the other European realities (19.38 for the “Other European Countries” and 20.39 for the United Kingdom); in the same direction are the data concerning the operating costs per vehicle-km (3.02 ECU against 2.16 for the “Other European Countries” and 1.44 for the United Kingdom) confirming the lower efficiency in our country from the point of view of the production of local transport services.

**Table 8 - Trend of costs and proceeds (per passenger) in the LPT sector**

Year	Costs/passenger (£/pass)	Proceeds/passenger (£/pass)	Difference (£/pass)
1992	1,888	409	1,479
1993	1,958	467	1,491
1994	1,932	487	1,445
1995	2,491	666	1,825
1996	2,365	670	1,695
1997	2,338	669	1,669

Source: CNR (1999)

<sup>31</sup> European Commission (1998) “Improved structure and organisation for urban transport operations of passengers in Europe (ISOTOPE)”.

<sup>32</sup> The data are referred to a sample of 108 European towns.

On the other hand, looking at table 8, we may note that in the same period marked by an increase of 63% of the entries from traffic per passenger (years 1992-1997) it was contemporaneously recorded an increase of costs per passenger of about 24%, which has contributed to enlarge the gap between costs and proceeds of other 13 percent points, in spite of the positive dynamics of the tariffs level. Now, as to the relatively low prices of tickets and season-tickets one should add the diffused practice of tariffs evasion<sup>33</sup>, particularly serious in the South of Italy and Rome, it should become more clear how the use of tariffs policy is not so effective in balancing permanently the deficit of the sector, like a decisive action to reduce the operating costs.

There is also a wide approval about the explanations of the unsatisfactory dynamics of costs and productivity. First of all, looking at all the compartments relevant for the local public transport an evident defect is made by the extremely high level of labour costs<sup>34</sup> that in 1995 were around 58.7% higher than the average for the whole economy, and 54.9% higher than the rest of the industry, coming to represent nearly 70% of the total production costs of LPT sector.

This difference mainly reflects the system of privileged remuneration that characterized the whole public transport compartment in the past, and that the dynamics of the salaries in the recent years, more moderate after 1990 in comparison with the inflated one and the other sectors of economic activity, has not been able to break up<sup>35</sup>. As shown in the recent "Report on the labour costs 1974-1995" presented by Federtrasporti<sup>36</sup>, generally the LPT companies did not apply a culture of incentive during the work negotiation at company level, whilst the few companies that appear to have distributed incentives are mainly concentrated in the central and north-east regions of the country, areas where in 1995 the labour productivity was undoubtedly higher than the national average<sup>37</sup>. This means that in this compartment the companies in the past had given up using one of the

---

<sup>33</sup> For example, a survey made by the *Autorità per i servizi pubblici locali del Comune di Roma* (1998), on a sample of 15 LPT companies operating in 11 large Italian cities, has highlighted that the significant reduction in the number of users recorded in the period 1991-1995 (8.3%) was certainly influenced by the demand reaction to tariffs increase in the considered period, but also by the increase of number of free riders, i.e. travellers that even without exemption are not paying the ticket.

<sup>34</sup> At this regard see CER (1997) and *Autorità per i servizi pubblici locali del Comune di Roma* (1998).

<sup>35</sup> Still in 1995 the labour cost per worker in the LPT firms that were members of the Federtrasporti Union (National federation grouping together companies and consortium for the urban and extra-urban public transport, owned by Regions and local bodies) was just below 76 millions lire per year, with extravagant and unjustified peaks for the companies operating in Rome Council, ATAC (81 millions) and COTRAL (85 millions).

<sup>36</sup> Report on the labour costs 1974-1995, Federtrasporti, page 70.

<sup>37</sup> See CER (1997).

most effective instruments to give responsibility to the employees<sup>38</sup>, as a consequence mainly of the *low degree of financial responsibility* that typically characterised both the supplier firms and the regional and local authorities in charge of programming the services, and that the recent legislative reform has tried to modify<sup>39</sup>.

The second important reasoning, meant to explain the inefficiency nested in the current management of the LPT firms and reflected in the inadequate level of costs and productivity is based on the market structure and the institutional organisation that is regulating the access to it. Particularly attention should go to the presence in the sector of an area with monopolistic structure that is too wide, in relation to the demand dimension and the degree of universality of the service, and to the *lack of competitive comparison* (during the exclusive allotment of the provision), which would be able, within a public service compartment too, to incite the pursuing of productive efficiency and service effectiveness. As can be seen in the following, in the final issue of the reform measure of the sector (D.L. 422/97) one has tried to take into account this important critical aspect, even if perhaps in a less strong way with respect to what was originally in the intentions of the legislator<sup>40</sup>.

#### **4. Start and development of reforms in the LPT sector**

Article 3, comma 1 of *law 549/1995*, which was tied to the 1996 financial law, defined for the first time the financial autonomy of the regions for local public transport, at least with respect to the elimination of the National Transport Fund (already merged into the National Common Fund, see above). This started a real reform process in the sector. Such innovation should be considered essential for the success of the reform process. The main

---

<sup>38</sup> However, it is important to highlight some innovative elements in terms of possible saving on the labour costs and productivity earnings, introduced with the law ruling the new agreement about the collective national contract for the LPT sector, signed on July 1997. The main innovation for this law is the provision for the revision of the timetable system in order to allow more flexibility in the planning on the basis of the productive requirements of the companies. It also provides for the introduction of a remuneration system based on the results premium, to be defined by the company during the work contracting, with the purpose of motivating the workers care and improving the performance of the firms in terms of productivity, quality and competition. For further details see Gorla (1999).

<sup>39</sup> See further, in particular the part where we discuss the introduction of the “*service contract*” to regulate the relation between subject provider and subject programmer of the services and the awarding of financial responsibility to the latter.

<sup>40</sup> For these aspects see a discussion further on, about the necessity to start the liberalisation of the sector and to resort whenever the presence of more than one operator will not be possible to mechanisms of “*competitive tendering*” for the allotment of services provision or “*yardstick competition*”, in order to replace the lack of a real competitive market.

effect of this change was indeed the transferring of the cost-opportunity of financial resources to regional level, where the decisions related to the programming of LPT services are taken.

The same law, 549/1995, delegated the government to emanate, within the month of may 1996 and on the basis on detailed directive principles, a decree regulating the transfer of full competence for LPT to the regions, and the re-organization of the entire sector. However, this legislative power was not exercised within the defined terms, partially due to the alternate legislation; it was the arrival of *decree law n. 422/1997*, called “Attribution of functions and tasks regarding local public transport to regions and local bodies” that finally ended the legislative reform process started two years earlier. This was the start of the active stage of the reform that requested, and partially still requires, several decisions involving the government, the regions and the local authorities. First of all the actions are defined through legislative acts at a regional level, for the definition of the functions transferred or delegated to the local bodies and the ones maintained by the region. Secondly, the actions are defined through programme agreements between regions and government, preliminary to the attribution of the delegation relative to the railway transport system.

#### *4.1. Aimed purposes and first evaluation of the results*

The principal scopes of the reform of the LPT sector started with law 549/1995 can be grouped in three main categories: 1] unification of competence (both for the planning and the expenditure decisions) relative to all the LPT modes; 2] awarding of financial responsibility to the planners (Regions and local bodies) and to the entities managing the transit service (public and private companies that have been charged with the provision); 3] promotion of the liberalization process and privatization of the sector.

Further on we will briefly discuss each of these guidelines of the reform process, also drawing at the end of the section a critical evaluation about the actual work-in-progress and the achievement of the defined goals.

#### A. UNIFICATION OF COMPETENCE RELATED TO THE DIFFERENT TYPES OF LPT

One of the main criteria which the government was waiting to follow in defining the legislative reform of the LPT sector was to join, under the same responsibility, the whole

system and existing services for local transport<sup>41</sup>. This obviously implies changes to the irrational division of programming, administrative and expenditure competencies amongst the local administration and the central government, that is the reduction of the transaction costs deriving from an inefficient institutional framework.

In particular, the aim is to transfer to regions that in the past were responsible only for road transport, also the responsibility for regional and local railway services that traditionally were exclusive competence of the Government. This is in order to concentrate in only one center the programming for the different transit systems, pointing out the trade-off between them and promoting the rationalization and the modal integration of the services supply, with consequent advantages in terms of abolition of the duplicated services and better conformance to the demand requirements. At the same time, and as a consequence, it was necessary to transfer the resources that originally were assigned to the railways in concession and government management to the regions, and also the major part of those assigned to the public service contract between Government and State Railway (FS), providing for the replacement of this latter with new service contracts signed between the regions and the State Railways.

#### B. FINANCIAL RESPONSIBILITY OF THE PLANNING SUBJECTS AND THE COMPANIES PROVIDING SERVICES

The second important innovation that the recent reform tried to introduce in the organization of local public transport goes towards the direction of increasing the financial responsibility of all of the subjects operating in this sector, with the purpose of making a better selection of the public service compartments that best deserve to receive subsidies<sup>42</sup> and promoting the improvement of productive efficiency by the transportation companies.

---

<sup>41</sup> It is relevant at this point to underline the fact that in comparison with the law n. 151/81, the new D.L. n. 422/97 provides a wider juridical definition of the local public transport as follows: "It should be considered regional and local public transport the transport services of goods and persons [...] that includes all the systems of mobility by road, sea, lagoon, lake, river and air, that operate continuously or periodically with defined itineraries, timetables, frequencies and tariffs, at generalized access, inside a territory that has normally a regional or infra-regional dimension.

<sup>42</sup> D.L. n. 422/97 defines these categories as "minimum services", a definition that appears quite ambiguous, as specified in article 16 (comma 1): "the minimum services should be defined taking into account the integration of the transport ways, the school and work commuters, the easy use of the services by the users for access to the different administrative, health and cultural services, and the needs of traffic and pollution reduction. In practice the definition of minimum service should correspond to the level of service that each community wants to make universally and effectively accessible, normally at non-market special tariff conditions, for each of its member in virtue of her/his belongings to it.



This goal could principally be reached by trying to combine as much as possible the subjects that are planning the services with those that find the financial funds, being this a fundamental condition to make binding any constraint for an efficient use of the resources by the local authorities. Here comes the necessity to eliminate the transfers from the center and to replace them with a start of taxation autonomy at regional level, as clearly defined by law 549/95<sup>43</sup>, with the central government maintaining the solidarity task of providing an equalization in favor of the regions with amounts of taxable values insufficient to maintain an adequate level of costs.

Secondly, and certainly one of the main tools for an effective re-organization of the LPT sector, the reform dictates that the relations between a planning subject and a service provider subject are regulated through a well defined *service contract*<sup>44</sup>. The goal is to avoid the repetition of such economic-financial deficits phenomena as those occurred in the past, by endowing these contracts with certain financial coverage in the balance sheets of the local authorities in charge of the planning, and also with mechanisms being able to stimulate an efficient performance by the transit service providers<sup>45</sup>.

It is worth underlining the innovative aspect of the service contract within the local public transport scenario. Indeed, this may be appreciated for the merit of giving transparency to the relationship between the local authority that is requesting the service and the firm supplying it, making explicit the profile of the rights and duties of the involved

---

<sup>43</sup> Which defined, in addition to the abolition of transfers from the National Common Fund, also the replacement of these last with a participation to the yield of the fuel taxes (300 lira per liter), also giving the regions the possibility of increasing these taxes (to a maximum of 30 lira per liter, increased lately to 50 lira per liter with the law 662/96 connected to the financial law of 1997).

<sup>44</sup> According to article 19 (comma 3) of D.L. n. 422/97, the service contracts should define: the period of validity, the characteristics of the services provided and the exercise program, the minimum quality standards of the service (age, maintenance, comfort, vehicle cleaning, regular frequencies); structure of the tariffs applied; amount and payment terms of the public subsidies, and also eventual adjustments consequent to any changes in the tariffs structure; instructions for any modification of the contract in progress; guarantee provided by the transportation company; fees in case of non compliance with the contract terms; the procedure for the revision of the relations in case of highly irregular level of the provision in the period of validity of the service contract; the obligation to apply the collective labor contracts.

<sup>45</sup> A crucial condition in this way is to avoid the “*cost plus*” mechanism concerning the subsidization. The incentive contract should define a reimbursement to the firm on the basis of a standard (that is an a priori estimation of the operating costs) and should not provide ex-post adjustments in case of deviations of the real costs from the estimated ones (“*fixed price*” mechanism), with the only exception being the inflation adjustment; in other words, the company should guarantee the possibility to be the “*residual claimant*”, that means to appropriate the entrances derived from productive efficiency recovery (for a wider theoretical treatment of the topic of the incentive regulatory schemes it is referred to the Laffont & Tirole (1993)’s handbook). In this direction, the law n. 549/95 defined a minimum level of coverage of the operating costs with traffic proceeds (35% to be reached within the year 2000) below which the service will not be admitted to benefit from the regional fund, in order to eliminate the unnecessary services, if that is the case replacing them with other cheaper forms of mobility aid.

parts in order to guarantee the respective areas of autonomy; the planning one of the local body and the productive one of the supplying company.

### C. LIBERALIZATION AND PRIVATIZATION OF THE LPT SECTOR

The achievement of the goals peculiar to a service contract effectively oriented around the efficiency incentives is based on the following conditions: first of all, the presence of mechanisms to define subsidies and tariffs that, applying the “price cap” and “transfer cap” formula, include incentives to improve the production efficiency and the service quality<sup>46</sup>; secondly, the creation of adequate control systems regarding the application of the contract content and related punitive sanctions schemes to be applied in the case of performances not conformable to the contract<sup>47</sup>; finally, but certainly not less important, the existence of a context where the interests of the parties are well distinct and equally guaranteed. This last condition occurs in particular:

- when there is no owner relationship between the local body and the firm supplying the transit service. Otherwise there is the objective risk that the company, from one side continues to be conditioned from the direct and special intervention of the commissioning institution, and on the other side could benefit from the ex-post balance of eventual management deficits by the public shareholder;
- when the company producing the service has been selected on the basis of a competitive comparison. Lacking a competitive mechanism (before the issue of the contract, and, in prospect, when this expires) there are again the conditions for an objective mixture of the interests between the local authority and the firm, even without owner relations between them. The consequence would be a reduction of the substantial strengths of the service contract intended as an instrument to separate the roles and responsibilities and also able to orient the parties’ behavior towards higher levels of efficiency and quality.

---

<sup>46</sup> It should be underlined that the explicit introduction of the quality in the transfer cap and price cap formulas plays a fundamental role: otherwise the company could balance the binding effects of economic constraints on the remuneration of productive costs with a lower quality of the service, with a consequent damage for the users. For a theoretical discussion of the topic of quality regulation see Petretto (1993, pages 226-228) and Tirole (1988, pages 100-103).

<sup>47</sup> Generally the schemes of incentive regulation provide that the responsibility concerning controls and sanctions are attributed to a subject independent from the local authority commissioning the public service. This is necessary: both to avoid forms of asymmetry in favor of the local institution, which occur when this last simultaneously covers the roles of contracting party and controller, and to protect the user from service decays that occur whenever the company and the commissioning authority practically exercise the co-management of the contract.

From these evaluations came the legislator intention to start the privatization process of the companies supplying LPT services and to promote (whenever possible) the overcoming of the monopolistic structure and the introduction of competitive procedures for the allotment of the provision (establishing a preference for tender calls and against direct allotments). In other terms, the reform goals include the improvement of the productive efficiency, by means of a regulation that provides adequate incentives to the monopolist behavior. Also they aim for the improvement of the allocative efficiency through the introduction of competition, in an actual or potential form according to the circumstances, inside a sector such as the Italian LPT, which was traditionally supported by the service supplied by consortiums or firms owned by the local bodies or by the concession of the provision to private companies through direct negotiation, appearing in such a way like a local monopolies system where even the weakest form of competition has been missing.

#### D. ACHIEVED RESULTS

The complete evaluation of the results obtained with D.L. n. 422/97 will probably be premature<sup>48</sup>. The law is in fact limited to define issues of general order which are carried out by appropriate regional laws that should be introduced within six months from the approval of the reform. However, it could already be stated that for the first two goals – competence unification for the different transport modes and awarding of financial responsibility to the subjects operating in the sector – the reform appears suitable to produce some good results. On the contrary, with regard to the third goal – introduction of some forms of competition and reorganization of the monopoly zones – this still seems far away and above all the one for which the formulation of the decree law appears to be most inadequate.

The rationalization of the competence between Government and local administrations, and in particular the transfer to the regions of the competence regarding railway services, represents without any doubt an important step towards the planning of the local transport public service in order to minimize the services duplication and gain the benefits of a wider integration among the different transport ways. It should however be underlined how also this step shows still difficulty in being carried out. In fact, until today, only a part of the maturity that should allow the decentralization of the competence on railways has been

---

<sup>48</sup> It should be considered that the first evaluation relative to the effects of the local transport reform in the UK date back to the second half of the eighties (Kilvington and Cross, 1986; Preston, 1988; Vickers and Yarrow, 1988) for the stage started with the Transport Act in 1980, and to the nineties (among the others Bowers, 1994 and Bishop, Kay and Mayer, 1996) for the stage started in 1986.

respected and consequently the new service contracts between regions and FS, planned for 31<sup>st</sup> October 1998, have not yet been stipulated<sup>49</sup>.

In relation to the second guideline of the reform process, the elimination of the National Transport Fund and the simultaneous attribution to the regions of a quote of the fuel tax yield (300 lira per liter), plus the possibility to increase these taxes by 50 lira per liter, are certainly useful actions to obtain a more responsible financial behavior on the part of the local bodies. In this way the financial responsibility of the local administrations can facilitate a more rigid definition of the proper public service area, or in any case contribute to a better use of the public resources and therefore to a service supply that is wider and richer in quality<sup>50</sup>. Also, the contracting process as regards the relations between commissioning bodies and supplying companies is showing positive signs. From data collected as a survey to evaluate the status of the reform<sup>51</sup> it emerges that nearly half of the local authorities (Council and Province) have already undertaken to sign the service contract, or at least to prepare it. It seems rational to expect from this evolution of the institutional framework some recovery of productive efficiency that will be higher as more the subsidies given to the supplying companies are tied to an incentives system depending on the achievement of well defined management results<sup>52</sup>.

Concerning the start of the liberalization process, in spite of many efficiency indicators highlighting the damage caused by an organization irrationally poor in competitive stimuli, the public transit systems are proceeding very slowly towards an organization more coherent to the market principles. In fact the actual configuration of the sector is producing

---

<sup>49</sup> See Federtrasporto (1999).

<sup>50</sup> It should however be highlighted how the poor clearness as regards the definition of the “minimum services” (charged to the Regions) and “additional services” (charged to the Council), in addition to the ambiguity about their real nature, can significantly reduce the positive effects deriving from the increased financial responsibility of the local administrations, reproducing conditions similar to the ones characterizing the previous legislative framework. These ambiguities are still evident in the regional laws for the carrying out of the reform where there still exists a high level of uncertainty about the criteria and time to identify the “minimum services”. Only a few regions (Friuli Venezia Giulia, Veneto and Puglia) relate the identification of the resources with the services considered essentials. The other regional laws, on the contrary, are going in the opposite direction, defining the level of the services on the basis of the financial resources available.

<sup>51</sup> See “TPL 2000 - Monitoraggio dello sviluppo del trasporto pubblico locale”, n. 1, May 2000.

<sup>52</sup> A general discussion of the advantages in terms of efficiency recovery achievable through the introduction of incentive mechanisms in the contract that regulates the relationships between the commissioning body and the company supplying the transit service is provided in Piacenza (2000, chapter 2). The study illustrates the results of some econometric works based on experiences in this direction carried out in Norway (Dalen & Gomez-Lobo, 1996) and in France (Gagnepain, 1998 and Gagnepain and Ivaldi, 1998 and 1999). At the same time, it highlights the importance to evaluate the suitability (in terms of incentive content) of the contractual structures introduced in Italy by the different regional laws in applying the leading principle of the LPT reform during this transition phase towards a more efficient regulation framework for the sector.

returns and benefits (even if in some case illusive) for many of the involved categories, making less interesting the incentives for the introduction of an effectively competitive reform, by which even categories with feebler voice could benefit. More directly, the main obstacles to the introduction of possible competition in the local transport are the forms of interest association still widely present in the sector as in the grand part of the public transport: the convergence of the interest of the monopolists (municipal companies and private firms with concessions); employees (wages and salaries relatively higher than the other sectors); “blind” users (which appreciate the low tariffs and that understand only in part the costs that they pay as tax-payers).

To resume, the positive aspects of the reform seem limited to the higher responsibility binding the service planning due to both the more pressing tie in the balance sheet of the local administrations and the more rational grouping of the competence concerning local transport. What appears less satisfactory are the actions taken in order to make the service offered more competitive. The incentives for overcoming the monopolistic organization and for introducing forms of administrated competition (that is competition “for the market”) in the service allotment procedure that were somehow traceable in the inspiring principles of the reform (law n. 549/95) and in the different drafts of the decree law, became progressively much weaker during the discussion that brought in the D.L. n. 422/97. Because of the not very prescriptive content characterizing this decree, at present the space for a more competitive vision of the reform mainly depend on a “virtuous” carrying out by the regions.

#### *4.2. Intervention of the National Antitrust Authority*

With a note of February 1998, the National Antitrust Authority (AGCM) declared, for the first time, its opinion about the changes to make to the existent regulation framework<sup>53</sup>. Successively, the Authority returned to the subject to express an opinion about the “*measures of revision and replacement of the administrative concessions*”<sup>54</sup>, coming to define a complex of corrective actions turning around the principle that the provision of the service should be as competitive as possible and less expensive, and should also include between the costs those associated to the regulation.

In this perspective the restrictions of the competition determined by the regulation framework can only be “proportional” to the achievement of the public goal. The direct

---

<sup>53</sup> See the note dated 27 February 1998 about the *Reform of the Local Public Transport*, Gazette n. 8/98.

<sup>54</sup> See the opinion dated 28 October 1998 about *Measures of Revision and Replacement of the Administrative Concessions*, Gazette n. 42/98. At this regard see also D’Alberti (1998) and Cispel (1997).

management on a shoestring of the local bodies and the direct allotment of the transportation service should therefore be considered as residual hypothesis, adequately motivated anyway. Briefly, the suggestions expressed by the Authority could be defined in the four following points.

#### A. RECONFIGURATION OF THE MARKETS BEYOND THE ADMINISTRATIVE LIMITS

Relative to this aspect, the note about the D.L. n. 422/97 and the following opinion expressed by the Authority concerning the actions of revision and replacement of the administrative concessions should be integrated with some considerations of the Antitrust Authority in two other notes, related to the hypothesis of modification of the law n. 142/90 concerning the regulation of the whole local public services compartment. In particular, the discussion that aims to underline the benefits deriving from the extension of the presence of the public transit companies in markets that are outside the geographical area of competence of the commissioning administrative body, without however neglecting the problems linked to such a redefinition of the market limits.

From one side, one can in fact observe that the administrative limits of the Province do not necessarily match with the ideal zones of the transport service users, and that therefore the scale and coordination economies typically characterizing the bus-lines compartment can be better exploited by overcoming these limits and creating transport networks at an inter-provincial level<sup>55</sup>. On the other side, however, we have also to consider the risks for the competitive comparison deriving from the possibility that the local transportation companies drag exclusive advantages of fiscal or administrative type into competitive markets, or (more probably) into markets where the access will be ruled by tendering competition<sup>56</sup>.

#### B. PROMOTION OF COMPETITION IN THE MARKETPLACE

The policy focused on the introduction of competition in the marketplace theoretically implies having a structure of the transit service provision characterized by a potentially large amount of firms operating in the same market, none of them able to obtain “extra-profit”, since this type of configuration should bring to a Pareto-efficient allocation of resources and productive inputs. On the practical side, to decide for this industry structure

---

<sup>55</sup> See what was mentioned above about the definition of traffic zones, page 5.

<sup>56</sup> See, among the others, Heimler (1998) and Fattori (1999).

will mean promoting the liberalization and progressive deregulation of the sector at any possible time, in particular by identifying the road sections where it is not necessary to impose universal service obligations or grant subsidies (sections at high demand profitable also in the presence of eventual tariffs cap, such as the connections between the city center and the airport).

It is probable that the road sections where the presence of many transport operators in competition will actually be possible are not numerous<sup>57</sup>. In some regions however, sections at high demand or where the demand could reach significant levels through suitable actions (stop tariffs, regulation of the individual transport access, preferential lanes, etc) could become quite considerable (in Lombardia, for example, up to a ¼ of the routes). In all these cases a regulation focused on guaranteeing information about timetable, frequencies and tariffs as well as adequate standards about safety and quality, could also prevent the risk of service decays due to the presence of several companies operating in the same section and consequential difficulties of their coordination<sup>58</sup>.

### C. SERVICE ALLOTMENT THROUGH COMPETITIVE TENDERING

Whenever a real market competition is not possible, the Authority identifies the ideal process for the service allotment with competitive tendering. The exclusive direct allotment becomes then a very limited possibility. In this case the lack of a real competitive structure could be replaced by the efficiency incentives deriving from the competition threat made possible through the short term attribution of the service provision by tendering mechanisms<sup>59</sup>.

In these circumstances the provision, defined into details in the service contract, will be attributed to the company that engage to provide the service at the lowest subsidy (given the fare tariffs) or at the lowest tariffs (given the level of subsidies). The characteristics of the public transit service, in fact, allow the local administration to clearly define the requirements for the company offering the service. Only in case that the administration is not able to contractually define the service requirements (for example, not able to include in the contract the quality requirements) could it be more efficient to allot the service

---

<sup>57</sup> Considering the diffused presence in the LPT sector of economies of scale and scope, difficult to catch inside a system based on the presence of several operators.

<sup>58</sup> See to this end the controversial evaluations of the experience in the UK where deregulation allowed in the extra-urban transport the presence of several operators on the same road section (among the others, Armstrong, Cowan and Vickers (1994), Bowers (1994) and Bishop, Kay and Mayer (1996).

<sup>59</sup> To confirm this, there are the results of the UK experience, positive for the urban transport where they applied the competitive tendering mechanism. At this purpose see again Armstrong, Cowan and Vickers (1994), Bowers (1994) and Bishop, Kay and Mayer (1996).

management directly to a public firm owned by the commissioning body. Indeed, in spite the fact that the private company could find a big incentive for innovation due to the greater possibility to take to oneself the profits in presence of a non detailed service contract, the tariffs regulation could cancel this incentive or, even worse, lead the private company to adopting a cost saving policy, consequently reducing the quality of the service<sup>60</sup>.

#### D. INTRODUCTION OF “YARDSTICK COMPETITION” MECHANISMS

The second instrument that the Antitrust Authority is suggesting to implement for the regulation of public transit systems is the incentive mechanism to efficiency known in the Anglo-Saxon countries as yardstick competition (that is competition based on comparisons with respect to a standard). Through this mechanism, one compares the performance of companies operating as local monopoly in territories with homogeneous “environmental conditions” and the firm showing the most efficient supply structure is prized. This is another remedy to the lack of a real competitive market. Moreover, these comparisons between the different firms’ performances should also have another function: provide relevant information for possible acquisitions by private investors, in the case a privatization process of the public transportation companies will be started, as it is desirable.

From these suggestions of the Antitrust Authority, we can conclude that in the LPT sector and, more generally, in that one of all the public services at local level, even if in most cases it is not possible to operate with several companies in the same market, the competition can still be promoted using methods that simulate the effects of a real competitive structure; creating competition “for the market” (resort to tendering for the allotment of concessions) or based on comparisons of the results obtained by monopolistic structures with homogeneous characteristics (yardstick competition)<sup>61</sup>. Such mechanisms, facilitating the spreading of information among the different local regulatory authorities,

---

<sup>60</sup> More ambitious goals could also be assigned to the mechanism of competition “for the market” than just the selection of the service provider, such as: (i) identify the most efficient configuration of the market, where there could be space for new competitors, overcoming the informational problem concerning the knowledge of the conditions characterizing the LPT networks in the different territorial areas; (ii) determinate by endogenous via the division of the road sections among the operators and the ideal zones for users, asking the operators to propose differentiated offers in relation to the different division of the network. In this way the tendering could also represent a precious instrument to overcome the administrative limits of the local transport markets.

<sup>61</sup> It could also be assumed a combination of the two forms of organized competition (the tendering and the yardstick competition), supposing, for example, that the base for the lowest bid tendering is made by the average of the subsidies (or the tariffs) proposed by the winners of the tendering called for other homogeneous services in the same territorial area (to this end see Boitani 1998).



the service users and the voters, contribute to maintain under pressure the managers of the companies producing the service and address them towards the achievement of more efficient results.

## **5. Conclusion**

The legislative reform of the local transport started with the law n. 549/95 and completed with the D.L. n. 422/97 has given the reply to the need of reorganization of the sector risen during the past decades. The strong points that have been attributed to the reform and that, at least in part, have been put in practice through the regulation at regional level, can be listed below:

- the merging of financial and planning responsibility of the commissioning bodies, that is making explicit the cost-opportunity of the supplied service;
- the attribution to a single subject of the entire planning competencies concerning the local transport, provided either on the road that by railway, in order to have a coherent offer;
- the introduction of a contractual relationship between the commissioning subject and the company supplying the service, with the inclusion of mechanisms able to stimulate the productive efficiency of this latter, in order to avoid the build up of deficits to be covered by means of additional public resources.

There are also innovative elements that at the moment appear weakened mainly due to the protection still given to the public-owned companies:

- the clear separation between the planning role and the service management role;
- the reorganization of the monopoly areas and the introduction of forms of administrated competition, by the resort to tendering procedures for the allotment of the services provision.

As we have highlighted when we analyzed the suggestions expressed on this subject by the Antitrust Authority, the introduction of competition in the local public transport mainly requires the use of tendering procedures and the “third-part role” of the subjects in charge of the regulation<sup>62</sup>, while the spaces for the real competition appear quite modest. The D.L.

---

<sup>62</sup> Namely, the local administrations have to change from commissioning-regulator-manager subjects into simple bodies commissioning the provision of transit services. Known are the restrictions to the competition - in this case to the administrated competition - that could derive from the overlapping of the three aforesaid functions (concerning this aspect see Heimler (1998)). D.L. n. 422/97, however, does not

n. 422/97 in itself does not allow to a more competitive framework of the allotments to be arrived at. However, its nature of “open” measure left space to the regions that are keen on this direction.

At present, the picture of the regional laws putting in practice the reform is not very optimistic<sup>63</sup>. Only six regional regulations (Campania, Basilicata, Emilia Romagna, Umbria, Liguria e Piemonte) provide for the generalized resort to tendering after the transition phase. The other regions continue to prefer the direct allotment of the services without limit of time or circumscribe the use of tendering procedures to a part of the services presently managed by the special (public-owned) companies. Region Lombardia is the only to have issued a regional law which plans the constitution of an Authority to guarantee the LPT service; it is an independent agency aiming, in particular, to guarantee the users rights, the observance of the service contract obligations and, through advice to the Antitrust Authority, to facilitate the respect of the rules protecting competition. Finally, only in five of the regional laws putting in practice the D.L. law n. 422/97 are included incentives for the transformation of the special companies into joint-stock companies or for their privatization during the transition stage.

At this point of the discussion it is important to underline how the opportunities offered by the privatization process should be more seriously taken into consideration, so that the process of liberalization of local public services could effectively turn into the introduction of the highest possible degree of competition. This should occur not only for fully capturing the positive effects on the firm management efficiency deriving from the existence of a real budget constraint, but above all to “create” new competitors and avoid to have at the end of the transition a tendering environment where only the special companies could participate, perhaps at most together with some bigger foreign companies<sup>64</sup>. This should be the main goal of the transitory period towards the complete reorganization of the regulatory framework for the LPT sector. Otherwise, the transition stage run the risk to become a phase at the end of which the only significant change will be a different equilibrium

---

provide for the constitution of independent authorities in charge of the regulation function, in particular for what is concerned the allotment process by competitive tendering, leaving therefore to the local administration the double role of arbitrator and player.

<sup>63</sup> For a detailed review and a critical evaluation of the regional actions to put in practice the reform, i.e., the D.L. n. 422/97, see Federtrasporto (1999).

<sup>64</sup> In this sense is not certainly comforting the episode of the tendering that Region Toscana used for the allotment of the concession of 14 inter-province bus-lines, having started in this way one rare example of “courageous” application of the reform. The tendering was originally gained by new companies. The Toscana TAR (Administrative Regional Court), however, accepted the appeal of the losing companies, and cancelled both the tendering announcement and the results of the award process. For all the year 1999, therefore, the service has been still covered by the old providers. Only then a new tendering could be carried out.

between public-owned companies and private concessionaires firms to share the monopolistic rent, still remarkably present in the subsidies. With this sad perspective, those who are hoping for a more efficient organization of public transit systems will have to be content with the rare example of the few virtuous regions that has been able to exploit the limited competitive potentialities contained in the D.L. n. 422/97.

As a positive note to conclude, we could affirm that the direction recently, even though untimely, taken by the legislator is probably going towards the requirements just mentioned above. In November 1999 *D.L. n. 400/99* was published that modified the previous 422/97: it *made compulsory* the transformation of the public companies into joint-stock companies and *imposed* the resort to tendering for the allotment of the transit service provision, included the railways, even if providing for the possibility to apply a transitory phase for the adjustment of the regional laws, that in any case must end within 31 December 2003.

## References

- Armstrong M., Cowan S. e Vickers J., *Regulatory Reform: Economic Analysis and British Experience*, Boston: MIT Press, 1994.
- Autorità garante della concorrenza e del mercato, “Misure di revisione e sostituzione delle concessioni amministrative”, *Bollettino*, 42, Italy, Rome, 1998.
- Autorità garante della concorrenza e del mercato, “Riforma del trasporto pubblico locale”, *Bollettino*, 8, Italy, Rome, 1998.
- Autorità per i servizi pubblici del Comune di Roma, *Parere su processo di trasformazione del Trasporto Pubblico Locale e sulla cessazione del CO.TRA.L.*, Italy, Rome, 1998.
- Baron, D., and Myerson, R., “Regulating a Monopolist with Unknown Costs”, *Econometrica*, 50, 1982, pp. 911-930.
- Bishop, M., Kay, J. and Mayer, C., *The Regulatory Challenge*, Oxford University Press, 1996.
- Boitani, A., “Il futuro della regolazione nel Piano generale dei trasporti”, Commissione Tecnica per la Spesa Pubblica, Ministero del Tesoro del Bilancio e della Programmazione Economica, *Nota*, 7, Italy, Rome, 1998.
- Bowers, P. H., *Managerial Economics for the Service Industries*, London, Chapman & Hall, 1994.
- CER, “Riforme a presa rapida”, *Rapporto*, 2, Italy, Rome, 1997.
- Cispel, *La concessione nei servizi pubblici locali*, Italy, Rome, 1997.
- CNR, *Il trasporto pubblico locale in Italia: analisi, prospettive e contributi della ricerca*, Progetto Finalizzato Trasporti 2, Italy, Rome, 1999.
- D'Alberti, M., “Concessioni e concorrenza”, Autorità garante della concorrenza e del mercato, *Temi e Problemi*, 8, Italy, Rome, 1998.
- Dalen, D. M. and Gomez-Lobo, A., *Regulation and Incentive Contracts: An Empirical Investigation of the Norwegian Bus Transport Industry*, Institute for Fiscal Studies Working Paper, London, 1996.
- European Commission, *Improved structure and organisation for urban transport operations of passengers in Europe (ISOTOPE)*, Transport Research, Fourth Framework Programme, Urban Transport VII-51, 1998.
- Fattori, P., “Liberalizzazione dei mercati, efficienza ed economicità dei servizi pubblici: funzionamento del mercato e tutela della concorrenza”, *Paradigma*, Milano, 12 aprile, 1999.
- Federtrasporti, *Annuario 1999*, Italy, Rome, 1999.
- Federtrasporti, *Report on the Labour Costs 1974-1995*, Italy, Rome, 1996.

- Federtrasporto, “Servizi pubblici locali: un banco di prova per la concorrenza”, *Bollettino*, 6, Italy, Rome, 1997.
- Federtrasporto, “Efficienza e sussidiarietà: il trasporto pubblico locale dopo la riforma”, *Bollettino*, 8, Italy, Rome, 1999.
- Federtrasporto, “Il contratto di servizio: norme e prassi”, *Bollettino*, 7, Italy, Rome, 1998.
- Federtrasporto, “Il trasporto pubblico locale: ricominciare da zero”, *Bollettino*, 3, Italy, Rome, 1994.
- Gagnepain, P. and Ivaldi, M., *Incentive Regulatory Policies: The Case of Public Transit Systems in France*, mimeo, GREMAQ - IDEI, Université des Sciences Sociales de Toulouse, France, March 1999.
- Gagnepain, P. and Ivaldi, M., *Stochastic Frontiers and Asymmetric Information Models*, mimeo, GREMAQ - IDEI, Université des Sciences Sociales de Toulouse, France, 1998.
- Gagnepain, P., “Structures Productives de l'Industrie du Transport Urbain et Effets des Schemas Reglementaires”, *Economie et Prevision*, 135, July-Sept. 1998, pp. 95-107.
- Gorla, G., “Trasporti Pubblici Locali”, Fondazione Rosselli, *I Servizi di Pubblica Utilità in Italia - Rapporto sullo stato e sulle condizioni di sviluppo*, Italy, Turin, La Rosa, 1999.
- Heimler, A., “Fornitura di servizi pubblici, assetti proprietari e concorrenza”, relazione presentata al convegno: *I modelli di gestione dei servizi pubblici locali*, Siena, 29 maggio, 1998.
- Kilvington, R. P. and Cross, A. K., *Deregulation of Express Coach Services in Britain*, Aldershot, Gower, 1986.
- Laffont, J. J. and Tirole, J., “The Regulation of Multiproduct Firms, Part I: Theory”, *Journal of Public Economics*, 43, 1990a.
- Laffont, J. J. and Tirole, J., “The Regulation of Multiproduct Firms, Part II: Applications to competitive Environments and Policy Analysis”, *Journal of Public Economics*, 43, 1990b.
- Laffont, J. J. and Tirole, J., “Using Cost Observation to Regulate Firms”, *Journal of Political Economy*, 94, 1986, pp. 614-641.
- Laffont, J. J. and Tirole, J., *A Theory of Incentives in Procurement and Regulation*, MIT Press, Cambridge, 1993.
- Leibenstein, H., “Allocative Efficiency versus «X-Efficiency»”, *American Economic Review*, 56, 1966, pp. 392-415.
- Loeb, M., and Magat, W., “A Decentralized Method of Utility Regulation”, *Journal of Law and Economics*, 22, 1979, pp. 399-404.
- Ministry of Transport and Navigation, *I trasporti in Italia*, Istituto Poligrafico e Zecca dello Stato, Italy, Rome, 1997.

- Petretto, A., *Mercato, Organizzazione Industriale e Intervento Pubblico*, Bologna, Il Mulino, 1993.
- Piacenza, M., *The Local Public Transportation Sector: Cost Analysis, Institutional Aspects and Incentives Issues*, Mémoire de D.E.A. "Economie Mathématique et Econométrie", Université des Sciences Sociales de Toulouse, France, September, 2000.
- Preston, J., *Regulation, Competition and Market Structure: a Literature Survey of the Fare Stage Bus Industry*, Leeds, Institute of Transport Studies, Working Paper 267, 1988.
- Tirole, J., *The Theory of Industrial Organization*, Cambridge (Mass.), MIT Press, 1988.
- Vickers, J. and Yarrow, G., *Privatization: An Economic Analysis*, London, MIT Press, 1988.

WORKING PAPER SERIES (2000-1993)

**2000**

- 1/00 *Trasferimento tecnologico: analisi spaziale*, by Mario Coccia, March
- 2/00 *Poli produttivi e sviluppo locale: una indagine sulle tecnologie alimentari nel mezzogiorno*, by Francesco G. Leone, March
- 3/00 *La mission del top management di aziende sanitarie*, by Gian Franco Corio, March
- 4/00 *La percezione dei fattori di qualità in Istituti di ricerca: una prima elaborazione del caso Piemonte*, by Gian Franco Corio, March
- 5/00 *Una metodologia per misurare la performance endogena nelle strutture di R&S*, by Mario Coccia, April
- 6/00 *Soddisfazione, coinvolgimento lavorativo e performance della ricerca*, by Mario Coccia, May
- 7/00 *Foreign Direct Investment and Trade in the EU: Are They Complementary or Substitute in Business Cycles Fluctuations?*, by Giovanna Segre, April
- 8/00 *L'attesa della privatizzazione: una minaccia credibile per il manager?*, by Giovanni Fraquelli, May
- 9/00 *Gli effetti occupazionali dell'innovazione. Verifica su un campione di imprese manifatturiere italiane*, by Marina Di Giacomo, May
- 10/00 *Investment, Cash Flow and Managerial Discretion in State-owned Firms. Evidence Across Soft and Hard Budget Constraints*, by Elisabetta Bertero and Laura Rondi, June
- 11/00 *Effetti delle fusioni e acquisizioni: una rassegna critica dell'evidenza empirica*, by Luigi Benfratello, June
- 12/00 *Identità e immagine organizzativa negli Istituti CNR del Piemonte*, by Paolo Enria, August
- 13/00 *Multinational Firms in Italy: Trends in the Manufacturing Sector*, by Giovanna Segre, September
- 14/00 *Italian Corporate Governance, Investment, and Finance*, by Robert E. Carpenter and Laura Rondi, October
- 15/00 *Multinational Strategies and Outward-Processing Trade between Italy and the CEECs: The Case of Textile-Clothing*, by Giovanni Balcet and Giampaolo Vitali, December
- 16/00 *The Public Transit Systems in Italy: A Critical Analysis of the Regulatory Framework*, by Massimiliano Piacenza, December

**1999**

- 1/99 *La valutazione delle politiche locali per l'innovazione: il caso dei Centri Servizi in Italia*, by Monica Cariola and Secondo Rolfo, January
- 2/99 *Trasferimento tecnologico ed autofinanziamento: il caso degli Istituti Cnr in Piemonte*, by Mario Coccia, March
- 3/99 *Empirical studies of vertical integration: the transaction cost orthodoxy*, by Davide Vannoni, March
- 4/99 *Developing innovation in small-medium suppliers: evidence from the Italian car industry*, by Giuseppe Calabrese, April
- 5/99 *Privatization in Italy: an analysis of factors productivity and technical efficiency*, by Giovanni Fraquelli and Fabrizio Erbetta, March
- 6/99 *New Technology Based-Firms in Italia: analisi di un campione di imprese triestine*, by Anna Maria Gimigliano, April
- 7/99 *Trasferimento tacito della conoscenza: gli Istituti CNR dell'Area di Ricerca di Torino*, by Mario Coccia, May
- 8/99 *Struttura ed evoluzione di un distretto industriale piemontese: la produzione di casalinghi nel Cusio*, by Alessandra Ressico, June
- 9/99 *Analisi sistemica della performance nelle strutture di ricerca*, by Mario Coccia, September
- 10/99 *The entry mode choice of EU leading companies (1987-1997)*, by Giampaolo Vitali, November
- 11/99 *Esperimenti di trasferimento tecnologico alle piccole e medie imprese nella Regione Piemonte*, by Mario Coccia, November
- 12/99 *A mathematical model for performance evaluation in the R&D laboratories: theory and application in Italy*, by Mario Coccia, November
- 13/99 *Trasferimento tecnologico: analisi dei fruitori*, by Mario Coccia, December
- 14/99 *Beyond profitability: effects of acquisitions on technical efficiency and productivity in the Italian pasta industry*, by Luigi Benfratello, December
- 15/99 *Determinanti ed effetti delle fusioni e acquisizioni: un'analisi sulla base delle notifiche alle autorità antitrust*, by Luigi Benfratello, December

## 1998

- 1/98 *Alcune riflessioni preliminari sul mercato degli strumenti multimediali*, by Paolo Vaglio, January
- 2/98 *Before and after privatization: a comparison between competitive firms*, by Giovanni Fraquelli and Paola Fabbri, January
- 3/98 **Not available**
- 4/98 *Le importazioni come incentivo alla concorrenza: l'evidenza empirica internazionale e il caso del mercato unico europeo*, by Anna Bottasso, May
- 5/98 *SEM and the changing structure of EU Manufacturing, 1987-1993*, by Stephen Davies, Laura Rondi and Alessandro Sembenelli, November
- 6/98 *The diversified firm: non formal theories versus formal models*, by Davide Vannoni, December
- 7/98 *Managerial discretion and investment decisions of state-owned firms: evidence from a panel of Italian companies*, by Elisabetta Bertero and Laura Rondi, December
- 8/98 *La valutazione della R&S in Italia: rassegna delle esperienze del C.N.R. e proposta di un approccio alternativo*, by Domiziano Boschi, December
- 9/98 *Multidimensional Performance in Telecommunications, Regulation and Competition: Analysing the European Major Players*, by Giovanni Fraquelli and Davide Vannoni, December

## 1997

- 1/97 *Multinationality, diversification and firm size. An empirical analysis of Europe's leading firms*, by Stephen Davies, Laura Rondi and Alessandro Sembenelli, January
- 2/97 *Qualità totale e organizzazione del lavoro nelle aziende sanitarie*, by Gian Franco Corio, January
- 3/97 *Reorganising the product and process development in Fiat Auto*, by Giuseppe Calabrese, February
- 4/97 *Buyer-supplier best practices in product development: evidence from car industry*, by Giuseppe Calabrese, April
- 5/97 *L'innovazione nei distretti industriali. Una rassegna ragionata della letteratura*, by Elena Ragazzi, April
- 6/97 *The impact of financing constraints on markups: theory and evidence from Italian firm level data*, by Anna Bottasso, Marzio Galeotti and Alessandro Sembenelli, April
- 7/97 *Capacità competitiva e evoluzione strutturale dei settori di specializzazione: il caso delle macchine per confezionamento e imballaggio*, by Secondo Rolfo, Paolo Vaglio, April
- 8/97 *Tecnologia e produttività delle aziende elettriche municipalizzate*, by Giovanni Fraquelli and Piercarlo Frigero, April
- 9/97 *La normativa nazionale e regionale per l'innovazione e la qualità nelle piccole e medie imprese: leggi, risorse, risultati e nuovi strumenti*, by Giuseppe Calabrese, June
- 10/97 *European integration and leading firms' entry and exit strategies*, by Steve Davies, Laura Rondi and Alessandro Sembenelli, April
- 11/97 *Does debt discipline state-owned firms? Evidence from a panel of Italian firms*, by Elisabetta Bertero and Laura Rondi, July
- 12/97 *Distretti industriali e innovazione: i limiti dei sistemi tecnologici locali*, by Secondo Rolfo and Giampaolo Vitali, July
- 13/97 *Costs, technology and ownership form of natural gas distribution in Italy*, by Giovanni Fraquelli and Roberto Giandrone, July
- 14/97 *Costs and structure of technology in the Italian water industry*, by Paola Fabbri and Giovanni Fraquelli, July
- 15/97 *Aspetti e misure della customer satisfaction/dissatisfaction*, by Maria Teresa Morana, July
- 16/97 *La qualità nei servizi pubblici: limiti della normativa UNI EN 29000 nel settore sanitario*, by Efsio Ibba, July
- 17/97 *Investimenti, fattori finanziari e ciclo economico*, by Laura Rondi and Alessandro Sembenelli, rivisto sett. 1998
- 18/97 *Strategie di crescita esterna delle imprese leader in Europa: risultati preliminari dell'utilizzo del data-base Ceris "100 top EU firms' acquisition/divestment database 1987-1993"*, by Giampaolo Vitali and Marco Orecchia, December
- 19/97 *Struttura e attività dei Centri Servizi all'innovazione: vantaggi e limiti dell'esperienza italiana*, by Monica Cariola, December
- 20/97 *Il comportamento ciclico dei margini di profitto in presenza di mercati del capitale meno che perfetti: un'analisi empirica su dati di impresa in Italia*, by Anna Bottasso, December



## 1996

- 1/96 *Aspetti e misure della produttività. Un'analisi statistica su tre aziende elettriche europee*, by Donatella Cangialosi, February
- 2/96 *L'analisi e la valutazione della soddisfazione degli utenti interni: un'applicazione nell'ambito dei servizi sanitari*, by Maria Teresa Morana, February
- 3/96 *La funzione di costo nel servizio idrico. Un contributo al dibattito sul metodo normalizzato per la determinazione della tariffa del servizio idrico integrato*, by Giovanni Fraquelli and Paola Fabbri, February
- 4/96 *Coerenza d'impresa e diversificazione settoriale: un'applicazione alle società leaders nell'industria manifatturiera europea*, by Marco Orecchia, February
- 5/96 *Privatizzazioni: meccanismi di collocamento e assetti proprietari. Il caso STET*, by Paola Fabbri, February
- 6/96 *I nuovi scenari competitivi nell'industria delle telecomunicazioni: le principali esperienze internazionali*, by Paola Fabbri, February
- 7/96 *Accordi, joint-venture e investimenti diretti dell'industria italiana nella CSI: Un'analisi qualitativa*, by Chiara Monti and Giampaolo Vitali, February
- 8/96 *Verso la riconversione di settori utilizzatori di amianto. Risultati di un'indagine sul campo*, by Marisa Gerbi Sethi, Salvatore Marino and Maria Zittino, February
- 9/96 *Innovazione tecnologica e competitività internazionale: quale futuro per i distretti e le economie locali*, by Secondo Rolfo, March
- 10/96 *Dati disaggregati e analisi della struttura industriale: la matrice europea delle quote di mercato*, by Laura Rondi, March
- 11/96 *Le decisioni di entrata e di uscita: evidenze empiriche sui maggiori gruppi italiani*, by Alessandro Sembenelli and Davide Vannoni, April
- 12/96 *Le direttrici della diversificazione nella grande industria italiana*, by Davide Vannoni, April
- 13/96 *R&S cooperativa e non-cooperativa in un duopolio misto con spillovers*, by Marco Orecchia, May
- 14/96 *Unità di studio sulle strategie di crescita esterna delle imprese italiane*, by Giampaolo Vitali and Maria Zittino, July. **Not available**
- 15/96 *Uno strumento di politica per l'innovazione: la prospezione tecnologica*, by Secondo Rolfo, September
- 16/96 *L'introduzione della Qualità Totale in aziende ospedaliere: aspettative ed opinioni del middle management*, by Gian Franco Corio, September
- 17/96 *Shareholders' voting power and block transaction premia: an empirical analysis of Italian listed companies*, by Giovanna Nicodano and Alessandro Sembenelli, November
- 18/96 *La valutazione dell'impatto delle politiche tecnologiche: un'analisi classificatoria e una rassegna di alcune esperienze europee*, by Domiziano Boschi, November
- 19/96 *L'industria orafa italiana: lo sviluppo del settore punta sulle esportazioni*, by Anna Maria Gaibisso and Elena Ragazzi, November
- 20/96 *La centralità dell'innovazione nell'intervento pubblico nazionale e regionale in Germania*, by Secondo Rolfo, December
- 21/96 *Ricerca, innovazione e mercato: la nuova politica del Regno Unito*, by Secondo Rolfo, December
- 22/96 *Politiche per l'innovazione in Francia*, by Elena Ragazzi, December
- 23/96 *La relazione tra struttura finanziaria e decisioni reali delle imprese: una rassegna critica dell'evidenza empirica*, by Anna Bottasso, December

## 1995

- 1/95 *Form of ownership and financial constraints: panel data evidence on leverage and investment choices by Italian firms*, by Fabio Schiantarelli and Alessandro Sembenelli, March
- 2/95 *Regulation of the electric supply industry in Italy*, by Giovanni Fraquelli and Elena Ragazzi, March
- 3/95 *Restructuring product development and production networks: Fiat Auto*, by Giuseppe Calabrese, September
- 4/95 *Explaining corporate structure: the MD matrix, product differentiation and size of market*, by Stephen Davies, Laura Rondi and Alessandro Sembenelli, November
- 5/95 *Regulation and total productivity performance in electricity: a comparison between Italy, Germany and France*, by Giovanni Fraquelli and Davide Vannoni, December
- 6/95 *Strategie di crescita esterna nel sistema bancario italiano: un'analisi empirica 1987-1994*, by Stefano Olivero and Giampaolo Vitali, December
- 7/95 *Panel Ceris su dati di impresa: aspetti metodologici e istruzioni per l'uso*, by Diego Margon, Alessandro Sembenelli and Davide Vannoni, December

## 1994

- 1/94 *Una politica industriale per gli investimenti esteri in Italia: alcune riflessioni*, by Giampaolo Vitali, May
- 2/94 *Scelte cooperative in attività di ricerca e sviluppo*, by Marco Orecchia, May
- 3/94 *Perché le matrici intersettoriali per misurare l'integrazione verticale?*, by Davide Vannoni, July
- 4/94 *Fiat Auto: A simultaneous engineering experience*, by Giuseppe Calabrese, August

**1993**

- 1/93 *Spanish machine tool industry*, by Giuseppe Calabrese, November  
2/93 *The machine tool industry in Japan*, by Giampaolo Vitali, November  
3/93 *The UK machine tool industry*, by Alessandro Sembenelli and Paul Simpson, November  
4/93 *The Italian machine tool industry*, by Secondo Rolfo, November  
5/93 *Firms' financial and real responses to business cycle shocks and monetary tightening: evidence for large and small Italian companies*, by Laura Rondi, Brian Sack, Fabio Schiantarelli and Alessandro Sembenelli, December

Free copies are distributed on request to Universities, Research Institutes, researchers, students, etc.

**Please, write to:**

MARIA ZITTINO

Working Papers Coordinator

CERIS-CNR

Via Real Collegio, 30; 10024 Moncalieri (Torino), Italy

Tel. +39 011 6824.914; Fax +39 011 6824.966; [m.zittino@ceris.cnr.it](mailto:m.zittino@ceris.cnr.it); <http://www.ceris.cnr.it>

**Copyright © 2000 by CNR-Ceris**

All rights reserved. Parts of this paper may be reproduced with the permission of the author(s) and quoting the authors and CNR-Ceris