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MANAGEMENT AND FUNDING OF URBAN PUBLIC TRANSPORT

Local and regional authorities in Europe, No. 69

MANAGEMENT AND FUNDING OF URBAN PUBLIC TRANSPORT

Report by the Steering Committee on Local and Regional Democracy (CDLR)
prepared with the collaboration of Professor Claude Jeanrenaud

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CONTENTS

INTRODUCTION

The transport policy is one of the essential elements of any regional planning strategy, as its impact on both citizens' well-being and on the sustainability of any form of development is undeniable. For large urban agglomerations and, increasingly even for smaller towns, this transport policy is mainly represented by a development in urban public transport.

This development does not necessarily imply an increase of the transport capacity however. It may be represented by better co-ordination between the various means of transport, by network integration, by intermodality, etc.

This report endeavours only to deal with problems linked to urban public transport organisation, management and funding. Therefore, it does not try to offer direct solutions to the larger problem of urban development policy. An improvement in urban transport will nevertheless have an important impact on the sustainability of this development.

This report was written from the study of specialised literature and of case studies provided by four national delegations. It was not possible to undertake a survey or request information directly from transport firms. Statistical sources necessary to make international comparisons are virtually non-existent. What is more, given the broad scope of the task, there was little possibility of a thorough investigation of the issues, and we have frequently had to be content with a cursory overview.

In most European countries, municipal authorities are directly responsible for dealing with questions related to the organisation, management (or management monitoring) and funding of urban public transport. This is why the report mainly refers to them. However, all remarks and suggestions are equally applicable, *mutatis mutandis*, to regional authorities in countries where they have direct competencies in the domain under study.

Very briefly, the aims of the study are:

- to identify the different ways of organising urban public transport and then to assess their efficiency and effectiveness;

- to describe the varied forms of competition (actual, potential or virtual) which are faced by transport firms and to see whether urban public transport effectiveness can be improved by market means without sacrificing its social utility;

- to demonstrate that mobility control in towns requires action on various fronts – not only transport policy but also regional planning, the environment and regional development. Far from being purely the concern of public transport companies, the search for solutions demands an intermodal approach. The goal of this control is to encourage people who need to travel to use public transport that causes less nuisance to the inhabitants of towns and cities, or even to reduce their mobility needs. It is definitely not intended to interfere with individual choice concerning access to vehicle ownership;

- to clarify the role of public transport companies in a policy of sustainable development;

- to propose performance indicators against which transport firms can be assessed;

- to outline principles for an efficient and fair urban public transport funding system.

The study consists of three parts. The first is a description of urban public transport organisational models. It is plainly simplistic to contrast public management with private management, given the wide variety of models ranging from direct management by a municipality (or group of municipalities) to the free market. Attention is also given to the different means of introducing economic stimuli.

The second part begins with an examination of urban transport policies in relation to their stated goals. Broadly speaking, these can be divided into two groups: goals relating to efficiency (such as ease of access and the promotion of economic development) and goals connected with the concept of sustainable transport services (such as reducing environmental damage, safety, quality of life, fairness). This part ends by proposing a model for assessing the performance of public transport operators.

The third part deals with urban public transport funding. The many requirements to be met include ensuring that those who benefit from the service pay a proportion of the cost that is commensurate with that benefit (the "beneficiary pays" principle. It also includes encouraging operators to meet goals set by the public authorities; giving operators greater responsibility so that they constantly seek to reduce costs; and finally helping set up a co-ordinated transport policy. Whilst it is easy to identify direct beneficiaries, the same is not true of those who benefit indirectly (such as property developers and owners, tradespeople and motorists). It is in the area of funding that the gulf is widest between the ideal and practice in the various states.

I. FORMS OF MANAGEMENT OF URBAN PUBLIC TRANSPORT SERVICES

1. Context

The service provided by urban public transport companies combines elements of both a commercial/private service with those of a public service. Users benefit from a transport service for which they are willing to pay. Speed, punctuality, comfort, safety and the density of the network determine the value of the commercial transport service and thus the price that users agree to pay in order to be able to use it. This first kind of service supplied by urban public transport should normally be subject to market forces.

Transport companies also provide services to the community. These consist of public or non-commercial services, which cannot be funded from the price of the transport. If public transport is attractive, people are less inclined to use their own cars, the main source of pollution caused by transport. Moreover, if people switch to using public transport, the volume of traffic is reduced and its fluidity improved. Both commuters who drive to work and industrial and commercial companies (haulage) benefit indirectly from public transport. Reduced damage to both the environment and to public health in urban areas as well as reduced congestion costs are external advantages. This constitutes the public element of services provided by transport companies.

Clearly, external factors are the main reason for public authorities to take a share in managing urban public transport systems, but there are other reasons for the failure of the free market:

- decreasing costs throughout the whole range of demand (natural monopoly). In such a situation, a company that charged the marginal price for its services – the rule of price setting efficiency – would go bankrupt. For while urban public transport services are not true natural monopolies, they do possess certain of their characteristics;

- it cannot be ruled out that urban public transport entirely subject to market forces would lead to wasteful competition. If competition focuses on services provided rather than on prices, market forces might ultimately create a situation in which users were offered too wide a variety of services at too high a price (Mackie 1997);

- lastly, the principle of fairness can also lead to market failure. Transport policy frequently refers, explicitly or implicitly, to the right to public transport. Lower fares for underprivileged social categories are a consequence of this concern.

Before examining the various organisational forms of urban public transport services, it is worth briefly considering the market structures which operators are likely to encounter. There are four possible kinds of competition, each requiring a different approach by the public authorities:

- a strong natural monopoly calls for action by the public authorities to establish regulations, since competition is neither desirable nor even possible;

- a weak natural monopoly in which the dominant company is incapable of preventing its competitors from providing (only) the most profitable services and dropping the ones which are not commercially viable. In this case, the authorities may have to act to restrict competition;

- a perfectly contestable market does not require any action by the authorities to stimulate or regulate competition;

- when the market is characterised by moderate but imperfect competition, the role of public authorities is less clear and it cannot be asserted *a priori* whether or not it is desirable to promote competition or to prevent excessive competition (Mackie 1997).

2. Organisation

2.1. Public or private management

There are a great many possible organisational forms for urban public transport. Merely distinguishing between public and private management is obviously too simplistic as a classification of urban public transport systems. The following are some of the criteria to be taken into account in assessing the ways in which urban public transport is managed (see CERTU 1997):

- Is the decision to provide the public with an urban transport service derived from a policy choice by the public authorities or from the initiative of private companies responding to user demand in the market place?

- Who owns the operating resources: infrastructure, rolling stock and other facilities? Public ownership of such property is perfectly compatible with its operation by a private company. It is acceptable that a public authority owns the fixed material and the operator the rolling stock.

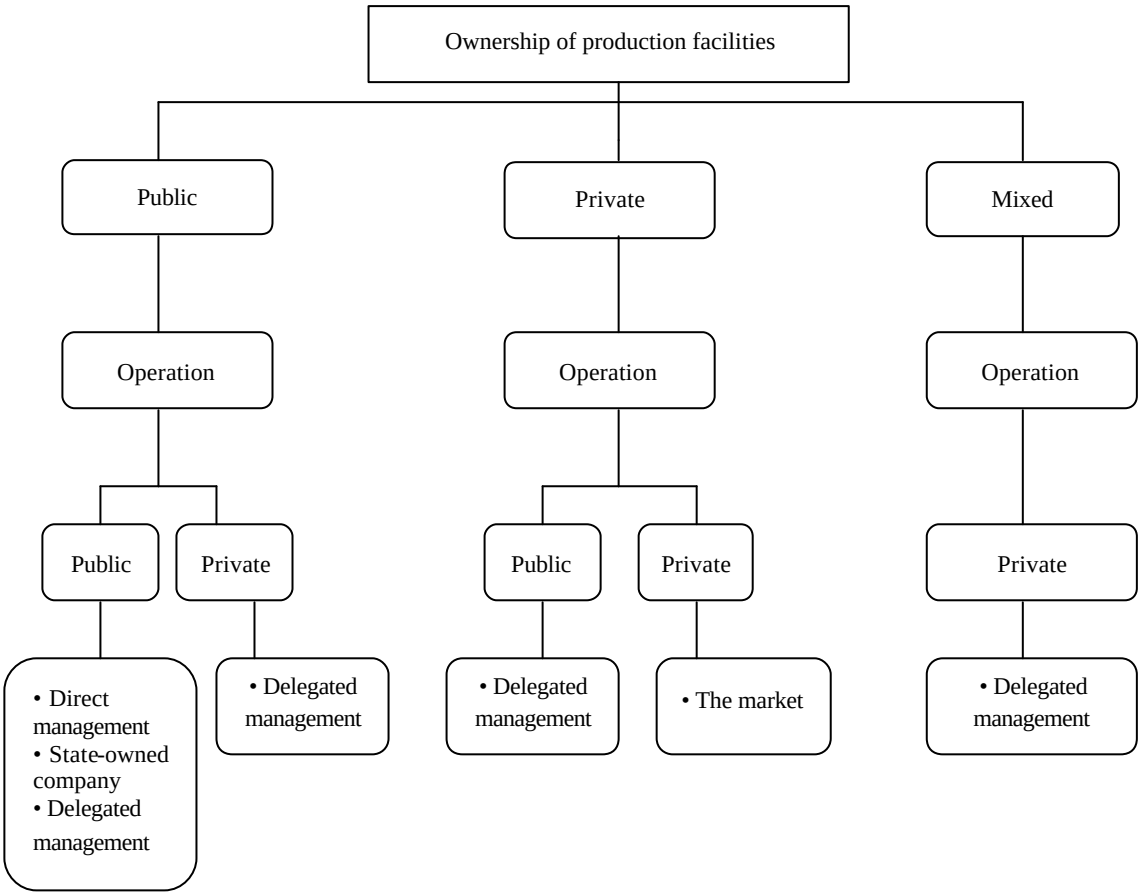
- Is the system to be operated by the municipality (direct management), a state-owned company, a public or private operator with a concession to provide the service (delegated management) or by competing companies (the market)?

- What freedom does the operator have to define the service and adapt it to the needs of users and to what extent is the operator liable?

- Is the service provided by a single company acting as a monopoly, by several companies to which use of a line or sub-network has been delegated or by several companies in competition?

- Lastly, when a private operator is responsible for providing the service, it is important to know how liability is divided between the public authority and the operators. For the way in which liability is divided has a bearing upon efficiency and effectiveness.

Figure 1: Urban public transport: management forms



First situation: public funds have financed the investment and the operating facilities therefore belong to the authorities. The service may be provided by the public authorities themselves (direct management), by a body or company which is not liable (state-owned company) or by a public or private operator (delegated management).

Second situation: the operator owns the equipment and facilities. There could therefore be a concession to operate the network, competitive tendering by the authority to operate lines (transport service defined by the authority) or a system of regulated competition (transport service determined by the market). In the latter case, the authority may require the operator to fulfil public-service obligations in exchange for compensation.

Third situation: the investment is financed by both the public authorities and one or more private operators. Provision of the service is contracted out to a private operator. The other approach consists of competitive tendering to operate the network.

2.2. Decision-making levels

Organisation of a transport system is complex and it is crucial to clearly define the division of decision-making powers between the various levels. There are three levels of decision-making: strategic, intermediate and operational.

Table 1: Levels of competence

Level		Areas of competence	
Strategic	Why?	Purpose: to explain the general aims and the purpose of the public transport service (the outcome)	Characteristics of the transport system (the area served, intermodality, capacity, etc.)
Intermediate	What?	Planning: defining the services (the output)	The network, timetable, fares
Operational	How?	Choosing the most efficient means of providing the service	Everything associated with providing and selling the service, including whether or not to sub-contract some elements of it

Adapted from CERTU, 1997.

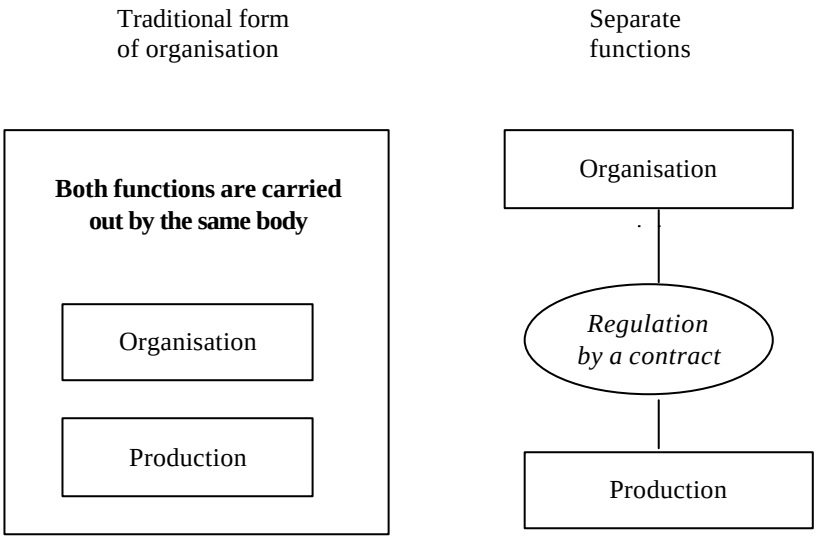
2.3. Service organisers and producers

In assessing provision of a public service to the urban population, it is useful to draw a distinction between two functions. The first concerns the definition of characteristics of the service (the arrangement), while the second covers the actual provision of the service (see Savas 1987). The value of such a distinction lies in the fact that these functions may be carried out by different bodies. In this case:

- the authorities determine the features of the service (the organisation function) and
- a public or private operator provides the service (the operation or production function).

This justifies the idea of a service concession by which a public authority grants an operator a licence to provide the local population with a service. The service concession makes it possible to protect the public interest – the operator's obligations are laid down in the contract – while ensuring that services are provided at the lowest cost by introducing market mechanisms. On this basis, two methods of public service provision may be compared: the traditional method in which the organisation and production functions are combined (direct management) and a method more in keeping with the principles of a new form of public management in which these two functions are carried out by separate bodies.

Figure 2: Allocation of organisation and production functions



The service concession aims to encourage the operator to achieve the aims defined by the public authority as well as to provide the service efficiently. The authority's task is not a simple one, because it must make decisions without possessing all the necessary information. This is an example of the classic relationship between a principal (the authority) and an agent (the operator). Granting the contract on the basis of competitive tendering enables the authority to obtain better information on the possible operational costs (Schwab and Christe 1990; for a comparison of regulation by means of a contract or by instituting competition, see Rousseau 1993).

In urban public transport, the organisation function (*Leistungsbesteller*) (Brändli and Bollinger 1996) and the operation function *(Leistungsersteller*) are frequently separate. The French model, for instance, is based upon a separation of the functions of the organisation and provision of services in accordance with the 1992 Guideline Act on Internal Transport (Duchène 1993). This model involves two main agents: an organising authority and one or more operators. A municipality, an association of municipalities, a metropolitan authority or region or a mixed association (group of local government bodies of different types) may act as an organising authority (Cancalon and Gargaillo 1991). It falls to this authority to devise a general definition of the transport service (strategic level) to be provided. In France, the operating function is usually carried out by one of the three large national transport groups, which generally operate a monopoly.

When the organisation of a transport system is left to private initiative, there is no organising authority but rather a regulatory body. One of its tasks is to ensure that the operator does not use its dominant position to make unwarranted profits. The regulatory body may act in various ways by controlling fares or by regulating the rate of return (Mackie 1997).

2.4. Models

Under the subsidiarity principle, decisions on urban public transport should be taken at local level. As the area served usually extends beyond municipal boundaries, it is useful to allow the authorities concerned to join forces in a new decision-making body. The latter may be governed by a contract (association of municipalities) or by setting up a new administrative body (region, metropolitan area or district). As for co-ordinating urban and regional traffic, different levels of authority (such as municipalities and cantons or counties) may be grouped together in a single organisational unit.

A number of possible organisational forms are listed below:

- the municipal authority organises and operates the urban public transport system. It defines its tasks, plans and also provides the service itself. This is therefore a model of direct management, for example as in the town of St Gallen in Switzerland;

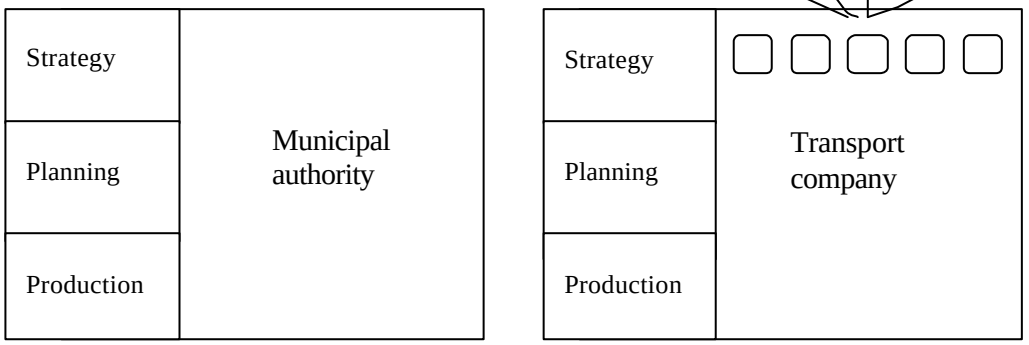
- a private-law corporation is set up (transport company) whose shareholders are the public authorities concerned (the municipalities served and possibly a higher-level authority). The company takes all decisions, from strategy to operational choices. Municipalities in the area served are represented on the company's executive bodies and are thus able to determine the company's general policy (strategic aims) and to participate in decision-making on the service provision (planning). An example is the public transport system in the town of Neuchâtel in Switzerland;

- decision-making powers are shared between the public authority (purpose and general features of the transport service), a publicly funded transport company responsible for planning (detailed service provision – lines, fares, schedule, etc.) and operators selected by means of competitive tendering (production) for example the town of Malmö (CERTU 1997);

- general aims are determined by an organising authority comprised of a group of municipalities, which delegates operation of the service to a private or public operator (in theory one per conurbation). In this case, operation covers both planning (detailed specification of the service) and production (operational choices). The operator may opt to sub-contract part of the service. This organisational form corresponds to the French model (apart from the Paris region) (CERTU 1997);

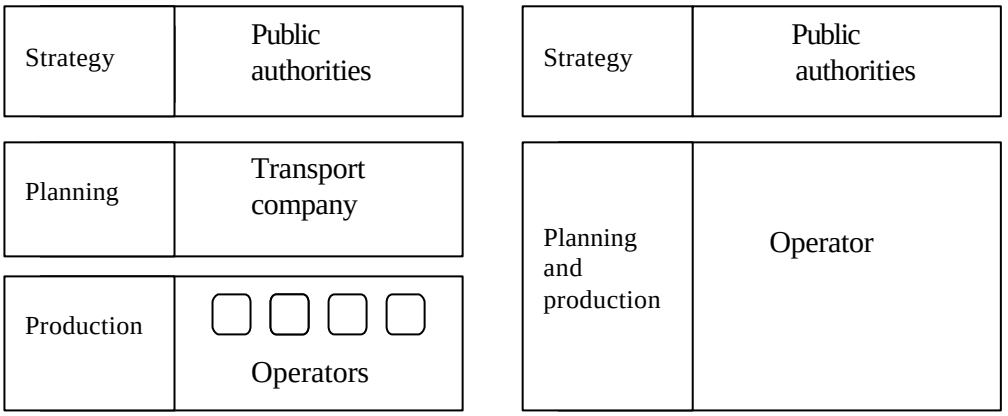
- in a deregulated situation, the market determines the type of transport services provided. Barriers to hamper entry by new operators are reduced to a minimum, so as to encourage the establishment of a competitive market. A regulatory authority monitors observance of competition rules and ensures that gains in productivity are passed on to users through lower fares. Services that the authority would like to offer the population but which are not commercially viable (public service provision) are awarded on the basis of competitive tendering. This organisational form corresponds to the British model (except for London) (CERTU 1997).

Figure 3: Urban public transport – organisational models



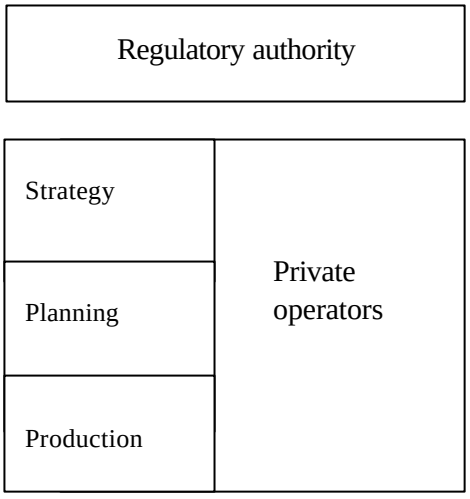
a. Direct management by the municipal authority.

b. All functions are carried out by a transport company whose shareholders are the public authorities concerned.



c. Strategy and planning carried out by two separate bodies. Operators selected by competitive tendering.

d. An organising authority defines the strategy and an operator carries out the planning and production tasks.



e. Private operators determine both general aims (strategy), details of service provision (planning), and are responsible for providing the service. The authority ensures that there is effective competition.

3. Relations between public authorities and operating companies

3.1. Methods of public service provision

When considering methods of providing a public service, including its general organisation, it is too simplistic merely to distinguish between public and private management. Public service provision may be classified in the following major categories, bearing in mind the fact that multiple combinations may exist, as practically all services may be broken down into several elements or sub-services, each of them furnishing provision separately.

Direct management: the public authority itself provides the service, using its equipment and staff. It determines the type of service offered. Since the service producer is not subject to any form of competition, there is a danger that the service will not be provided efficiently.

Horizontal co-operation: several municipalities join forces to provide a joint service. Inter-municipal co-operation is used to benefit from economies of scale or when the area to be served by the service extends beyond municipal boundaries.

Sub-contracting: rather than provide the service itself, a public authority delegates responsibility for a service or for part of a service to a private company – or possibly to another municipality – according to its specifications and under its authority. The advantage of sub-contracting is that it makes it possible to create competition and exerts pressure to keep costs down. It is possible to sub-contract only part of the activities necessary for provision of the service.

Concession (or franchising**)**: the municipality grants a private company the right and responsibility of providing a public service for which it has the monopoly. The concession is drawn up under a contract, generally limited in time, which sets out the concession holder's rights and obligations. This type of contract is frequently used for public services operating as a network (Christe 1992): for example water or energy distribution, urban public transport and cable networks. Auctioning the concession allows an element of competition to be introduced when the market is generating very imperfect competition or even a monopoly.

The market: it is market forces that determine whether the service is actually produced and in what quantity. The public authority merely acts to impose certain minimum standards. If necessary, the authority may ask companies to fulfil certain public service obligations in exchange for compensation.

3.2. Service provision of urban public transport

The typology of methods of service provision discussed above applies generally to all public services. As regards transport, a slightly different system of classification is often suggested comprising three main methods: direct management, delegated management and the market.

3.2.1. Direct management

In this case, the transport service is provided by the municipality itself or by a public body (a company owned by the municipality). The public authorities are liable for all operational and investment-related risks. They also cover the shortfall. Since there is little competitive pressure on the operator, it is highly probable that the service will not be provided efficiently. On the other hand, because the public authority controls all aspects of service provision including fare-setting, it will be easier to ensure that the general aims – the purpose – are achieved.

A variant consists in handing the running of the service to a transport company with a legal personality whose shareholders are the municipalities served.

Still within the direct management model, the conclusion of a service concession between the public authority (the municipality or a group of municipalities) and the operator makes it possible to create the conditions for more efficient management through a clear division of the tasks. The contract specifies the aims that must be achieved, the volume of services to be provided and the overall budget[1] available to the operator. A service concession is only really worthwhile if the operator enjoys a wide margin of manoeuvre in operational decisions. There needs to be a coherent division of risks and liabilities. In this respect, it is important that the amount of the public authority's subsidy to cover the deficit be set before the start of the financial year. Where there is an overall budget, this condition is met. The service concession aims to set the operator clear aims, oblige it to adopt a more responsible approach to management and, in doing so, encourage an efficient service.

3.2.2. Delegated management

There are numerous forms of delegated management which allow the operator varying degrees of freedom – more or less precise specifications – and which entail greater or lesser degrees of risk for the operator. Two criteria can be used to distinguish the various forms of delegated management. Firstly, the division of risks and liabilities between the public authority and the operator and secondly, the way in which contracts are concluded (with or without competitive tendering).

Division of risks

There are three categories of risk: investment (infrastructure and rolling stock), production costs (industrial risk) and revenue (commercial risk, see Duchène 1993). In sharing these three categories of risk, there are two extreme scenarios and numerous intermediate ones.

Let us imagine that the public authorities provide the investment and that they define the operator's obligations and fares in an extremely precise set of specifications; further let us suppose that the operator is compensated on the basis of its effective costs. In this case, the authority is incurring three types of risk (operating lease according to the French model). This form of institutional organisation is unlikely to result in a cost-efficient service as the operator has no incentive to improve its productivity nor indeed to be overly concerned with customer satisfaction because it is not affected by revenue. According to this scenario, the wisdom of delegating the operation of the service may be questioned. The situation is different if at least some of the production risk is transferred to the operator. Rather than reimbursing effective costs, the authority pays compensation based on standard costs calculated, for instance, on the basis of the volume of service (output). If the operator succeeds in cutting costs while also meeting the obligations established in the specifications, it will be able to keep at least part of the increased productivity. This serves to introduce an element of economic incentive into the system, thereby encouraging the operator to provide the service efficiently. This first model corresponds to sub-contracting, since the operator does not assume any commercial risk.

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1 The overall budget consists of a package, which may be used freely as required. It helps to extend the company's operational margin of manoeuvre.

At the other extreme, a contract might stipulate that the operator would bear both the industrial and commercial risk. It will therefore be in the operator's interests to provide a service popular with users since this will increase its revenue. Clearly, this presupposes that the operator is able to set fares freely and has total responsibility for operational management. The division of risks must be accompanied by the division of liabilities. This amounts to a system of pure concession.

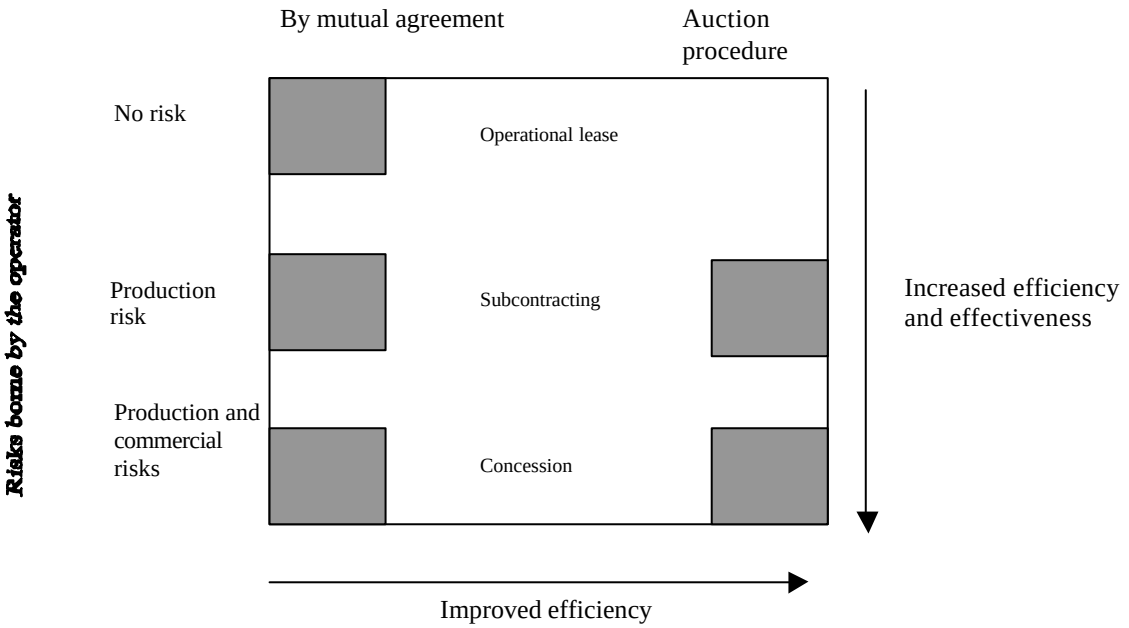
Since it is hardly ever possible to cover all costs from commercial revenue, the contract would have to set fixed-rate compensation to make up the balance (market-clearing subsidy). The operator will only offer services that can be covered by commercial revenue (given the market-clearing subsidy). If the authorities wish to provide the public with additional services or grant certain categories of reduced fares, this will have to be specified in the contract. The operator will receive compensation for meeting these public service obligations.

Awarding the contract

It is often neither possible nor cost-effective to delegate to several operators the running of one route or line (a so-called "natural monopoly", common in companies working in a network, Christe 1992). However, there is a way of creating some competition in the urban public transport market, namely that since there can be no market competition, companies must be made to compete to obtain the contract. This involves auctioning the contract to the lowest bidder, for instance to the company which will require the lowest market-clearing subsidy while also meeting the specifications (see Demsetz 1968; Berg and Tschirhart 1988). However, it is not always possible for an auction procedure to create competition. That requires two conditions: the factors of production must be available to all the tenderers at competitive prices and the cost of collusion between companies interested in the market must be dissuasive (Christe 1992). Holding an auction in order to select the most efficient operator raises various delicate questions such as how many companies need to be invited to tender, how should their tenders be assessed, what steps need to be taken to ensure that the contract is honoured and what period of time should the contract cover?

The length of the contract is important. If the licensee bears the risk of investment, should the contract cover the whole period of loan repayments for equipment and infrastructure? If the contract ends before the equipment is totally paid off, the new licensee has no real choice other than to buy it. The selling price would then be a delicate question, especially if it had not been specified in the contract. The other difficulty is uncertainty about future prices. The literature suggests various solutions to this problem: renewable short-term contracts (Posner 1974) or incomplete long-term contracts (Demsetz 1968).

Figure 4: Method of granting contracts



3.2.3. Market

Market forces decide whether provision of the service is commercially viable. Private operators therefore take the initiative to provide the service. If the public authorities wish other (unprofitable) services to be provided to the population, they can request private operators to carry them out in return for appropriate compensation. In theory, operators responsible for supplying non-commercial services should be selected through competitive tendering. The scant available data (CERTU 1997) shows that production costs are lowest in a deregulated system – on average half of those in a regulated market. The fact that there is less need for public authorities to grant subsidies or cover deficits is another advantage. Free competition also has drawbacks, such as a certain amount of instability in the service – the counterpart to the freedom to enter or leave the market. There is also a risk that, after an initial phase of competition, the market will be dominated by a small number of large operators (oligopoly). Hence the need to set up a regulatory body to monitor obstacles to competition.

Figure 5: Degree of coverage of costs by commercial revenue

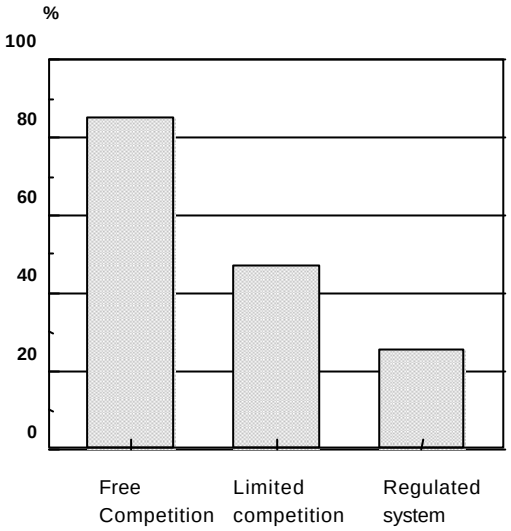
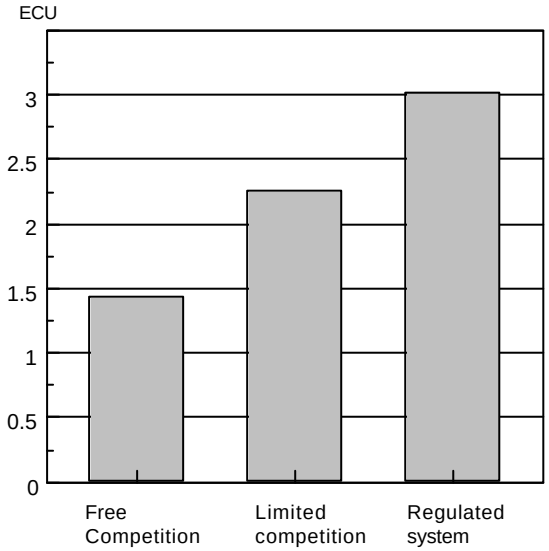


Figure 6: Efficiency*



* Return per km/vehicle in ecus.

Source: CERTU 1997.

3.3. Improving efficiency through competition

Competition is a powerful mechanism that encourages those subject to it to produce better value services in order to maintain or even improve their market position. When we talk about competition, we immediately think of the numerous producers struggling to sell the same service to the same consumers (genuine competition). However, there are other forms of competition, such as:

- virtual competition and
- potential competition.

3.3.1. Virtual competition

This arises from the possibility of comparing the performance of several operators even when the latter are not running the same lines or the same network. Public authorities can estimate the "competitive" performance of the company running their transport network simply by comparing it with other companies operating in similar circumstances. If such comparisons show that the performance of the licensee or sub-contracting company is inadequate, the latter will be under strong pressure to become more efficient.

The indicators used to make this type of comparison are unitary costs (operational costs per vehicle/km), the degree of coverage of costs by commercial revenue, the respective productivity of labour (seats-km/staff numbers) and capital (seats-km/total number of seats) and the degree of productive efficiency. In order to achieve the latter figure, effective production (seats-km or passengers-km) is compared with the highest production achievable with the available resources (the benchmark) using appropriate statistical techniques.

An operator whose performance is compared with other companies will feel under competitive pressure even if it occupies a monopoly position. The pressure will be especially strong if the contract is due to expire soon. The same will apply if the contract allows the authority to renegotiate prices and any market-clearing subsidy before the end of the contract. Simply comparing performances will encourage the operator to make an effort to improve its productivity and offer a high-quality service.

3.3.2. Potential competition

An operator that runs a line or a network as a monopoly is subject to increasing competitive pressure as the end of the contract approaches. The fact that the contract is granted on the basis of a periodic auction will be perceived by the operator as a threat of competition. Such a threat will encourage it to reduce its costs to meet users' needs as effectively as possible. Even when the service is managed directly, the fact that the authorities raise the possibility of competition is likely to improve performance.

II. MANAGEMENT AIMS AND TOOLS

1. Preliminary remarks

First of all, we shall look at the framework and aims of transport policy in urban regions. Its chief aims are to allow easy access to the town's various functions both for people and goods, to reduce private motor vehicle traffic and to limit the negative effects of traffic on public health and well-being. Urban public transport has an important role to play in implementing such policies.

We shall then discuss the issue of the performance of urban public transport companies. The notion of performance is a broad one, because it covers costs and productive efficiency, the quality of the transport, user satisfaction and the revenue made by transport companies. It is vitally important to identify whether there is a connection between the way in which urban transport is organised and the performance achieved.

2. Aims of urban transport policy

2.1. Efficient transport systems

2.1.1. Accessibility

Accessibility is measured in terms of greater or lesser ease in reaching one or more points in the urban area from one or more other points, bearing in mind the different forms of transport available (Cancalon and Gargaillo 1991; Bloy et al. 1977). The most widely used indicator for measuring accessibility is journey time. Accessibility is good if the town's various functions are linked by conditions that are acceptable in terms of time, comfort and cost (Essig 1985). If accessibility is not good, the advantages of a large conurbation are not fully exploited.

Traffic congestion is the main obstacle to accessibility. In industrialised countries, the costs of congestion represent approximately 2 per cent of the GDP (European Commission 1995). Congestion occurs when the number of users exceeds the capacity of the network. Each additional user imposes delays on all the other vehicles using the same infrastructure at the same time, and also suffers delay himself.

Figure 7: Congestion costs in British towns, in pence per vehicle-km

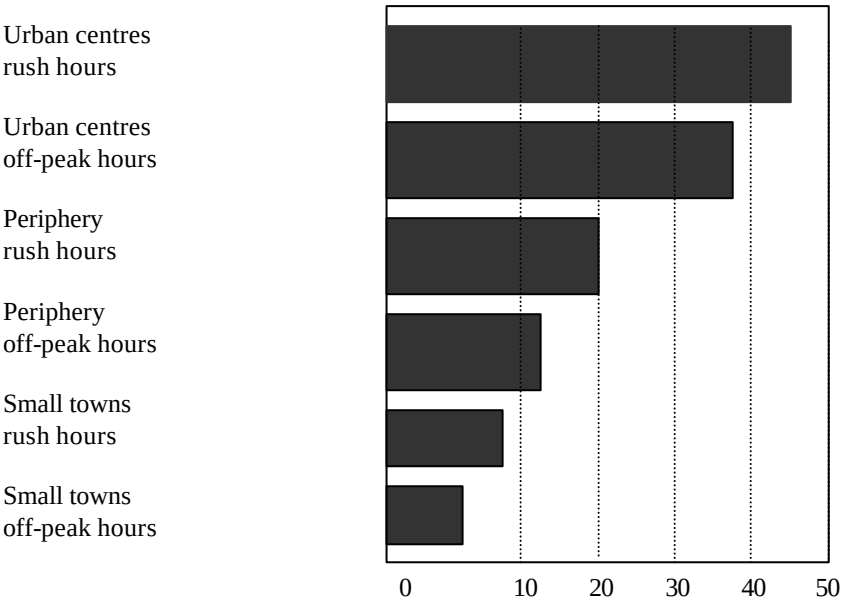
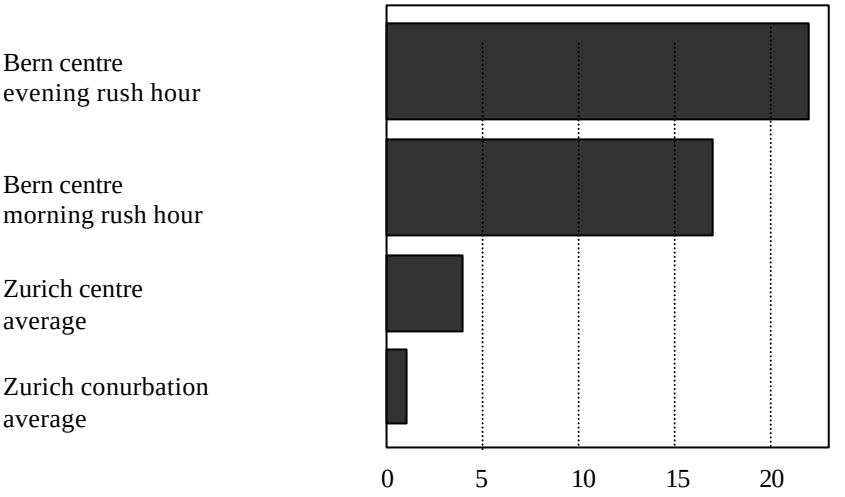


Figure 8: Congestion costs in Switzerland in Swiss centimes per person-km



Source: Ecoplan (1992) and Maibach et al. 1992.

In a congested network, often only a slight reduction in the number of vehicles is enough to restore the fluidity of traffic. Numerous measures are possible to help reduce congestion, for instance introducing tolls in urban areas designed to internalise the cost of congestion or a policy to persuade people to prefer urban public transport over private vehicles (lower fares, improved frequency and comfort, etc.). In large conurbations, the existence of a dense and effective public transport system is the *sine qua non* of maintaining good accessibility to the town's various facilities.

2.1.2. Contribution to economic development

Numerous towns explicitly cite economic development and job creation as one of the key aims of their transport policy, together with safety, reducing environmental damage, reducing the need for mobility and urban regeneration (for example Edinburgh, Vienna, Eisenstadt and Helsinki. See Minken 1997).

In competing with other towns for jobs and the establishment of new companies, efficient transport is vital. Congestion makes a town less attractive; it should not impede communication. Were this to happen, the town would run the risk of losing the advantages of concentration and proximity. In other words, congestion must not be allowed to undermine growth.

An efficient urban public transport system promotes business development in several ways:

- attractive urban public transport reduces traffic jams and facilitates business journeys and the transportation of goods within the conurbation (Jacobs 1996);

- internal and external accessibility, assessed in terms of the time and cost of journeys, is a determining factor in the development of towns;

- the mobility of people within the urban area helps to expand the labour market, giving companies access to a wider employment catchment area and thus to a richer and more diversified workforce;

- more generally, an efficient transport system increases the productivity of capital;

- accessibility to the town's various key functions constitutes an essential criterion for companies in choosing where to locate – and as a result for people in deciding where to live;

- the advantages of a conurbation lie in the juxtaposition of a large number of activities in a limited area and in the ease of communication between them. An attractive urban public transport system is a means of retaining this advantage.

2.2. Sustainable transport

2.2.1. The environment

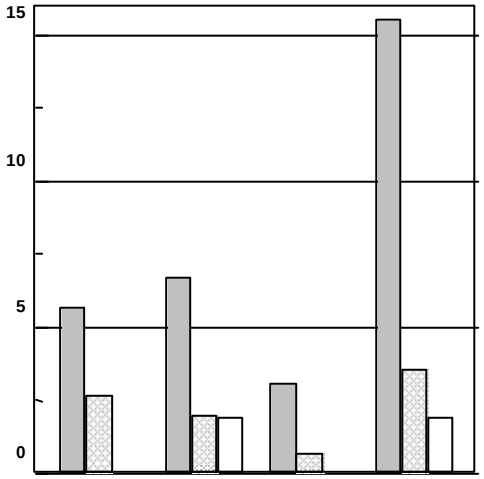
Motor traffic has a negative impact on the environment at local, national and global levels. In towns, transport is a major source of damage to the environment and to public health and well-being (European Commission 1995; Ecoplan 1992; Jeanrenaud et al. 1993 a and b; Maibach et al. 1992). The external cost of transport, including the cost of accidents and congestion but excluding climatic effects, represents approximately 5 per cent of the GDP of OECD countries (1995). The root of such costs lies in excessive mobility – a consequence of unsuitable transport and urban planning policies and a choice of transport that favours individual transport.

The environment and public health are impaired in a wide variety of ways. First, local pollution from emissions of nitrogen oxides (NO_x), hydrocarbons (COV), sulphur dioxide (SO_2), particles (PM_{10}) and dust, damage health, vegetation, materials and the external fabric of buildings. Secondary pollutants (O_3 and NO_2) are formed by the combination of primary pollutants emitted by motor vehicles (nitrogen oxides and hydrocarbon for surface ozone). Atmospheric pollution is compounded with noise nuisance that, for many, represents the main source of unpleasant and harmful damage. Moreover, it is a kind of harm that primarily affects people living in towns.

At global level, vehicle emissions play a major part in the danger of climatic change caused by greenhouse gases (mainly carbon dioxide). Only ecological tax reform, by means of an energy or carbon tax set at a higher rate each year over a long period, would succeed in breaking the current trend by reducing the volume of motor traffic and by channelling urban journeys into more energy-efficient forms of transport. Thus, by introducing a tax equivalent to an increase in the real price of fuel of 7 per cent per year over twenty years, it would be possible to halve fuel consumption compared with anticipated use (OECD 1995).

Today, we have estimates of the environmental costs of traffic in towns, which indicate that unitary costs – per passenger-kilometre – are considerably lower for public transport than for individual vehicles.

Figure 9: The environmental costs of transport in the town of Zurich according to type of transport, in Swiss centimes* per passenger-km



	Air	Noise	Climate	Total
Private	5.7	6.7	3.1	15.5
Public bus	2.7	2.0	0.7	03.6
Public tram	0.0	1.9	0.0	01.9

Source: Maibach et al. (1992).
* 1 Swiss franc equals 0.60 ecu.

A study of external transport costs in Neuchâtel confirms these conclusions: the costs per passenger-kilometre are nine times higher for an individual vehicle (private car) than for trolley buses (Jeanrenaud 1992; Jeanrenaud et al. 1993; Soguel 1994). The assessment takes account of the cost of accidents but not of health damage caused by air pollution and climatic risks.

The external costs of private transport are mainly environmental and health damage. In order to internalise these costs by raising fuel prices, the latter would have to be tripled (estimate based on damage caused and the price of fuel in Swiss towns, Maibach et al. 1992).

2.2.2. Risk of accident

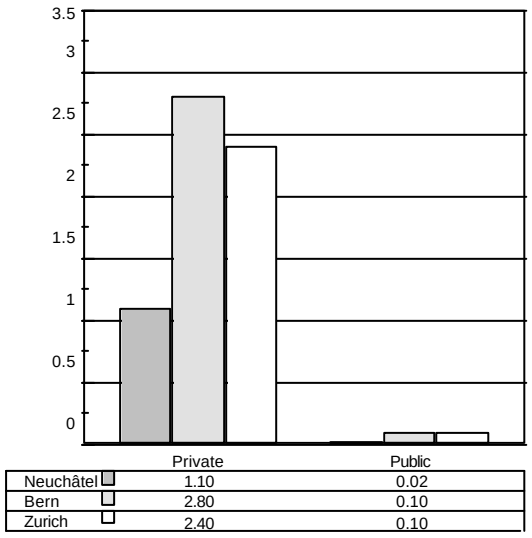
A key aim of the transport policy of most towns is to ensure a high level of safety (Minken 1997). Given that in the European Union nearly 50 000 people die each year as the result of transport accidents (99 per cent of which are road accidents), it is not surprising that local authorities give such high priority to traffic safety (1993 data, European Commission 1995). Today, road accidents constitute the first cause of death for people under the age of forty and each death represents an average of forty years of life lost (compared with ten years for cardiovascular illnesses and cancer). Taken together, European Union countries pay nearly 100 billion ecus (estimate based on the public's propensity to pay to avoid accidents).

Transport accidents incur several types of cost (Schwab and Soguel 1995 a and b; Jeanrenaud et al. 1993):

- material damage;
- harm to people;
  - medical and pharmaceutical expenses;
  - lost productivity;
  - human costs (pain, grief, suffering by victims and their families, relatives and friends);
- judicial and police costs.

Estimates for several European towns all demonstrate that the cost of accidents is considerably lower for public transport than for individual travel. Figure 10 shows the unitary cost of accidents borne by the local authority (external costs).

Figure 10: The external costs of accidents according to the method of transport, in Swiss centimes per passenger-km



	Private	Public
Neuchâtel	1.10	0.02
Bern	2.80	0.10
Zurich	2.40	0.10

Sources: Jeanrenaud et al.. (1993); Ecoplan (1992) and Maibach et al.. (1992). For Neuchâtel, external costs are defined in a more limited way.

2.2.3. Social function of public transport

In addition to its economic role, urban public transport also has a social function, in that it must cater for underprivileged categories of the public (captive customer base) who are obliged to travel a long way to their work and who do not have individual transport. Urban public transport must provide this service even if it is not in keeping with the company's commercial interests. Implementation of a social transport policy calls for the introduction of more favourable fares for users or the standardisation of fares (proportionally lower fares in peripheral areas than in central areas without taking account of the real costs). Standardisation of fares helps to generalise access to a "service meeting needs regarded as essential to everyone's everyday life" (Essig 1985). Several countries recognise explicitly (in their legislation) or implicitly (in their transport policy choices) the idea of a right to transport. This is reflected by public authorities' willingness to ensure accessibility to the whole area under their administration (Rühl 1985).

The redistributive effects are not restricted to transport services. Different population groups are subject to traffic nuisance in unequal measures. The areas most affected by motorised traffic are those inhabited by people on low incomes.

3. The role of urban public transport in urban transport policy

3.1. Modal transfer to public transport

A sustainable transport policy is not compatible with seeking continued growth of individual motor traffic. OECD countries should not expect current policies to succeed in reducing motor vehicle traffic. On the contrary, in most countries, individual traffic is expected to double over the next thirty to forty years. Admittedly, growth will be much stronger on the periphery rather than in the centre of towns. In Switzerland, there has been a reduction in the demand for individual motor traffic.[1] However, as the occupation rate of vehicles drops, the number of vehicle-kilometres increases as does the harm caused to the population (Jaccard and Perret 1995).

Municipal authorities have various tools at their disposal to help alter travel habits in favour of public transport. In a study on greater Zurich, Maibach et al. (1992) identified various measures aimed at reducing motor traffic nuisance and at encouraging use of public transport:

- levy of an additional tax on fuel;
- introduction of a permit system to enter the town centre;
- management of parking places (by price and quantity);
- speed limits;
- closing the town centre to motor traffic;
- sound-proofing buildings exposed to noise;
- improving public transport services;
- encouraging people to use different kinds of transport for different purposes (intermodality).

1 Since 1985, the growth rate of journeys made by public transport is twice as high as for those in individual vehicles (OECD 1997).

The first measure – raising fuel prices – fits with a policy of internalising external costs at a nationwide level. Nevertheless, it would have an impact on the choice of transport in towns. The second measure – a system of permits – corresponds to a simplified form of urban toll. The same applies to measures aimed at increasing the cost of parking. It should be noted that the authors did not propose introducing an electronic toll system. The most cost-effective measures are, in decreasing order, raising fuel prices, speed limits, managing parking places and a permit system.

3.2. True pricing

The gap between private costs – paid by users – and social costs – the true cost of transport – has widened in favour of the car, notwithstanding fare rates intended to make public transport more attractive (Jaccard and Perret 1995).

One measure whose value is unanimously recognised – at least in theory – consists of internalising external costs, that is making users pay the real cost of their journeys. An urban toll (in the form of an electronic toll, a tax disk required for access to the town centre or charging for parking) are the tools best suited to a policy of internalising costs. Such a measure would make it possible to correct current competitive distortions between individual and public transport. While there are no technical obstacles to the implementation of such a policy, there is very strong opposition to any measure that would result in a restriction (directly or through price) on the use of individual vehicles.[1] As Perret and Jaccard point out (1995), it will not be possible to introduce such a measure locally, even in an exemplary and courageous authority; it will have to be introduced by means of concerted action at national or even international level.

4. Efficient management of urban public transport: tools and practices

4.1. Management aims of urban public transport

For public transport to constitute an alternative to the car, it is not enough to take measures aimed at making public transport more attractive; urban public transport companies also need to be managed efficiently:

- transport services must be provided with a minimum of funds, staff and capital resources (rolling stock and infrastructure);

- the service must be of high quality and meet users' expectations.

Efficient management by operators must not simply promote a switch from individual to public transport, but also ensure that operational costs are met by (direct or indirect) beneficiaries rather than by the taxpayer.

The literature suggests various indicators for assessing the extent to which these aims are achieved in respect of urban public transport (Thiry and Lawarree 1988; Tulkens et al. 1988; Nollet et al. 1988; Gathon 1988; Christe 1992; Isotope 1998).

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1 "The major obstacle to internalisation is the almost total lack of support for increasing the price of traffic." (Bleijenberg 1994).

4.2. Measuring and monitoring performance

4.2.1. Definitions

Before addressing the question of how to measure the performance of urban public transport services, a number of definitions are essential:

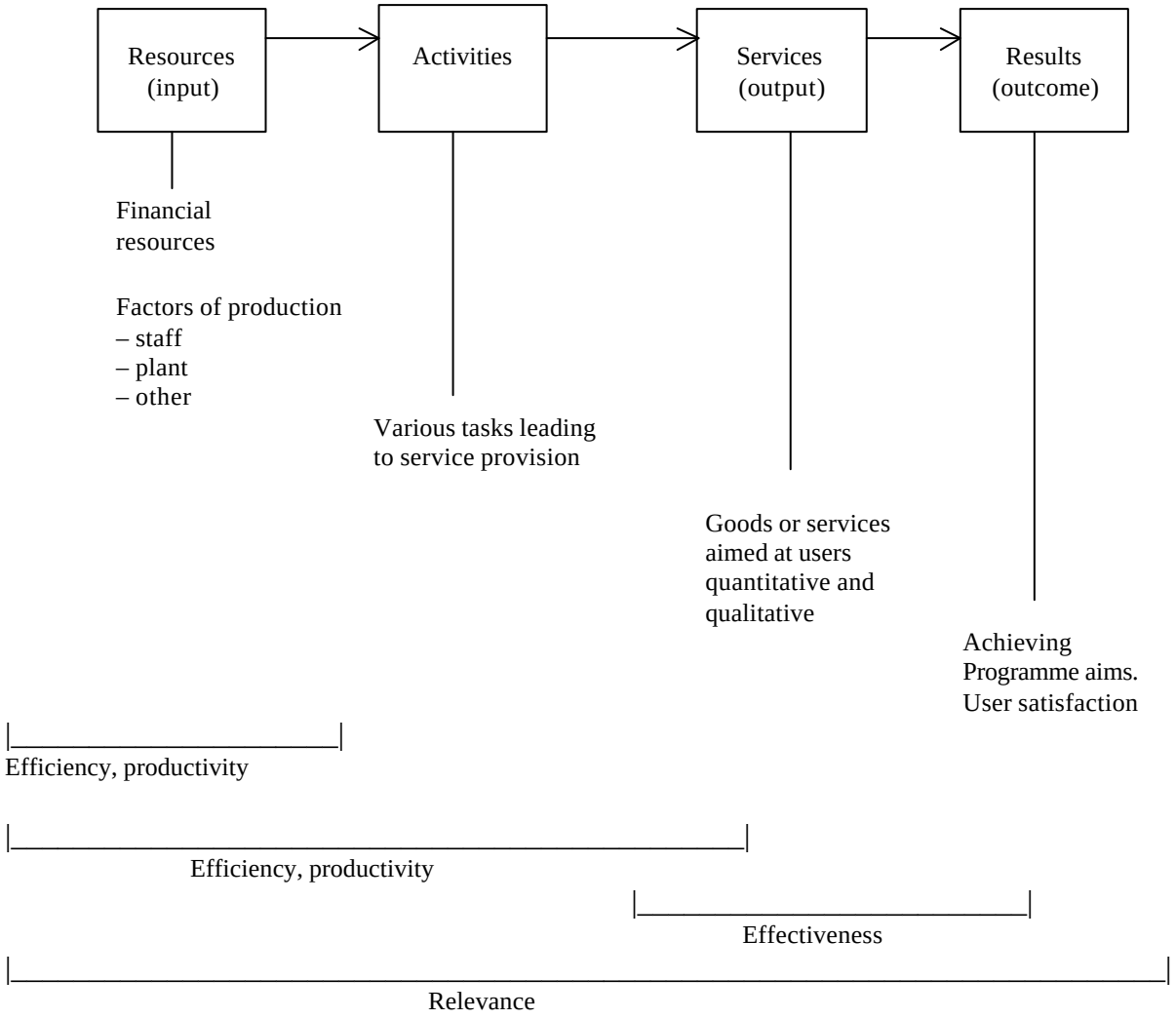
- Productivity corresponds to the ratio between services (or output) and resources (or input). A distinction must be made between the partial productivity of the factors (namely the productivity of work or of capital) and overall productivity (productivity of all the factors used in production). It should be noted that productivity can be measured in relation to a given activity (for example the maintenance of rolling stock) or in relation to the transport service.

- Efficiency – economists prefer to talk of technical or productive efficiency – describes performance by comparing the companies assessed with a model (or benchmark) company. An urban public transport company is deemed efficient if it provides a given quantity of services with the minimum of resources (efficiency of input) or if provides the maximum quantity of services given the resources used (efficiency of output). The notions of what constitutes borderline and best practice, respectively, play a key role in analysing efficiency.

- Effectiveness measures the degree of user satisfaction or the extent to which aims assigned to the operator have been achieved (such as reducing the share of individual motor traffic).

- Relevance means the comparison between resources and results which gives information on the financial resources invested.

Figure 11: Analytical model of the performance of urban public transport companies



Source: Adapted from Baker 1994.

4.2.2. Performance indicators

Unitary costs

This indicator is obtained by dividing the total cost by the services or output. The most frequently used way of measuring output in respect of transport is the number of seats per kilometres (measurement based on supply, Gathon 1988 and 1989). It is also possible to measure services in another way by the number of travellers per kilometre. However, Gathon (1989) considers that the latter method is too sensitive to demand to constitute a good indicator of the production of transport companies.

$$I_{unitary\ cost} = \frac{\text{total costs}}{\text{seats-kilometres}}$$

Rather than the total cost, it is possible to use the cost of the work factor (staff costs), or the cost of capital (loan repayments for infrastructure, rolling stock and interest charges) or again the cost of energy as the numerator. There are great differences in unitary costs between towns, due to the unequal performance of operators but also to local conditions, which render service provision more or less costly.

Partial productivity of factors

The productivity of the work factor corresponds to the ratio of the number of seats per kilometre to staff numbers.

$$I_{productivity\text{-}work} = \frac{\text{seats-kilometres}}{\text{staff numbers}}$$

The partial productivity of capital is obtained by calculating the ratio of seats per kilometre to capital. Usually, rolling stock serves to measure the use of capital (Gathon 1987; Christe 1992).

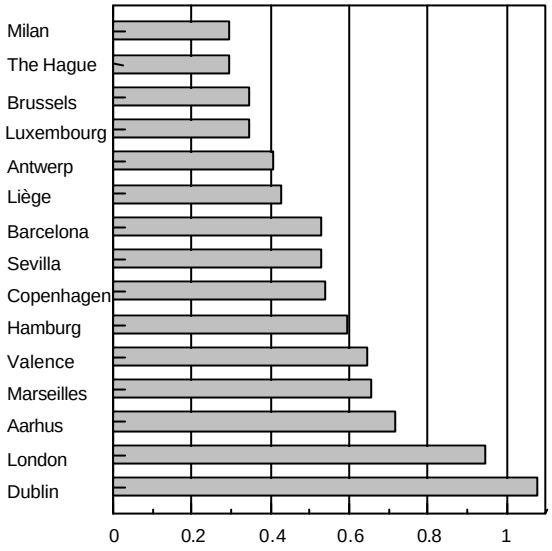
$$I_{productivity\text{-}capital} = \frac{\text{seats-kilometres}}{\text{total number of seats}}$$

Productivity varies greatly between networks. In a study on several European countries, Gathon (1987) noted differentials ranging from 1 to 8 for work productivity and from 1 to 3.5 for capital productivity. Christe (1992) highlights productivity differences ranging from 1 to 10 for both work and capital.

Degree of coverage of costs by commercial revenue

It is desirable for the operational costs of urban public transport to be funded by users rather than by taxpayers. The degree of coverage corresponds to the ratio between revenue and operational costs. For the fifteen towns studied as part of the Isotope Programme (1998), the degree of coverage varies between 0.41 (Antwerp), and 1.08 (Dublin). In an earlier study, Gathon (1988) also highlighted considerable variations between towns ranging from 0.85 in Salzburg to 1.17 in Parma.

Figure 12: Degree of coverage of costs by user payments (fares)



Source: Isotope (1998).

The overall productivity of factors

Assessing the performance of urban public transport companies by the partial productivity of work or capital is not really satisfactory as service provision always requires the implementation of several factors: staff, rolling stock and infrastructure, and energy. It is therefore preferable to make an overall assessment of productivity. The variation in overall productivity is measured by the difference between variation in the volume of production and variation of the volume of all factors from one year to the next (Geels 1988). The variation in overall productivity is calculated on the basis of data from the accounts of urban public transport companies.

Technical or productive efficiency

Technical efficiency measured in terms of output corresponds to the ratio of the company's effective production to the maximum production that it could achieve given the resources used. Measured in terms of input, efficiency corresponds to the minimum quantity of resources necessary for a specified production. The value of this definition of efficiency is that it can be used to give an accurate quantitative measurement (Tulkens et al. 1988). In measuring efficiency, it is possible to consider several types of input (for example staff, rolling stock and energy), several types of output (seats-kilometres, frequency, etc.) and to take account of the environment in which the service is provided (population density, average commercial speed, etc.).

There are numerous applications for this method of measuring the performance of urban public transport. Christe (1992) observed efficiency differences ranging from 1 to 3.5 between urban public transport companies in Switzerland. The same author also highlighted the relationship between the method of service provision and efficiency: sub-contracting and granting concessions to a private operator were the most propitious forms of organisation for the efficient running of a transport service. In an analysis of a sample of European urban transport companies, Gathon (1988) noted a 40 per cent efficiency gap between the benchmark company and the least efficient company in the sample.

The quality of services

Various indicators can be used to measure the quality of services. This is an important dimension because transport choices rely as much, if not more, on the quality of the transport than on how much it costs. Here are a few quality indicators suggested in the literature (Cancalon and Gargaillo 1991):

- Commercial speed: this variable determines user behaviour; it is also important for operators because of its impact on operational costs. Similarly, other possible indicators are the proportion of the network consisting of reserved lanes or self-contained tracks.

- Capacity use: if this exceeds 100 per cent during rush hours, passenger comfort is reduced. An excessively high or excessively low rate calls for a response from the operator, since it indicates that the service provided (supply) is not well adapted to demand.

- The state, maintenance and cleanliness of vehicles and of equipment at stops (shelters, etc.) affects passenger comfort.

- Regularity and punctuality reduce uncertainty and waiting times for users.

- The length of average waiting time when changing to another line.

Oslo's urban public transport company carries out an annual survey to assess passenger satisfaction. The survey covers seven key areas and uses sixty attributes of the quality of the service (see also Driessens 1988).

4.3. The influence of organisational methods on performance

Setting operators in competition with each other through competitive tendering is likely to improve the performance of urban public transport companies and allow better coverage of operational costs by users.

In order to highlight the relationship between the structure and performance of urban public transport systems, it is useful to group organisational methods into four main categories (Isotope 1998; CERTU 1997):

- the classic model of a regulated monopoly, the dominant system in most European countries (Austria, Belgium, Germany, Spain, Luxembourg, Greece, Italy, the Netherlands and Portugal);

- a model of limited competition, consisting of delegating management of the network by means of a contract and an auction procedure (France);

- another model of limited competition, in which the network is run competitively line by line (Scandinavian model);

- the free competition model (Great Britain, apart from the London area). Commercially viable services are left entirely to the market.

The performance of the classic model is deemed unequalled in respect of both efficiency and effectiveness. This judgement was made in a survey carried out in conjunction with the organising authorities and operators (Isotope 1998).

The Scandinavian model has the advantage of encouraging efficiency. However, there is a risk that customer needs will not be taken into account sufficiently, because there is no competition at the level at which the main features of the services are defined (tactical level).

The main advantage of the French model is that it facilitates the integration of services. However, it is less conducive to efficiency because competitive pressure on the operator is limited and it is not possible, in general, to compare performance within the network.

The free competition model is most conducive to productive efficiency. Integration of the network is more complicated and market regulation is therefore necessary. This model provides better coverage of costs by operating revenue and less reliance on subsidies.

III. FUNDING URBAN PUBLIC TRANSPORT SERVICES

1. Funding mechanisms: principles and aims

What should be the guiding principles for funding urban public transport systems? What are the aims?

A number of basic principles are described below which should be taken into consideration in choosing a financial arrangement for urban public transport (Essig 1985):

- ensuring that the operator has reliable and sustainable resources to enable it to make commitments and fulfil its task in the long term. If possible, revenue should increase in line with the operating costs of urban public transport (Vivier 1985);

- requiring a contribution from all those who benefit directly or indirectly from public transport. People who use an individual means of transport benefit from the existence of a good system of public transport because the roads are less congested and their journey times are faster. The inhabitants of towns, especially those living on main roads, also benefit from a better quality of life thanks to public transport. A financial balance needs to be found for each category of beneficiary rather than simply for direct users;

- helping to establish a co-ordinated transport policy in urban areas. The principle of setting true prices must be observed for all means of transport in order to avoid distorting choices. The well-known fact that car drivers cover only part of the social cost of their journeys must be taken into account in deciding how to fund urban public transport;

- taking account of possible economic distortions arising from contributions required from the indirect beneficiaries of transport services (other than users);

- making the operating company aware of its responsibilities. It must have a very broad margin of manoeuvre in operational management. The transport company should assume the commercial risk for traffic. This will give it an incentive to meet the needs of users and to cut its operational costs;

- ensuring that financial schemes contain sufficient incentives for the operator to meet the aims set by the public authorities;

- decision-making powers must be shared in accordance with the division of financial liability, and the decision-making authority must also be responsible for funding expenditure.

Public authority subsidies for urban public transport must aim to:

- spread the costs between direct beneficiaries (users) and the other beneficiaries of urban public transport;

- promote mobility for deprived groups of the population;

- encourage the use of means of transport which are less environmentally damaging. Similarly, the use of energy-efficient means of transport should be promoted;

- influence the urban fabric, make the town more attractive for the establishment of companies and for residential purposes.

2. The great variety of financial arrangements

The extent to which financial liability and decision-making powers are shared between central government, states (regions), local authorities and transport companies varies considerably according to the country and even within countries.

Nevertheless, it is still possible to try to devise a number of guidelines for sharing liability for the management of urban public transport systems:

- intervention by central government or federal states (regions) should be confined to issuing general guidelines and creating incentives (through financial help) aimed at ensuring that collective profitability is taken into account;

- local authorities should play a key role in planning the transport system;

- there should be a willingness to allow operating companies genuine management autonomy.

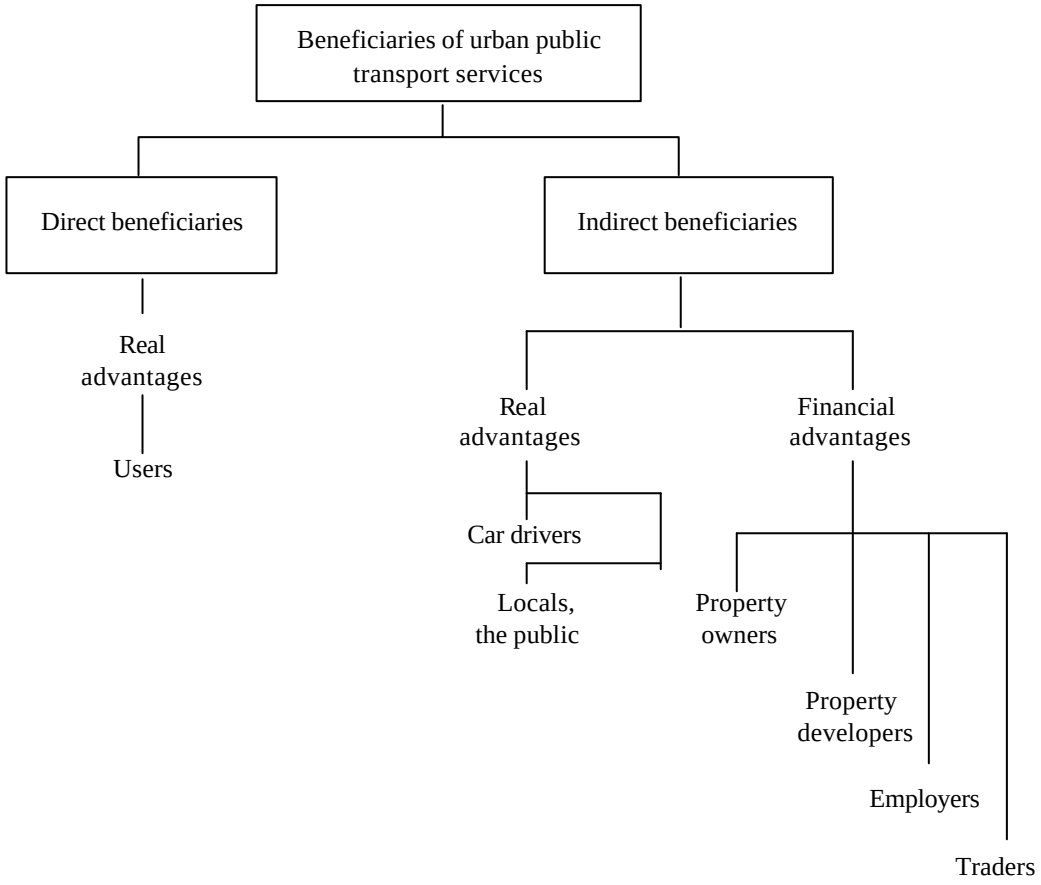
Depending on the models, companies either have very limited or very extensive financial liability. While some cover only operational costs, others are also responsible for the infrastructure, rolling stock and for funding investment. As a result, definitions of financial balance and of the coverage of costs assume very different meanings in different cases.

3. The beneficiaries of urban public transport

3.1. Direct and indirect beneficiaries

Direct beneficiaries, that is users, are the easiest to identify. The service is commercial and the benefit it offers is internalised by the sale of tickets. There are many indirect beneficiaries and the benefits they derive from the transport system are therefore very diverse.

Figure 13: Direct and indirect beneficiaries



Car drivers: public transport accounts for a large proportion of journeys in town and uses only a small proportion of the areas open to traffic. Without public transport, the flow of individual vehicles during rush hours in the centre of towns would be quite simply impossible. Car drivers benefit from reduced congestion and, thus, from lower travel costs.

Town inhabitants, people living along traffic routes: public transport is less environmentally damaging per person/km and thus contributes to a better quality of life.

Property owners: better public transport services raise the value of buildings and rents. The transport advantage is capitalised on the value of property.

Property developers: property developers who carry out property deals before a new transport infrastructure is introduced in anticipation of a rise in property values benefit from higher returns.

Traders: better accessibility by public transport enables them to improve their turnover. Given that the total expenditure of consumers is fixed, an increase in the turnover of some businesses will be matched by a fall in the turnover of others. It should be noted that this is a pecuniary advantage rather than a real benefit.

Employers: an efficient transport system allows better access to the employment catchment area and avoids the costs of a pick-up service. It will be seen that such transport advantages are normally correctly internalised by the market.

The funding model should ensure that all beneficiaries make a financial contribution and not merely users. According to Essig (1985, p. 36) the funding system introduced must therefore be based on establishing new resources levied on all economic agents who benefit, in one way or another, from the public transport system or who generate the need to travel within the town.

While the direct benefits are well known and identified, this is not the case for the indirect benefits, which are rarely assessed. In recent years, an effort has been made to estimate the costs of congestion caused by individual vehicles and the cost of environmental damage caused by both private and public transport.

The indirect advantages of public transport naturally cover a wide range of factors: real advantages which correspond to increased social well-being (reduced environmental damage or a better flow of individual vehicles, for example), the capitalisation of transport advantages on property (capital gains where the service is improved) and financial advantages (increased trade in the town centre). While it seems fair that those who indirectly derive genuine advantages because of a good system of public transport should be called upon to help fund it (internalisation of an external advantage), the situation is much less clear-cut as regards other types of indirect advantage (external financial factors).

4. Sources of funding

4.1. Structure of revenue

In France, the funding structure is strongly influenced by transport subsidies. Direct beneficiaries cover only a small proportion of expenditure.

Table 2: Division of funding of urban public transport in France (1992)

	As a percentage of operational and investment costs
State	3
Local authorities	23
Employers*	41
Commercial revenue	33
Total	100

* Transport duty.

Source: GART/CERTU, cited by CNT (1994b).

4.2. Direct or commercial revenue

Revenue is the product of fare-setting. In theory, fares are set on the basis of the total cost, the aim being to ensure that commercial revenue covers as many of the costs as possible. For various reasons, except in exceptional cases, it is not possible to cover all costs simply from the fares paid by users. Urban public transport systems are systematically loss making. One of the reasons for this is competition between different modes of transport, the fact that the captive customers of urban public transport have little spending power and the desire of public authorities to promote the use of public transport via attractive fares. Insufficient knowledge of costs – an unreliable or even non-existent accounting analysis – constitutes an additional difficulty (Cancalon and Gargaillo 1991).

Fares fulfil three main functions (Bonnafous 1985):

- they cover expenditure;
- they guide the choices of users;
- they ensure redistribution.

The first function of fares is to generate the maximum amount of direct revenue for the operating company in order to achieve a satisfactory level of cost coverage.

Fares are also designed to inform users of the true cost – the marginal social cost – of their journey. How then can it be explained that commercial revenue covers only a (small) proportion of the total cost? The reason is that individual vehicles cover very few of the social costs that they generate and it is not politically feasible to make car drivers pay the real cost of their journeys. In the interests of the community (lower external environmental costs and lower congestion costs), it is desirable for as many journeys as possible to be made on public transport. In order to achieve this, the price of public transport is set artificially below the real cost. This policy calls for two comments. First, it would be preferable to increase the cost of individual journeys if the aim is to discourage the use of individual vehicle transport. Secondly, if the aim is to attract additional users to public transport, reducing the price of public transport is probably not the best strategy. We know that the demand for public transport is relatively unresponsive to price, whereas it responds better to improved levels of service (Bonnafous 1985). In addition, adopting extremely low fares causes problems (Cancalon and Gargaillo 1991).

Fares also fulfil a social or redistributive function. Low-income sections of the population have no alternative but to use public transport for their journeys, which explains why public authorities wish to keep fares low for such people (financial equalisation function of fares). Nevertheless, if public transport is to be made a general alternative to the use of private cars, efforts need to be made to ensure that it is not seen as a means of transport for dependent people (captive low-income population).

4.3. Degree of coverage of costs by commercial revenue

The extent to which direct (or commercial) revenue covers costs is a good indicator of the financial system applied. However, comparisons are only meaningful if costs are defined consistently (operational costs and loan repayments on investment, for instance). Since the method of funding investment – in infrastructure and rolling stock – is very variable, this condition is rarely fulfilled. Great care must therefore be taken in comparing rates of coverage.

In France, there is an enormous disparity between the extent to which costs are covered depending on the town (from 20 to 80 per cent, Bonnafous 1985).

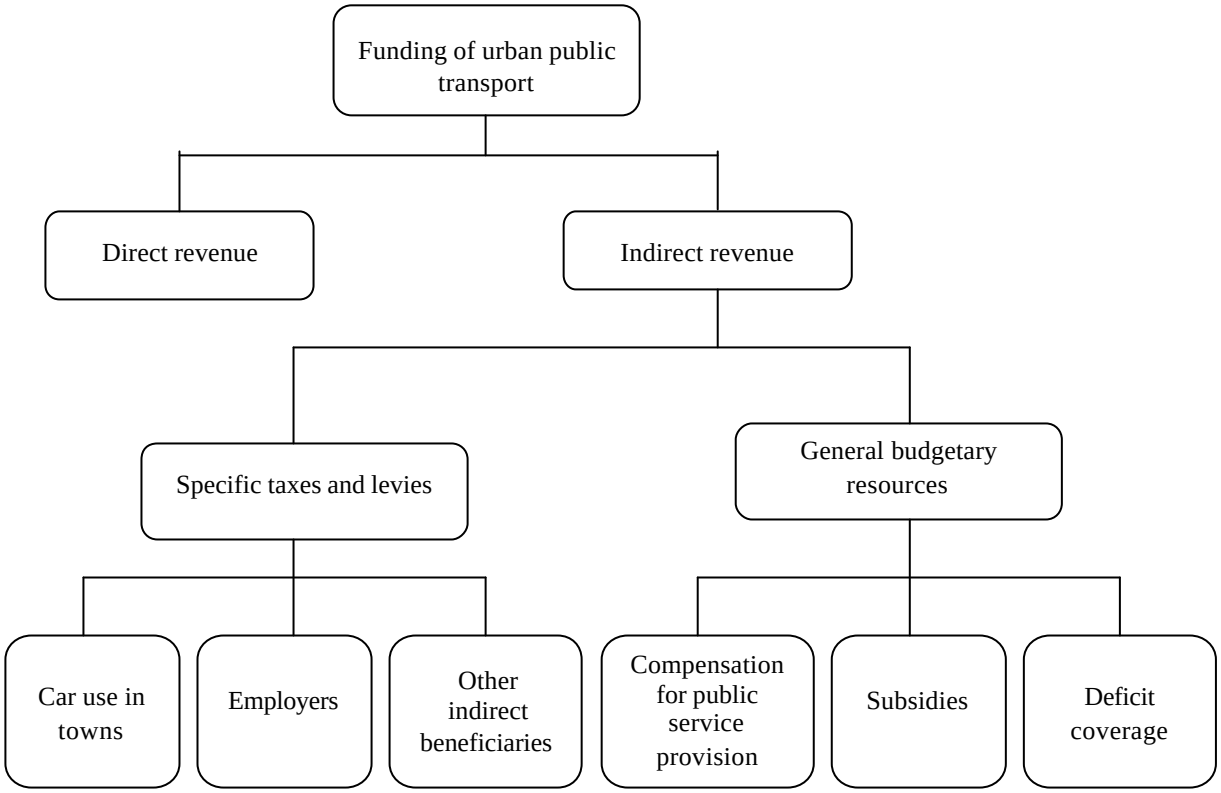
4.4. Indirect revenue

This represents a large proportion of funding of urban public transport (in France more than 50 per cent). There are three types of indirect funding:

- specific taxes or levies which are allocated to fund the investment or operational costs of urban public transport;
- compensation for carrying out public service obligations. Public authorities pay transport companies to carry out an (unprofitable) service for the community;
- subsidies to urban public transport systems (deficit coverage) funded from public authorities' general budgets (central government, federal states or territorial authorities and municipalities).

For the first two types, the indirect beneficiaries of public services provide funding. As regards subsidies and deficit coverage, strictly speaking the indirect beneficiaries make no financial contribution. Nevertheless, the indirect benefits are the main justification for public funding of urban public transport.

Figure 14: Funding sources for urban public transport



4.4.1. Specific levies and taxes

Funding urban public transport through taxing car use in towns

Efficient use of transport in towns presupposes a co-ordinated approach to setting fares for each method of transport. At the moment, this condition is not met and the price paid for car use represents only a fraction of the social cost. The financial deficit of public transport is matched by the social deficit of individual means of transport (Cancalon and Gargaillo 1991). Raising the tariffs for using a car in towns would make it possible, at least in part, to eliminate the competitive distortion between private and public transport. There are various ways of informing car drivers of the social cost of their journeys (principle of true costs):

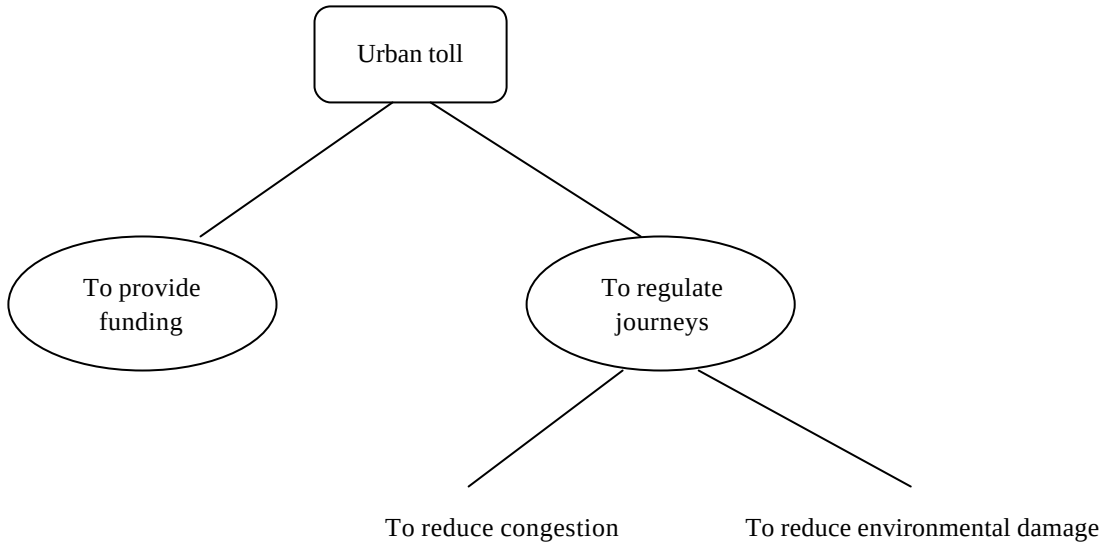
- *Supplementary tax on fuel in towns*

  All or part of the revenue raised could be allocated to funding public transport. Such a measure raises various problems; for example it would be unpopular, especially if the tax revenue were to be used for purposes other than improving traffic conditions for private vehicles, and it might encourage people to drive outside towns to buy fuel, etc.

- *Urban tolls*

  Several towns are studying the possibility or have even introduced a system of tolls aimed at controlling travel in congested areas. Tolls can be viewed as a means of funding or regulating traffic (Duchène 1994). Some of the funding could be used to cover the costs of public transport, with the same proviso as above, that the measure was deemed acceptable.

Figure 15: Functions of tolls



Adapted from Duchène 1994.

- *Pay parking*

  Pay parking is a convenient substitute for taxing vehicles on the roads. It has the advantage of being simple to introduce compared with electronic tolls.

Even if revenue from tax on the use of private cars in towns is not allocated to funding public transport, it should have a positive impact on public transport revenue. Increasing the price of journeys in private vehicles is likely to induce additional customers to use public transport and thus improve the its profitability.

Indirect funding by companies

This would involve voluntary or compulsory financial contributions from employers towards transport expenditure for those of their employees who use public transport. Such contributions would boost funding for transport companies. If employers make a substantial contribution to transport expenditure on their staff, it would be less difficult for operators to increase fares if necessary.

Another form of funding by companies consists of a compulsory levy on company payrolls, the resulting revenue being allocated to funding urban public transport systems. In France, this is the main source of funding (transport levy). The argument used to justify such a levy on wages is the possibility of ensuring that companies contribute financially to the transport costs of travel for work and occupational purposes. Companies based in large conurbations are the cause of a significant proportion of operational and investment costs not covered by commercial revenue.

In France, a transport levy (*versement-transport*) – deducted from the payroll and with a fixed ceiling – is paid by companies with at least ten employees. The rate varies from 0.5 per cent to 2 per cent (in the Paris area). Introduced in the Paris area in 1971, it was extended first to towns with more than 300 000 inhabitants (1973), then to those with more than 100 000 inhabitants (1974) and then, in 1982, to groups of municipalities with more than 30 000 inhabitants. The idea is to use this tool to introduce charges for indirect beneficiaries, namely companies. In this way, the organising authorities receive a large and reliable source of revenue enabling them to fund investment and operational costs.

It will be noted that a transport levy is above all a convenient means of funding transport costs in urban areas. However, it does raise a number of problems, for instance it is not obvious whether it is legitimate to impose such a large tax. The benefit enjoyed by companies and their staff is a transport benefit (that is a direct benefit) which has already been internalised through the price of the ticket. Consequently, the transport levy is likely to distort companies' choices since it increases wage costs and thus encourages them to restrict employment.

Funding by means of a surtax on fuel in urban areas or a system of urban tolls would clearly be more appropriate but admittedly less politically acceptable.

4.4.2. Compensation for carrying out public service obligations

Urban public transport systems offer two types of service: market services that may be funded by commercial revenue on the one hand and unprofitable public service provision on the other. "Public services" are defined as those which are unprofitable and which operators would not provide unless compensated. Compensation for reduced fares is part of the same approach (Cancalon and Gargaillo 1991, p. 289).

The principle of compensation for public service provision is interesting because it makes it possible to encourage transport companies to provide certain unprofitable services while maintaining the market logic for commercially viable services. The level of compensation is determined in advance in a contract between the public authority and the transport company. Moreover, compensation for public service provision does not constitute a subsidy but is rather a payment in exchange for a service.

4.4.3. Other public funding

Subsidies to transport companies to cover investment and operational costs constitute another important source of funding. In considering this type of funding, attention should be paid not only to explicit subsidies (those resulting in a payment) but also to implicit subsidies (administrative and technical premises made available to the operating company, non-invoiced service provision, VAT exemption or application of a lower rate, exemption from rates, etc.). In order to ensure transparency, all benefits granted by public authorities – financial transfers and in-kind benefits – should clearly appear in accounts of the public authorities concerned, as well as in those of the transport companies.

5. Funding methods and effectiveness

5.1. Subsidies

Subsidies probably have a negative impact on the effectiveness with which public transport companies perform their function and are one reason why costs can spiral upwards. A causal link between subsidies and rising costs cannot be ruled out (historically, increased subsidies have been deemed to precede rising costs, see Bonnafous 1985). Generously allocated aid perceived as a convenient and practically unlimited source of funding might undermine the sense of responsibility of the companies that receive it.

The effect of subsidies depends upon the system of granting them. Aid allocated in the form of a percentage of expenditure is risky, especially when the subsidy rate is high (Frey et al. 1994). It is essential to avoid giving operators a blank cheque. In this respect, it would be better to award aid on the basis of standard or fixed-rate expenditure rather than of actual expenditure.

5.2. Service concession with global budget

Linking the granting of aid to a contract specifying the way in which financial aid will be calculated, and the aims that the company must achieve in order to secure it, is worth further study. Might it not be a good idea to go one step further and allocate the company a comprehensive financial package to fund all operational costs not covered by commercial revenue on the basis of a service concession? The contract, drawn up in advance, possibly for a period of several years, would specify both parties' commitments, general aims, services and the comprehensive financial package.

5.3. Financial resources which create economic distortions

It is important to avoid a situation in which financial levies on indirect beneficiaries create distortions, thereby incurring economic costs greater than the amount of the levy (the problem of imposing an excess burden). All the research on the subject of ecological tax reform shows that wage tax, and in particular employers' contributions to social charges, give rise to a social cost well beyond the amount of the tax. Indeed, the large "tax wedge" on wages is one of the causes of the high unemployment levels in European countries.

From this perspective, more neutral funding, for example a supplement to sales tax (a source of funding for urban public transport in many American towns) would be preferable. However, if the tax is too high, it risks generating "shopping tourism", that is people travelling to buy cheaper elsewhere.

However, there is a better solution, namely to introduce a type of levy which will not create economic distortions and which will actually enhance quality of life by reducing the use of individual vehicles. A system of urban tolls or possibly an additional tax on fuel would make it possible to achieve this result.

Replacing a levy on wages with an urban toll would have two benefits (the double dividend theory): firstly, an economic one due to lower charges on wages and secondly an environmental one.

6. New forms of funding

6.1. Recovering (direct and indirect) capital gains on property

Vivier (1985) argues that for property developers, public transport acts as a vital determining factor, comparable to that exercised by a neighbourhood's social image, in the factors accounting for the price per square metre of new housing, the chief criteria being the neighbourhood's social composition and accessibility to the centre. The advantage of better accessibility is capitalised in the value of buildings. However, it is difficult to calculate the amount of capital gain derived from investment in transport infrastructure. As a result, the internalisation of capital gains encounters serious difficulties. This is why, in practice, it is difficult to recover capital gain through tax.

In an analysis on funding public transport in the Paris region, the RATP envisaged other means of recovering some of the benefits that it brings to property developers and owners: a charge on both the creation of office space in the town centre and on new housing throughout the whole urban transport area (RATP 1981).

6.2. Additional tax on fuel

Increasing the tax on fuel in large conurbations is sometimes advocated as a way of internalising the external costs of transport. In theory, it would be an almost ideal tool for internalising the cost of environmental damage. However, to our knowledge, such a tool has never been applied because of obstacles to its implementation and of the risk of causing people to drive outside towns to buy fuel.

6.3. Traffic licences and electronic tolls

Many automatic structures may be used to impose an urban toll. Electronic systems make it possible to set the price for use of the urban road network according to the time of day, speed and thus congestion. Increasingly, electronic systems consisting of a card in the vehicle – prepaid cards or cards that identify the car passing through – and electronic units to identify cars, are being considered. In the most sophisticated systems, users are informed immediately of the amount debited from their card or the sum to be billed. The main purpose of electronic tolls is firstly to internalise the costs of congestion, although it indirectly helps to reduce traffic nuisance. Two towns in Norway have introduced urban tolls. Since 1991, Trondheim has used a system of electronic tolls that identify an electronic card in the car. Bergen, in contrast, uses a manual system with automatic video monitoring. Bern has considered introducing a system of electronic tolls. The tariff should make it possible to internalise both congestion costs and external environmental costs. However, this is an experimental study rather than a public authority project (Duchène 1994).

IV. CONCLUSIONS AND GUIDELINES

This report has highlighted a number of problems and malfunctions in urban transport networks. The main ones are:

- the high cost of motor traffic in terms of loss of well-being (whether harm to the environment and health, physical danger or wasted time). The cost is estimated at 5 per cent of the GNP, but is higher still in urban areas;

- urban public transport revenue covers only a small proportion of operating costs;

- the difficulty of making urban public transport a genuine alternative to travel by car and increasing passenger journeys on public transport;

- the difficulties municipalities have in basing their decisions on coherent information concerning the demand for public transport;

- the difficulties municipalities have in knowing what urban transport companies' potential for improvement is in the absence of agreed performance indicators as a basis for comparison;

- the difficulties municipalities have in obtaining the necessary information for entering into contracts which delegate services to public or private operators (asymmetry of information), plus the difficulty of assessing operators' performance.

1. Observations

A key aim of urban transport policy is to control transport systems in such a way that they are compatible with sustainable development. Despite efforts by public authorities to develop road networks, a continuation of present trends could, in the long term, result in unacceptable congestion of these networks. Developments linked to new information technologies, and especially tele-commuting and the increasing opportunity for companies to set up outside industrial centres are very positive but do not allow, at least in the short run, a reversal of these trends to be envisaged. It is therefore necessary to include, within the more general regional planning policy, an integrated and coherent policy on urban transport.

One essential element of this policy is the development of a network of integrated, multimodal, accessible and efficient urban public transport. This definitely does not question individual car ownership, as cars will undoubtedly remain an important factor of personal well-being and comfort. However, and precisely in order to ensure the sustainability of the benefits of cars, their use might be deterred or restricted under certain circumstances.

There are many urban public transport organisational models, ranging from direct local council management via contracting-out in its various forms to free competition. On the basis of what information is currently available, it is not possible to state that one model will always be superior to the others in terms of performance. Whereas the transport model generally used in the United Kingdom has undoubted advantages from the point of view of productivity, it does not always make for a properly integrated network. Furthermore it

requires a regulatory body. Direct management and contracting-out without risk to the operator allow more attention to be paid to public utility, but such management systems are less satisfactory as regards efficiency and profitability. All models allow use of economic incentives as a stimulus to urban public transport performance.

The funding of urban public transport systems gives rise to a number of issues. The first is the lack of transparency, especially where costs are shared between the various partners (municipalities, planners and operators). There is universal approval of the general principle of "the beneficiary pays", but opinion varies as to its practical application. In the final analysis, the taxpayer meets a large proportion if not most of the bill. Indirect beneficiaries are rarely subjected to rigorous scrutiny. Sometimes indirect benefit is a convenient way of justifying a new tax or taking from the municipal purse. It should be noted that some "indirect" benefits are in fact transport benefits already covered by the fare.

However a policy based on prices will not always bring about the desired change in patterns of use. For example, towns which have introduced "green" network passes at reduced rates have not seen the results hoped for, as increases in passenger numbers have remained relatively modest. This is why alternative strategies need to be devised. These might include improving comfort and quality instead of reducing prices, encouraging intermodality, matching transport networks better to towns' economic and social needs, and passing more of the indirect costs of motor traffic on to motorists. However, information available in this field relates to a fairly limited number of mainly western European countries. Hence the representativeness of these experiences is rather low. It is possible that price elasticity of urban public transport demand is more important in other countries. This might mainly be the case for some central and eastern European countries, for which information concerning similar experiences or econometric studies in this respect is not available.

From these observations, several guidelines may be suggested to both local authorities in charge of urban public transport organisation, management and funding (or to regional authorities in countries where they have direct competencies in this field) and to states, within the framework of their general competencies concerning the co-ordination of policies and the spatial planning on a national level.

2. Guidelines for local and regional authorities

2.1. Urban public transport: aims and policies

- clear strategic aims should be set for urban public transport and should be pursued in all subsequent policy decisions; the aims should take into account the fundamental objectives of all urban public transport services:

  – to provide easy access to the town's various facilities, for all categories of people, including the disadvantaged, and also for goods;
  – to ensure that the mode of transport is safe;
  – to limit the adverse effects of transport on health and public well-being;

- policies should be formulated to ensure sustainable transport management in urban areas, taking into account the following considerations:

  – internalising the external costs of private vehicles (for example, through urban toll systems, management of parking spaces, etc.);
  – controlling traffic (speed limits, permits for access to town centres, etc.);
  – improving public transport supply and promoting intermodal transport.

- implement a communication policy for the benefit of users and associate them with the definition of transport goals and policies, and also to decisions concerning urban public transport organisation and management.

2.2 Organisation of the transport service

- more responsibility should be given to the operator, whether private or public; operators should be encouraged to reduce costs as well as meet users' needs. To do this, they should help bear the various kinds of risk:

  – commercial risk: they should be interested in increasing revenue from private sources (tickets, season tickets, hire and advertising);
  – production risk: they should be interested in reducing costs;
  – investment risk: they should be interested in promoting efficient investment;

  this aim of rendering transport operators more accountable should be pursued at all stages of the decision-making process: organising the service, regulating the market and setting management objectives and laying down a funding strategy;

- if the operator is private and the transport supply is determined by the public authorities, the operator should be chosen by means of a competitive tendering procedure;

- if the operator is private and the transport supply is determined by market forces, the competition system should be regulated in order to limit any adverse effects of the market;

- stimulate an improvement in performance by the operators of a particular network by means of comparisons based on appropriate and reliable indicators with performances of other operators working under similar conditions (benchmarking);

- operation agreements should be made for a fixed period of time, taking into account not only operators' needs to develop their policies and make a return on their investments, but also the need to stimulate the operator to improve performance in order to ensure a renewal of the agreement; generally speaking, a period of between five and ten years should satisfy these two requirements.

2.3. Management tools and performance indicators for urban public transport companies

- management objectives, in qualitative and quantitative terms, should be clearly laid down in the contract specifications (for private operators) or the instructions (for public operators);

- if the service is managed directly by the public authorities, an efficient management accounting system should be set up;

- the performance indicators to be calculated and published by the operators should be specified;

- public operators' employees need, for example through pay adjustments, to improve performance, measured by indicators similar to those used in the private sector;

- authorities should equip themselves with the necessary expertise to assess the performance of urban public transport services, either themselves (through specialist staff) or through independent auditors.

2.4. Funding of urban public transport services

- make the choice concerning the degree of coverage of costs by public sources with full knowledge of the facts, on the basis of precise and complete information mainly regarding transport demand. This choice should be the subject of a political decision taken in advance and should definitely not be the result of the operation. If possible, in large cities, information should be provided not only by traditional means (traffic measurements, surveys, polls) but also by economic studies outlining in particular the elasticity of demand;

- operators, whether public or private, should be provided with sufficiently stable and sustainable resources to enable them to make commitments and carry out their duties in the long term;

- all those who benefit, directly or indirectly, from the positive externalities generated by urban public transport services (accessibility, increase in property value, contribution to economic development, etc.) should be made to contribute financially, rather than individual users alone;

- care should nevertheless be taken to ensure that levies on indirect beneficiaries cause fewer distortions in the economy than they eliminate;

- to ensure redistribution of resources for the benefit of the disadvantaged, vary fare charges on the basis of a precise, reliable assessment of desired results and costs;

- all state subsidies to private operators should be granted on the basis of a contract stipulating in advance the conditions of subsidy, the objectives to be achieved and the methods of calculation;

- operators should receive compensation for fulfilling public service requirements; the amount of compensation should not be determined on the basis of actual costs, but rather on the basis of output (for example the volume of services), at a flat rate fixed in advance;

- once the proportion of total costs to be covered by public funds has been established, this amount should be primarily funded by special taxes or compensation for meeting public service requirements (serving outlying areas or offering reduced fares, etc.);

- subsidies should not be awarded to compensate for the results of bad management, but instead:

  – to divide costs between direct and indirect beneficiaries;
  – to increase the mobility of disadvantaged persons;
  – to encourage modes of transport that are less harmful to the environment;
  – to influence the urban infrastructure and make the town a more attractive place in which to live or to set up a business;

- the subsidy awarded to cover the deficit should be fixed before the start of the financial year and should be based on standard costs rather than actual expenses;

- implicit subsidies should be clearly identified (premises made available for use, lower tax rates, etc.), consolidated in all financial analyses and awarded as a result of a clear policy decision taken with full knowledge of the facts.

3. Guidelines for national governments

These guidelines are essentially addressed to national governments. They may also be suggested, *mutatis mutandis*, to the governments of federate states and to regional authorities that exert law-making competencies.

3.1. Data collection

- the business data which local authorities would be invited to collect and transmit should be laid down at national level; data should be sufficiently detailed to permit thorough analysis of management, but should also be fairly easy to assemble;

- a benchmarking system should be set up at national level on the basis of the data obtained, to allow local and regional authorities to carry out a comparative assessment of the performance of their transport operators, if they so wish. Information concerning advantages of this system should be disseminated in order to encourage local authorities to participate;

- local authorities and their associations should be involved in every stage of implementing a national benchmarking system: deciding the types of data to be collected, the indicators to be calculated and compared, and how results will be disseminated.

3.2. Assistance for local authorities

- manuals for urban public transport management should be produced and issued to local and regional authorities, giving elected representatives a concise picture of the legal framework, the chief management tools and the methods of using them;

- at the request of local authorities, a management supervision service for urban public transport companies should be provided;

- local and regional authorities and their associations should be given assistance and encouraged to set up special training schemes for their employees and elected representatives;

- co-operation between local authorities should be fostered with the aim of improving urban public transport services, for example by:

  – drawing up model partnership agreements, to encourage flexible arrangements for co-operation;
  – granting tax or financial benefits to all institutionalised forms of co-operation in this field;
  – distributing information on the results of existing co-operation initiatives.

3.3. International co-operation

- international, political, scientific and technical co-operation should be fostered in the field of urban public transport;

- efforts should be made to harmonise, at European level, existing national systems for data collection and benchmarking.

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GLOSSARY

Effectiveness

The extent to which objectives (of an organisation, policy or programme) are achieved, or the relationship between the extent and actual effect of outputs in the achievement of objectives.

Efficiency

The relationship between resources (inputs) used and services delivered (outputs). An efficient activity maximises output for a given input or minimises input for a given output. Efficiency measures take the form of output/input ratios (productivity) or expenditure/output ratios.

Elasticity

Connection between relative variations of two measures linked by a relationship. It indicates the percentage of variation of one measure induced by a variation of 1 per cent of the other measure.

Externality

Involuntary and often diffuse incidence of the activity considered in other systems which do not take part in this activity. Externalities are often difficult to evaluate and are not the subject of any negotiated compensation.

Input

Goods, services or other means entering into the process considered. Production entry flow of means.

Negative externality

Diffuse nuisance engendered by acts which do not have this goal, such as. pollution produced by road traffic.

Output

Results of the process considered. Products and services exit flows.

Positive externality

Useful or enjoyable effect produced in a diffuse and often unintentional manner in the course of activities aiming at something else.

Price elasticity

Measures the percentage of variation of the demand for a certain good induced by a 1 per cent augmentation of this good's price.

Productivity

Quantitative relationship between the production and one or several of its factors.

Quality of service

The extent to which the nature of the output and the delivery of the output meet user needs. Quality of service may be directly measurable (for example waiting time for a means of transport) or may need to be inferred from the results of customer surveys.

Service delivery

The provision of a public service for a client (individual citizen, business or other). The distinction should be made between direct provision to a client by a public sector organisation and indirect provision to a client on behalf of a public sector organisation by a third party (for example a contractor).

CASE STUDIES

FINLAND

ITALY

LITHUANIA

RUSSIAN FEDERATION

FINLAND

I. THE MANAGEMENT AND FUNDING OF PUBLIC TRANSPORT IN THE CITY OF OULU

1. General organisation

Public transport is based on bus traffic in Oulu.

Traffic permits are granted by the authorities.

The bus companies plan the routes and schedules and apply for the maintenance of traffic either via a new traffic permit or via a change to an old permit from the permit authority. In the city, the permit authority is the technical board; but when it concerns cross-border traffic, it is the provincial government.

The city publishes the traffic permit application in case the vehicles under the provincial government's jurisdiction are driven in the city area.

The police supervise the traffic.

The city is responsible for the planning, construction and maintenance of the routes used in public transport, including stops and traffic organisation equipment. The road department, in its turn, is responsible for the construction and maintenance of the roads used for public transport.

II. THE PUBLIC SERVICE ROLE OF URBAN TRANSPORT

The following steps have been taken in order to secure the service role of public transport:

- the technical board, which is an elected body, decides the routes and schedules in the city area;
- the technical board confirms annually the price of bus fares in the city, as well as the price of regional tickets;
- the bus companies which operate the system take into account passengers' feedback when planning routes and schedules.

The following public transport steps have been taken in regard to environmental protection:

- the diesel fuel used by buses has contained no sulphur since 1993 and both the amount of sulphur dioxide and particle emissions have diminished;
- the emissions of the buses in use since 1991 fall below the Euro 1 emission level;
- training given to drivers has resulted in less use of fuel and with it harmful emissions;
- the new buses, used since January 1998, contain catalysers;

- the urban bus services are seen as a whole, as well as in terms of their profitability, so that they comprise not only economically profitable routes but also routes which, although economically less profitable, are essential in serving the passengers.

III. SETTING PUBLIC TRANSPORT GOALS AND THEIR FOLLOW-UP

- when planning traffic organisation, goals are set for the routes and the type of public transport used. A traffic organisation plan, "Traffic in the Oulu Region in 2010", was completed in 1992.

- with separate traffic organisation plans, goals are set for the service level of public transport. Such goals are, for instance, waiting time at stops as well as the quality of equipment at stops. The latest public transport plan in the Oulu region was made in 1995;

- traffic research concentrates on the use of different types of public transport. The latest traffic research was made in 1994;

- the number of passengers and the system's development is monitored annually, as well as the amount of traffic finance and its impact;

- decisions on traffic organisation and public transport are made by public officials, who represent the users, and the bus company representatives;

- the city's traffic planners are public transport users.

IV. PUBLIC TRANSPORT FINANCE

1. Sources of public funds:

- the amount of public transport appropriation is annually decided by the city council;

- the state's subsidy to public transport is granted annually to the city by the provincial government;

2. Operation:

- city finances and state subsidies are used to compensate for tariff reductions in inner city and regional traffic areas and to develop public transport information and public transport planning;

- the compensation for tariff reductions finances price reductions for the following ticket types: monthly passes, city and regional tickets, changing buses for on-going journeys, travelling with prams;

- finance is based on agreements between the city and public transport operators accepted by the technical board. Tariffs are confirmed in agreements;

- the use of appropriation according to the agreements is controlled monthly and an annual summary is made of the use of the appropriation and its effects;

- subsidies to cover tariff reductions have been used in the city of Oulu since 1990. With this arrangement the reduction in the number of passengers, which continued throughout the 1980s, has been brought to a halt;

- the city has the right to make sure that the traffic is organised according to the agreements, and also has the right to control traffic budgets.

3. Investments:

- the public transport operators make independent decisions about investment financing; neither the city nor the state finances any investment in equipment;

- the municipal technical board makes annual decisions about investing in city routes as well as about the building and equipping of bus stops

V. CHANGES IN THE ADMINISTRATION AND FINANCE OF PUBLIC TRANSPORT

There have been no recent changes made in the administration of public transport and there are no planned administrative changes under consideration.

VI. FINANCIAL DATA

Table 1: Information on the municipality of Oulu

Item	1994	1995	1996
Population (number of inhabitants per 1 000)	104 346	109 094	
Area (km^2 per 1 000)		313	
Total municipal budget expenditure (million FIM)	2 852	2 934	3 049

Table 2: Transport performance (regional traffic is approximately 20 per cent)

Item	1994	1995	1996
Number of vehicles	86.00	89.00	96.00
Transport capacity (number of places)	6 201.00	6 370.00	6 407.00
Capacity use rate			
Transport supply (number places per km)	10.9/77.00	12.9/79.00	9.2/78.00
Number of passengers	6 618 095.00	6 764 599.00	7 004 375.00
Use (number of journeys per number of inhabitants served)			
Transport demand (number passengers per km)	1.07	1.13	1.14
Total output (number of km covered)	6 199 000.00	5 979 051.00	6 141 292.00
Personnel	221.00	212.00	216.00
Productivity (number of km per number of employees)	28 050.00	28 203.00	28 432.00
Commercial speed (average speed, stops included)	About 17-20 km/hr		

Table 3: Simplified profit and loss account

Item			**1994**	**1995**	**1996**
Total expenditure FIM			**58 373 580**	**60 250 154**	**61 572 018**
	Staff salaries and wages		3 173 414	31 164 831	32 674 985
	Depreciation		6 390 190	6 400 301	5 674 409
	Merchandise purchases, supplies and misc.		10 129 233	12 179 770	13 318 544
	Maintenance and operation expenses		4 989 248	4 513 666	3 936 805
	Financial (interest and other)		3 460 644	2 862 450	2 047 842
	Overheads		2 550 384	2 589 983	3 001 850
	Taxes		442 824	522 850	1 007 146
	Other		-1 292 357	16 303	-89 563
Total revenue			**58 533 812**	**60 657 124**	**63 923 926**
	Own revenue (goods sold)	Tickets, season tickets			
		Advertising, hire, other	50 518 422	51 834 521	56 389 482
	Subsidies	Operating subsidy			
		Capital outlay subsidy	8 015 390	8 822 603	7 534 444
Profit/loss for year			**160 232**	**406 970**	**2 351 908**

ITALY

I. PUBLIC TRANSPORT COMPANIES IN ITALY

As far as management by objectives, performance and auditing indicators are concerned, it must be observed that the Italian transport companies have led the way in auditing actions concerning public sector management. Even when they were still municipal departments with no legal personality, they had already adopted private accounting systems instead of the public accounting methods used throughout all public sectors in Italy.

During the period in question, budget index elaboration has allowed comparison among the various companies, in order to improve management efficiency. Budget indicators can express the effectiveness of management techniques in various companies.

At the moment, one must note that transport companies are facing a period of fundamental innovation that had been predicted within the last few years. In the past, a remarkable number of grants were available to the companies that allowed their public transport service to primarily satisfy social and political objectives. These former managements, though, demonstrated a high expansion of costs (personnel, bus transport, journeys made with a small number of passengers, etc.).

The most significant funds for financing have been donated by central government through the National Transportation Fund at regional level, and also by local government, by means of recovery plans for operating losses of the transport companies which are either completely or mainly owned by local authorities.

The operating loss was thus approved and financed, on the basis of actual results, by the municipal councils, by whom the management of the company was entirely controlled.

The value of this policy can be emphasised by observing the amount of the ticket price: the company proposed the price, but the municipality had the power to set it on the basis of political, and never economic, criteria. It must be remarked that transport companies' losses have been covered by central government by means of state transfers but latterly they have been charged to local authority budgets.

At present, there are no legislative measures that allow operating losses from 1997 and 1998 to be a charge on local authorities. This lack of legislation is to be considered within the above context of change, as well as against a background of general retrenchment of transport companies in the absence of external financial contributions. In order to better focus the management results, new budget models have been formulated, closer to the principles of free market economics.

The main innovation results from the legislation adopted in 1997, that has transferred to regions and local governments all the functions and duties in the local public transport field, in observance of principles fixed by public administration reform. Article 19 has regulated the service contracts. These constitute the central point of the innovation since "they ensure the complete correspondence between service charges and available resources net of tariff revenues,

and are stipulated before the beginning of their validity period". The elements of service contracts are defined precisely and must contain financial certainty and budget coverage. They try to produce a progressive improvement of the relation between traffic revenues and operating costs (in order to reach 35 per cent by the year 2000).

The system is intended, therefore, to remove loss recovery planning as part of the consolidated account, to be substituted by a financing system, defined in advance, which will allow a balanced budget and the integration of the regional public transport policy, as well as management rationalisation and cost reductions.

This means that such economic planning should not allow any room for poor management but, on the contrary, should permit transport companies to achieve a stable and balanced budget which will not sacrifice social requirements recognised as part of the public transport service.

II. TRANSPORT AND MOBILITY COMPANY (GENOA)

1. General presentation

The management of public urban transport is of a public nature, since the municipality of Genoa is the proprietor of 100 per cent of the company shares (the company has an autonomous legal personality).

The municipal authority approves the company's main deliberations, concerning both budgets and growth strategies. The local authority sets the ticket price on the basis of mainly political, not economic reasons.

The metro network is very limited and there is a body that co-ordinates the various types of transport services (tramways, elevators and trolley buses) with an operating centre that refers to a central division.

Environmental protection policies have been promoted only in the last few years and to this purpose a reduction of motorised transport is presently in progress, with a corollary growth in railway transport.

The trade unions are involved in the main decisions to be taken. Recently consumer associations have also been involved; representatives of these associations are designated by the municipal authority to participate in the directors' board-meetings.

The financing of capital expenses is ensured by earmarked regional and, partially, municipal contributions. Before 1996 the company, organised as a municipal company, had no legal personality and therefore had no direct access to loans. However, the company now envisages taking out loans. In the past, a self-financing policy was also adopted.

2. Financial analysis

The analysis starts with the simplest data: in the three-year period under review: the ticket price has increased by 15 per cent (a higher percentage rise than the inflation of the corresponding period), while the monthly subscription has registered a 9 per cent increase and the annual subscription has remained unchanged. As with all large companies in this sector, heavy operating losses have been registered, although figures show a decrease in the trend during the three-year period. The company assumes that a further decrease in the operating losses will take place in the near future.

The analysis of the costs show primarily a great inflexibility in the budget exclusively attributable to personnel costs, while the burden of the interest charged on previous debts has been reduced. In the three-year period a slight decrease of personnel costs is shown, obtained by reducing the number of employees. This reduction was approximately equivalent to 10 per cent of the whole staff, although the decrease in fact affected only the personnel employed in the traffic division rather than the administrative personnel. The personnel employed in the traffic division has been reduced by 13 per cent, while administrative personnel has been reduced by 5 per cent. Even if these measures have changed the relative burden of these categories of personnel one cannot say that this represents a positive aspect of management rationalisation. Reduction of personnel costs, as an absolute value and as a charge on the total costs, does not equalise, neither does the expectations regarding the decrease in personnel numbers. This is explained by the increase in overtime hours, which is certainly heavy. However, the costs in repairs and maintenance show a positive stability, while a decrease in the appropriated surplus, which may have negative effects in the future, must be carefully watched.

As regards the revenues, it is to be noted that there is a substantial stability in the absolute level of traffic income, in respect of the average revenue per passenger (+8 per cent). This factor can be explained by the decrease in the number of passengers.

The major item of revenue is made up by the National Transportation Fund that in the three-year period under review remained absolutely unchanged. Since a revenue decrease (-8 per cent) in the three-year period is shown as a consequence, the grant from the National Transportation Fund will become increasingly important in relation to the total revenue; it increased from 39.5 per cent in 1994 to 43.1 per cent in 1996.

The cost coverage realised by traffic revenues remained stable during the three-year period, and is almost aligned with the one fixed by law. In the three-year period a slight increase of traffic revenues versus the total revenues must be noted. The ratio analysis stresses a certain contraction of the company (the number of vehicles decreased by 4 per cent, means of transport provision by 10 per cent, and the number of journeys per served inhabitant by 21 per cent) which can be explained by a reduction in user demand.

This reduction in demand has to be connected in turn with the general economic crisis that has reduced the daily commuter traffic, and to the falling birth rate. The capacity usage percentage has been constant during the three-year period. The personnel decrease compared with the user decrease shows a different trend when related to the total personnel or traffic division personnel.

In the former case, in fact, the figures decrease over the three-year period, that is the percentage passenger diminution is higher than the decrease in the total personnel of the company, but it remains lower than the diminution of traffic division personnel (which has decreased in a higher measure than administrative personnel, as already mentioned above, thus the data are contradictory).

There has been a passenger diminution in respect of the worked hours (13 per cent in the three-year period) and to seat revenue per kilometre versus the worked hours (3 per cent in the three-year period). The total costs in relation to passengers and the seat revenue per kilometre appear substantially steady, although one notes the decrease of passengers and seat revenue per kilometre in respect of the served inhabitants (in the latter case about 9 per cent). During the period studied, the decrease in the number of vehicles (mentioned above) matched a modernisation of the fleet. In the last few years the relative weight of the registered vehicles increased in relation to the total number of the company's vehicles. Some comments have already been made about personnel costs, but it must be noted that the total personnel costs, at an absolute level, have remained substantially unchanged (-2 per cent) while on the contrary the average cost per unit has increased (+8.4 per cent). A slight increase in labour costs to total costs is to be seen, while traffic revenues have remained steady in relation to personnel costs.

Nevertheless, traffic revenues increase in relation to the cost of traffic division personnel. The increased amount of overtime hours is shown by the relative indices either in relation to the personnel numbers or in relation to the total overtime hours worked. The commercial speed of the transport remained steady in the three-year period.

The major elements are constituted therefore by the decrease of passengers and personnel and by the trend towards a diminution in losses. But this last point is connected mainly to company contraction rather than to the increase of management efficiency (still to be fully assessed), considering the increased cost of the administrative employees in relation to traffic division personnel.

III. MUNICIPAL BUS AND TROLLEY BUS TRANSPORT COMPANY (ANCONA) – ATMA (AZIENDA TRASPORTI MUNICIPALIZZATI AUTOFILOVIARI ANCONA)

1. General presentation

The company has been transformed recently from a municipal into a special status company (a transformation that implies the assumption of a legal personality). The company is 100 per cent owned by the municipality of Ancona. The proprietor body, as in the case of municipality of Genoa, has general auditing control over the main decisions of the company and establishes, for example, the ticket price on the basis of mainly political and not economic evaluations. The creation of an intramunicipal transport pool has been realised starting from the beginning of 1998.

The Ancona company is provided with buses, trolley buses and trams and has a unique directional operating centre to co-ordinate the system.

In the last few years greater attention has been paid to the policies concerning the major problems of the municipality (hospitals, neighbourhoods, prisons, etc.) with an expansion of services offered. Greater attention has also been paid to ecological problems.

The trade unions are involved in the main decisions to be taken. Recently, consumer associations have also been involved; some representatives of these associations are designated to the company's board of directors by the municipal authority.

Investment activity by the company has been reduced and most of the loans negotiated have been used for the purchase of railway equipment.

2. Financial analysis

Like Genoa, the municipality of Ancona analysis also starts with the ticket price, which shows an increase in the order of 20 per cent during the three-year period 1994-96. The annual subscription increase is more limited, equal to about 6 per cent. The monthly subscription increase is about 9 per cent. The total increase for the period is in the order of 5 per cent.

As far as the costs are concerned, it is to be noted that the triennial personnel costs attract a decrease of about 7 per cent, but the relative burden on the total costs (61 per cent in 1996) remains substantially unchanged. The burden of interest charges on investments is practically zero. An increase of the appropriated surplus must be considered positive. As regards the revenue, one sees an increase (in absolute terms) in traffic income, in excess of 3.1 per cent over the three-year period, and more if considered in relation to the total revenue (from 36 to 42 per cent).

Financing by the National Transportation Fund is substantially steady. The increase of the interest on bank and treasury deposits is a sign of a better general situation of liquidity. As regards the budget indices one must make the following observations:

Covering the costs with the traffic revenues has met the minimum percentage fixed by law in the total three-year period. The increase in average revenue per passenger is slightly higher and amounts to 4.4 per cent over the three-year period. Both vehicle numbers and the transport capacity appear substantially stable. The capacity usage percentage remains unchanged over the whole period, as well as the means of transport provision (-2 per cent). The index of seats per kilometre relative to personnel employed in the traffic section has improved by about 3 per cent in the three-year period, while the relation between the total costs and the number of passengers has improved by 4 per cent.

The ratio of transported passengers to served inhabitants remains substantially unchanged, as well as the ratio of seat revenue per kilometre to the served inhabitants. The vehicles available have been modernised in the last few years. As far as the personnel indices are concerned, it is to be stressed that a decrease of about 6.5 per cent has occurred over the three-year period; this decrease pertains in a different measure to the personnel employed in the traffic division (-4 per cent) as against the administrative personnel (-16 per cent). It is to be emphasised that the cost of personnel employed in the traffic division has in fact increased, as a whole, over the three-year period. The labour costs during this period have decreased (-4.25 per cent) while the average cost increased slightly (+2.4 per cent) but this increase is less than the inflation rate.

The burden of labour costs upon the total costs increased slightly (by approximately 1 per cent), as well as the traffic revenues compared with the personnel costs (+7.7 per cent). The traffic revenue has also increased compared with the personnel employed in the traffic division (+5.4 per cent). The number of worked hours is substantially stable in relation to the total personnel employed. A substantial rigidity in the company policy is to be noticed, which is characterised

on the whole by a substantial stability of the passenger numbers and of the services offered. A cost decrease corresponds to this stability, realised by means of personnel reduction, as in the similar case of Genoa. In Ancona however, the operation appears more rational and concerns, in fact, mainly the administrative employees rather than personnel employed in the traffic division. There is a strong decreasing trend in the operating loss and the company intends to present a balanced budget in this financial year. It is to be stressed that the unarguable improvements of the latest management efforts are at least partially attributable to accounting operations, by which some contingent assets of the previous financial years have been attributed to the most recent financial years.

IV. DATA COMPARISON OF THE TWO COMPANIES

The Genoa and Ancona companies reflect two deeply different situations. The Genoa company operates against a background characterised in the past by a high degree of industrialisation (that is large private and public enterprises). The Ancona company operates against a more modest background, either in respect to strictly demographic figures or with regard to the industrial profile of the area (that is businesses and industries of medium aspect).

The Genoa company has encountered a recession period in the last few years, in connection with, as previously mentioned, the mobility decrease, which was in turn linked to the economic crisis and the commuter traffic decrease. On the other hand the operating situation of the Ancona company has remained more stable during recent years.

Both companies have different types of local transport, but neither has a metro service and motorised vehicles represent the prevailing method of transport.

The first data presented in the comparative analyses of the two consolidated accounts concern traffic division personnel. While such personnel represent 68 per cent of the total personnel in the Genoa company, in the Ancona company this figure reaches 80 per cent. This difference appears all the more surprising when one takes into account that the number of administrative personnel is supposed to denote a measure of a company's growth.

In fact, we can consider that there are objective limits to reduction of the traffic division personnel while the administrative personnel, that cannot be reduced, is of relatively minor importance. Also a good computerised information system can allow rationalisation in personnel costs. In conclusion one would expect a higher percentage of administrative personnel in the Ancona company than in the Genoa company, but it is in fact the opposite.

This is an aspect that is considered of great importance when evaluating the different degrees of management efficiency in both companies.

Both companies have registered a decrease in costs over the last few years, but in the case of the Genoa company it was not sufficient to balance the cost-revenue figures, while for the Ancona company such equilibrium seems to be closer.

For both companies the external contributions, either the National Transportation Fund grant or the municipal authority's contributions, still represent an item that is distinctly higher than the traffic revenues.

The percentage use of the means of transport available presents a similar situation and demonstrates an important rise in productivity of the order of 20 per cent. It should be emphasised that the Genoa company must take into account a commercial speed which is quite low, certainly lower than Ancona's, because of the traffic congestion which is typical of the big cities (in the Genoa case the situation is aggravated because of the lack of a metro service).

V. Evaluation of financial data by way of conclusion

In Italy the entire local transport sector is characterised by service management that shows remarkable budget deficits. The budget deficits increase in relation to the number of served inhabitants and in the large cities the chaotic traffic determines a high cost either per kilometre or per employee. The cities that are the object of this study do not have a metro service, which usually presents as the only viable form of transport service. Furthermore, a metro system allows a decongestion of road traffic and reduces the use of local motorised traffic thus decreasing the average costs.

These considerations may explain why the Genoa company's operating losses are higher than those of the Ancona company, not only in absolute terms but also in relation to the user pool, that is the served inhabitants. In 1994, in Genoa, the *per capita* loss was equal to about 142 000 Italian lire, while for the Ancona company the same loss was only about 23 000 Italian lire.

But it is probable that above and beyond these difficulties under which the Genoa company is certainly operating, it is also less efficient, therefore it seems necessary to recall the seemingly excessive administrative personnel costs.

One must appreciate all the efforts used by both companies in attempting a reduction of costs. However, further reduction remains possible with regard to receipts, in which politics plays an almost exclusive part, in that setting the ticket price is attributed to the company but is in fact set on the basis of the deliberations of the municipal authority, its proprietor.

By approximate calculation it has been shown that if the companies had to fix the ticket and subscription price according to the cost-revenue balance, without taking into account external contributions by municipal owners and without considering the support of the National Transportation Fund, that is if they could count only on traffic revenues and other similar resources, the ticket price should be fixed at about 4 700 Italian lire for the Genoa company, while for the Ancona company the price should be set at about 2 900 Italian lire.

The annual subscription should be fixed at 1 600 000 Italian lire by the Genoa company and at about 900 000 Italian lire by the Ancona company. Beyond these approximate calculations, the difficulty being that certain data cannot be excluded, it seems obvious that in all probability if these very high prices were implemented they would be difficult to defend at a political level and would inevitably cause social conflict.

In conclusion, it is to be noted that the financial analyses of the transport companies of Ancona and Genoa confirm a positive trend at national level, that is a trend towards a quick reduction of previous budget deficits which were charged to local authority budgets.

At the macro-economic level, the process is further stimulated by the recent delegated legislation concerning local transport, and is also explained by the companies' general policy of cost reduction, brought about by means of reduction in personnel and the abandonment of less productive routes.

In future a contribution by local authorities that own the transport companies will be unavoidable. The same also applies to those companies that have a legal personality, since the determination of the ticket price and some social policies regarding underprivileged categories of the public forbid "pure economic" management inspired only by comparison of costs and traffic revenues.

Nevertheless, the transport sector is making big efforts, and good results have already been obtained especially in the last few years, as is evident in the case of the transport company of Ancona. And it has become more evident in the management of the transport company of Genoa in the financial years since 1996.

Financial data on the transport company of the municipality of Genoa

Company name: AMT: Transportation and mobility company (Genoa). *AMT: Azienda mobilità e trasporti (Ge).*

Management: Special status company since 1 January 1996 (formerly a municipal company).

Proprietor: Municipality of Genoa (100 per cent).

Territorial limit of service: Persons and goods: transport service within the municipal and provincial territory and part of the provinces of Piacenza and Alessandria.

Particular features of the company: The urban network of AMT is extended throughout the urban territory of the municipality of Genoa, serving a population of about 662 000 inhabitants, and routes covering approximately 350 kilometres.

Types of service: Bus, metro (2 km only), tram, trolley bus.

Tariff rates

Table 1: Average ticket price (in Italian lire)

Year	1994	1995	1996
Free travel for 90 minutes	1 300	1 500	1 500
Monthly subscription	46 000	50 000	50 000
Annual subscription	510 000	510 000	510 000

Tariff reductions

In 1966 a monthly subscription for students cost an average of 30 000 Italian lire. Senior citizens are offered a book of twenty tickets at the price of 13 000 Italian lire (650 Italian lire per ticket).

Provisions for limitation of expenditure

In the three-year period 1994-96 the reduction of expenditure was essentially performed by a freeze on recruitment, that is no recruitment to replace retiring employees.

Operating losses
(in Italian lire)

Operating losses 1994 ..... 92 811 267 721
Operating losses 1995 ..... 72 107 759 044
Operating losses 1996 ..... 56 528 961 413

The company does not borrow in order to cover losses, but receives financial resources from the municipal proprietor. The proprietor ultimately pays the amounts due to the company by instalments: the loss relative to the year 1994 had been only partially reimbursed by 1997.

Explanation of losses

The ticket price is decided by the local authority on a political basis and is not compatible with the operating costs. In the latter years a net reduction in passenger numbers has been registered, either as a consequence of the demographic decrease or of the economic crisis that has reduced the number of commuters working in Genoa. A reduction of the Transport National Fund contribution has also been registered in the context of public expenditure limitations. The 1995 and 1996 figures are due to the extraordinary deficit of 32 billion lire stemming from previous management and relating to social security contributions.

Management data
(in million Italian lire)

Table 2: Costs

Item	**1994**	**1995**	**1996**
Initial balance in hand	7 379	6 999	7 371
Plant and purchase expenditure	25 552	32 412	35 537
Works expenditure	3 818	4 101	3 944
Repairs and maintenance	11 997	12 335	13 033
Service provision expenditure	9 331	9 370	9 900
Personnel: gross wages expenditure	162 386	161 321	159 962
Personnel: social security expenditure	72 510	71 006	69 530
Taxes and fees	8 606	3 401	7 401
Interest on debts regarding controlled companies and other connected bodies	4 800	4 800	4 800
Interest on loans	9 841	6 686	1 245
Interest on short-term financing	4 446	5 229	4 715
Interest on other debts	31	35	266
General expenses	1 025	1 566	2 015
Losses on credits, bonds and other items	0	0	0
Mortgages	6 420	6 178	7 399
Appropriated surplus	46 246	16 576	12 975
Expenses quotas and losses to be depreciated	0	0	0
Contingent liabilities	4 472	555	7 043
Other expenses	0	0	0
Net income	0	0	0
TOTAL	**378 860**	**342 570**	**347 136**

Table 3: Revenue

Item	1994	1995	1996
Traffic receipts	102 196	103 226	102 800
Traffic: additional performances	11 446	7 310	4 838
National Transportation Fund	149 500	145 000	149 736
Other contributions in fiscal year account	1 042	1 712	1 496
Interest on fixed rate bonds	0	0	0
Interest on bank and treasury deposits	28	33	40
Interest on credit extended to controlled companies and other connected bodies	0	0	0
Other credit interests	6	4	5
Other benefits from cessation of activities	18	27	20
Appropriated surplus utilised in the financial year	0	0	0
Capitalised costs	1 022	1 300	9 040
Final balance	6 989	7 371	7 912
Expenditure quotas and losses to be depreciated	0	0	0
Contingent assets	10 471	2 178	12 068
Other revenues	3 331	2 301	2 652
Net loss	92 811	72 108	56 529
TOTAL	**378 860**	**342 570**	**347 136**

Table 4: Statistical financial data

Item	1994	1995	1996
Revenues from traffic receipts (million ITL)	102 196.0	103 225.0	102 800.0
Costs (million ITL)	292 972.0	297 544.0	299 277.0
Minimum coverage fixed by law (percentage)	35.0	35.0	35.0
Coverage effectively realised (percentage)	34.8	34.7	34.3
Traffic income Total revenue (percentage)	27.0	30.1	29.4
One-way urban ticket (ITL)	1 300.0	1 500.0	1 500.0
Average income per passenger	644.0	672.0	697.0

The legislation in force during the three-year period allows the 35 per cent rate to be considered as a target to be referred to and progressively reached during that time.

Table 5: Ratios

Item	1994	1995	1996
Number of vehicles	872	834	836
Transportation capacity (number of seats)	88 500	80 500	79 000
Seat capacity usage (as percentage)	22	26	22
Transportation provision (number of seats per km)	3 368 834 000	3 201 945 000	3 010 531 000
Number of journeys per served inhabitant	1.4	1.3	1.1
Seat revenue per km (ITL) Number of employed personnel	1 042 015	1 046 046	1 040 985
Seat revenue per km (ITL) Number of personnel in traffic section	1 292 000	1 084 000	1 083 000
Passengers per km Number of employed personnel	280.2	276.7	243.4
Passengers per km Number of personnel in traffic section	401	426	461
Seat revenue per km (ITL) Number of vehicles available	3 864 000	3 838 000	3 600 000
Seat revenue per km (ITL) Worked hours (ord.+overtime)	666	670	647
Passengers per km. Worked hours (ord.+overtime)	254	254	220
Total costs (ITL) Transported passengers	2 491	2 321	2 465
Total revenues Total costs (percentage)	75.5	79	83
Total costs Seat revenue per km (ITL)	112	106	115
Passengers transported Served inhabitants	230	224	215
Seat revenue per km (ITL) Served inhabitants	5 090	4 858	4 601
Number of available vehicles registered in the last 5 years Average number of vehicles available	17.7	12.4	27.8

Table 6: Local authority information

Item	1994	1995	1996
Population	661 827	650 116	654 445
Area in km^2	239	239	239
Municipal budget total expenditure (ITL)	1 707 464 427 711	1 998 606 037 569	2 240 766 343 277

Table 7: Personnel data

Item	1994	1995	1996
Number of personnel employed	3 233	3 061	2 892
Number employed in the traffic division	2 256	2 122	1 966
Number employed in the traffic division / Number of personnel employed (percentage)	70	69.3	68
Salary costs (ITL)	234 895 000 000	232 326 000 000	229 491 000 000
Average cost per unit (ITL)	72 650 000	75 890 000	79 350 000
Salary costs / Total costs (percentage)	62	67	66
Traffic revenue / Personnel costs (percentage)	43.5	44.4	44.7
Traffic revenues / Cost of personnel in the traffic division (percentage)	62.3	64.1	65.9
Worked hours / Number of employees	1.621	1.618	1.673
Overtime hours / Number of employees	179	188	210
Overtime hours / Worked hours	10.2	10.8	11.6

Table 8: Transportation performance

Item	1994	1995	1996
Number of vehicles	872	834	836
Average transport capacity (number of seats)	88 500	80 500	79 000
Seat capacity usage (percentage)	22	26	22
Average transport provision (number of seats per km)	3 369	3 202	3 011
Transportation usage (number of journeys per number of served inhabitants)	1.4	1.3	1.1
Transportation service demand (number of passengers per km)	906 044	847 002	704 030
Total service provision (number of km covered)	350	350	350
Productivity (number of km per number of employees)	1 131 550	1 071 350	1 012 200
Commercial speed (average speed, stops included) (km/hr)	15	15	15

Table 9: Simplified balance sheet

Item	1994	1995	1996
Total assets	**357 277 390 440**	**407 286 498 433**	**540 319 766 257**
Fixed net assets	101 555 343 857	91 280 285 278	121 601 035 598
Goods inventory	6 830 701 050	7 216 846 156	7 911 864 821
Short-term credits	39 314 375 362	7 593 147 636	36 592 946 152
Long-term credits	205 803 821 463	297 109 086 740	369 219 514 309
Cash in hand	498 711 387	1 903 547 474	1 901 361 155
Others	3 274 437 321	2 183 585 149	3 093 044 222
Total liabilities and share capital	**357 277 390 440**	**407 286 498 433**	**540 319 766 257**
Public share capital	47 452 043 480	62 750 631 227	98 616 786 060
Private share capital	0	0	0
Short-term debts	131 060 559 718	167 675 091 958	279 936 966 056
Long-term debts	136 700 098 901	140 166 364 974	125 080 682 746
Other	42 064 688 341	36 694 410 274	36 685 331 395

N.B. The operating loss has been included among long-term credits, since it is to be covered by the local authority.

Table 10: Simplified profit and operating loss account

Item	1994	1995	1996
Total expenditure	**378 860 250 526**	**342 570 031 138**	**347 135 543 767**
Salaries and wages	234 895 977 084	232 326 668 084	229 491 444 944
Depreciation	6 419 941 343	6 178 078 950	7 398 838 428
Goods purchase, provisions and other items	25 551 998 428	32 411 885 772	35 537 410 615
Operating and maintenance expenses	11 998 744 933	12 334 488 387	13 032 964 779
Financial expenses (interest and others)	19 119 178 117	16 749 963 701	11 024 856 435
General expenses	1 024 605 556	1 566 040 606	2 014 718 218
Taxes and fees	8 606 451 461	3 401 225 357	7 401 285 578
Other	71 245 353 604	37 601 680 281	41 234 024 770
Total income	**378 860 250 526**	**342 570 031 138**	**347 135 543 767**
Tickets	102 196 314 967	103 225 781 369	102 800 176 516
Advertising	11 448 768 877	7 309 350 000	4 839 152 618
Hiring and other	19 573 172 743	12 624 344 855	30 580 198 783
Sold goods	3 330 726 218	2 302 795 870	2 652 127 437
Loans (National Transportation Fund)	149 500 000 000	145 000 000 000	149 735 727 000
Operating loss (covered by the proprietor local authority)	92 811 267 721	72 107 759 044	56 528 161 413

Financial data of the transport company of the municipality of Ancona

Company name: ATMA: Municipal bus, tram and trolley bus transport company (Ancona). *ATMA: Azienda trasporti municipalizzati autofiloviari (Ancona).*

Management: Special status company not yet conforming to the conditions of Law No. 142 of 1990.

Proprietor: Municipality of Ancona.

Territorial limit of service: Goods and people: public transport service within the territory of the municipality of Ancona.

Particular features of the company: The urban network of the ATMA company covers the whole municipality of Ancona, serving a population of approximately 100 000 inhabitants.

Types of service: Bus, tram and trolley bus.

Tariff rates

Table 1: Average ticket price (in Italian lire)

Year	1994	1995	1996
Free travel for 90 minutes	1 000	1 200	1 200
Monthly subscription	35 000	38 000	38 000
Annual subscription	360 000	380 000	380 000

Operating losses
(in Italian lire)

Operating losses 1994 ..... 2 370 358 473
Operating losses 1995 ..... Not available
Operating losses 1996 ..... Not available

Explanation of losses

As an operating loss was reported only for 1994, one must assume that the budget was balanced for the years 1995 and 1996 thanks to a trend towards cost contraction, the grants relative to previous financial years and exceptional contingent assets. Costs-revenue balance still remains one of the main objectives and the company management has been constantly working towards this objective in the last few years.

Management data
(in million Italian lire)

Table 2: Costs

Item	1994	1995	1996
Initial balance in hand	1 009	1 008	946
Plant and purchase expenditure	3 980	3 290	2 598
Works expenditure	85	50	54
Repairs and maintenance	247	150	52
Service provision expenditure	1 835	3 015	1 493
Personnel:gross wages expenditure	11 510	10 547	10 692
Personnel: social security expenditure	6 778	5 628	6 517
Taxes and fees	203	365	236
Interest on debts regarding controlled companies and other connected bodies	247	204	169
Interest on loans	0	0	0
Interest on short-term financing	35	3	0
Interest on other debts	2	2	0
General expenses	1 135	980	1 050
Losses on credits, bonds and other items	0	0	0
Mortgages	1 095	1 002	1 485
Appropriated surplus	1 225	1 956	870
Expenses quotas and losses to be depreciated	24	38	0
Contingent liabilities	116	34	0
Other expenses	0	0	0
Net income	0	0	0
TOTAL	**29 526**	**28 272**	**26 162**

Table 3: Revenue

Item	1994	1995	1996
Traffic receipts	9 713	10 265	10 018
Traffic: additional performances	277	405	363
National Transportation Fund	11 882	13 585	12 480
Other contributions in fiscal year account	174	1 600	942
Interest on fixed rate bonds	0	0	0
Interest on bank and treasury deposits	34	478	89
Interest on credit extended to controlled companies and other connected bodies	0	0	0
Other credit interests	0	0	0
Other benefits from cessation of activities	0	15	0
Appropriated surplus utilised in the financial year	1 461	527	0
Capitalised costs	1 230	300	0
Final balance	1 008	1 092	1 800
Expenditures quotas and losses to be depreciated	0	0	0
Contingent assets	1 377	0	368
Other revenues	0	5	102
Net loss	2 370	0	0
TOTAL	**29 526**	**28 272**	**26 162**

Table 4: Statistical financial data

Item	1994	1995	1996
Revenue from traffic receipts (million ITL)	9 713	10 265	10 018
Costs (million ITL)	25 830	25 489	26 162
Minimum coverage fixed by law (percentage)	35	35	35
Coverage effectively realised (percentage)	37.6	40.2	38.3
Traffic income / Total revenue (percentage)	35.8	36.3	41.09
One-way urban ticket (ITL)	1 000	1 200	1 200
Average income per passenger (million ITL)	526	571	549

The legislation in force during the three-year period allows the 35 per cent rate to be considered as a target to be referred to and progressively reached during that time.

Table 5: Personnel data

Item	1994	1995	1996
Number of personnel employed	261	242	244
Number of personnel employed in the traffic division	210	203	201
Number of personnel in the traffic division / Number of personnel employed (percentage)	80	84	82
Salary costs (ITL)	17 967 101 564	16 848 764 174	17 209 427 357
Average cost per unit (ITL)	68 839 000	69 622 000	70 530 000
Salary costs / Total costs (percentage)	60.8	59.6	61.4
Traffic revenue / Personnel costs (as percentage)	54	60.9	58.2
Traffic revenue / Costs of personnel in the traffic division (percentage)	67.1	72.6	70.7
Worked hours / Number of employees	1 753	1 793	1 774
Overtime hours / Number of employees	67	85	82
Overtime hours / Worked hours (as percentage)	3.8	4.7	4.1

Table 6: Ratios

Item	1994	1995	1996
Number of vehicles	107	109	112
Average transport capacity (number of seats)	10 600	10 900	10 800
Seat capacity usage (percentage)	24	23	23
Transport provision (number of seats per km)	390 092 165	384 897 662	384 232 054
Number of journeys per served inhabitant	Not available	Not available	Not available
Seat revenue per km (ITL) / Number of employed personnel	1 497 153	1 524 666	1 574 722
Seat revenue per km (ITL) / Number of personnel in traffic division	1 857 582	1 896 048	1 911 602
Passengers per km / Number of employed personnel	Not available	Not available	Not available
Passengers per km / Number of personnel in traffic division	Not available	Not available	Not available
Seat revenue per km (ITL) / Number of vehicles available	3 430 243	3 434 222	3 341 148
Seat revenue per km (ITL) / Worked hours (ord.+overtime)	852	887	887
Passengers per km. / Worked hours (ord.+overtime)	Not available	Not available	Not available
Total costs (ITL) / Transported passengers	1 598	1 573	1 535
Total revenues / Total costs (percentage)	43.8	44	45.8
Total costs / Seat revenue per km (ITL)	65. 5	66	68.6
Passengers transported / Served inhabitants	184.6	180.2	183.6
Seat revenue per km (ITL) / Served inhabitant	3 883	3 856	3 863
Number of available vehicles registered in the last 5 years / Average number of vehicles available	0.03	0.05	0.08

Table 7: Local authority information

Item	1994	1995	1996
Population	100 058	99 736	99 453
Area in km^2	12 388	12 388	12 388
Municipal budget total expenditures	216 675 559 671	261 679 313 108	256 367 102 135

Table 8: Transport performance

Item	1994	1995	1996
Number of vehicles	107	109	112
Average transport capacity	10 600	10 900	10 800
Capacity usage (number of seats) (percentage)	24	23	24
Average transport provision (number of seats per km)	390 092 165	384 897 662	384 232 054
Transport usage (number of journeys per number of served inhabitants)	Not available	Not available	Not available
Transport service demand (number of passengers per km)	Not available	Not available	Not available
Total service provision (number of km covered)	315	308	316
Productivity (number of km per number of employees)	15 202	16 077	15 652
Commercial speed (average speed, stops included) (km/hr)	14.9 km/hr	15.4 km/hr	14 km/hr

Table 9: Simplified balance sheet

Item	1994	1995	1996
Total assets	**30 401 525 201**	**28 704 775 318**	**34 754 998 452**
Fixed net assets	4 717 050 207	4 084 173 525	11 158 444 776
Goods inventory	1 008 106 304	1 091 241 464	1 155 678 321
Short-term credit	20 443 008 306	15 417 123 432	16 218 985 593
Long-term credit	1 580 112 303	1 645 122 998	1 224 332 330
Cash in hand	275 003 404	6 459 448 110	4 988 443 989
Other	8 130 526	7 665 789	9 113 443
Operating loss	2 370 358 473	-	-
Total liabilities and share capital	**30 401 525 201**	**28 704 775 318**	**34 754 998 452**
Public share capital	14 204 111 234	16 514 915 328	20 425 406 842
Private share capital	-	-	-
Short-term debts	8 814 233 345	3 689 101 178	7 016 525 988
Long-term debts	7 297 081 854	8 246 413 689	7 045 532 943
Other	86 098 768	254 345 123	267 532 679

N.B. Long-term credits include operating loss, since they are covered by the local authority.

Table 10: Simplified profit and operating loss account

Item	1994	1995	1996
Total expenditure	**29 526 092 419**	**28 272 053 787**	**26 161 902 628**
Salaries and wages	18 288 010 010	16 175 989 900	17 209 427 357
Depreciation	2 344 090 789	2 996 774 676	1 485 140 650
Goods purchase, provisions and other items	3 980 456 650	3 293 090 800	3 938 079 769
Operating and maintenance expenses	247 980 980	150 890 980	108 592 979
Financial expenses (interests and others)	284 000 000	209 000 000	168 609 331
General expenses	1 135 000 000	980 000 000	1 050 043 555
Taxes and fees	203 000 000	365 090 980	236 980 890
Other	3 043 553 990	4 101 216 451	1 965 028 097
Total income	**29 526 092 419**	**28 272 053 787**	**26 161 902 628**
Tickets	9 713 045 356	10 265 000 000	10 018 092 804
Advertising	100 000 456	135 980 777	363 356 274
Hiring and other	5 286 046 607	269 870 444	1 398 302 906
Sold goods	1 000 000	15 000 000	102 150 644
Loans (National Transportation Fund)	12 056 000 000	13 585 000 000	14 280 000 000
Operating loss (covered by the proprietor local authority)	2 370 000 000	0	0

LITHUANIA

I. NATIONAL LEGAL FRAMEWORK FOR THE MANAGEMENT OF URBAN PUBLIC TRANSPORT

The management of urban public transport is regulated basically by Lithuania's Code on Road Transport that regulates the organisation and implementation of the carriage of passengers, luggage, goods and postal dispatches. This document also encompasses the public management and control of carriage, insurance, and responsibility for material damage.

According to Article 4 of the code, the Ministry of Transport together with the municipalities, implements the management of road transport. Municipalities are responsible for the management and organisation of the local transport of passengers. They also determine the tariffs for this service.

Article 8 of the code regulates the organisation of transport. Transport companies have to obtain licenses that are issued by the local authorities according to the regulations established by the state.

The code also provides for the control of road transport. This involves state supervision of drivers' activities to ensure that the law is respected. The control of road transport is entrusted to:

- the Inspection Department of the Ministry of Transport;
- other state institutions having the right of control;
- regulatory municipal bodies.

The regulations on transport of passengers and luggage and the regulations on transport of passengers by car/taxis control the carriage of passengers. The Ministry of Transport approves these regulations. The regulations on transport by trolley buses are established by local authorities.

It is important to note that the Ministry for the Reform of Public Administration and Local Authorities has prepared a draft amendment to the Code on Road Transport and presented it to the appropriate parliamentary committee. According to this draft amendment, the management of road transport is the responsibility of the Ministry of Transport, the county manager and the municipalities of Vilnius, Kaunas, Klaipëda, Ðiauliai and Panevëþys cities. The county manager manages and organises local passenger transport within the county. Municipalities of Vilnius, Kaunas, Klaipëda, Ðiauliai and Panevëþys cities manage and organise the local (urban) transport of passengers within the cities. If this draft amendment is adopted by the Seimas, the municipalities would manage the public urban transport only in big cities.

The regulation of funding, or financing, of urban public transport is provided for in the Code on Road Transport and in the regulations previously mentioned. Public urban transport is basically financed by the income of companies that provide the public transport services. Public urban transport is also financed by grants and subsidies from the municipal budget to cover concessionary fares. This latter method of financing of urban public transport is proposed in the law relating to "the system of subsidies … of the advantages accorded regarding the transport of passengers", and the newly prepared "methodology for determining the rate of defrayment".

II. MANAGEMENT AND FUNDING OF URBAN PUBLIC TRANSPORT IN KLAP?IDA CITY

At present the public transport of Klaipëda city is being managed directly by the Urban Infrastructure and Energy Department of the Klaipëda city municipality. This department presents the draft resolutions to the city board or the mayor. The resolutions passed are carried out or supervised by the personnel in the transport division of the above-mentioned department. A commission for the granting and cancellation of route licenses has been established as a municipality service; it examines the carriers' infringements, brought by inspectors, and defines the necessary sanctions.

Klaipëda city has only a bus and express-taxi network, and the appropriate local authority department manages these services. No information on the co-ordination between urban public transport management and environmental protection and urban development policies is available. There is no district in Klaipëda which suffers unusual social conditions, therefore there are no subsidies for carriers in this respect.

The main objective today is the effective functioning of routes and an assurance of the quality of services. Analytical cost accounting for urban public transport is not being carried out. *JSC Klaipëdos autobusø parkas* (Klaipëda bus fleet) presents only a consolidated report of its main economic activities. Associations of private carriers take an active part in the preparation of transport policies.

The city budget is the main funding source of urban public transport. There are no investments and no real investors available. The average price of transport is controlled by the market. Our carriers are not able to purchase new vehicles or any less than ten years old.

A department of urban transport management is to be established this year, and the dispatch service is to be taken over from *JSC Klaipëdos autobusø parkas*. No significant changes in financing are being planned.

Exact cost accounting analysis of separate types of public transport is not being carried out.

Table 1: Local authority information

Item	1994	1995	1996
Population (number of inhabitants)	203 800.00	201 490.00	203 300.00
Area (km^2)	71.05	71.05	98.35
Total municipal budget expenditure (in thousand LTL)	101 286.90	120 816.00	153 389.20

III. MANAGEMENT AND FUNDING OF URBAN PUBLIC TRANSPORT IN KAUNAS CITY

Kaunas municipality manages its own local public transport. The management of public transport is executed by the decisions of a special commission, which has been created by the mayor of Kaunas city.

There are two networks of urban public transport: one of buses and the other of trolley buses. The management of the networks is carried out on the basis of the interests of passengers (research of passenger flow, working hours of businesses, geographic distribution of frequently visited places, etc.).

Changes in the network of urban public transport are undertaken according to urban development plans. Each residential area has a bus and trolley bus service direct to the centre of the city (it is not based on the number of inhabitants living in that area). Non-profitable routes are funded from the city budget. The social needs of inhabitants are secured.

The main objective of the management of urban public transport is to ensure its effectiveness while fulfilling the transport needs of inhabitants. At the moment, because of various social issues, profit is not the main aim of transport management. Analytical accounting of each transport network is being carried out.

Kaunas trade unions strongly influence the setting of transport prices. However, trade unions do not influence other decisions.

The financing of urban transport consists of:

- revenue from tickets sold;
- municipal subsidies (the municipality organises transport for the benefit of the inhabitants) that cover the losses of the transport operating companies. The losses are caused by various social problems (the setting of tariffs, the concession system, etc.).

Kaunas municipality is at the moment deliberating the revival of bus and trolley bus companies.

Currently, buses and trolley buses charge the same ticket prices. The prices are determined by Kaunas city council according to the salary and purchasing power of the average inhabitant as well as being based on actual expenditure of the transport companies.

There have been no changes in transport funding and management during recent years.

Table 2: Kaunas local authority information

Item	1994	1995	1996
Population (number of inhabitants)	416 202.0	417 828.0	418 707.0
Area (km^2)	155.2	155.2	155.2
Total municipal budget expenditure (thousand LTL)	223 226.3	301 407.4	303 928.1

Table 3: Transport performance – Kaunas bus company

Item	**1994**	**1995**	**1996**
Number of vehicles	251	245	244
Transport capacity (number of places)	7 618	7 340	7 072
Capacity use level	0.60	0.62	0.59
Transport supply (number of places per km)	76 050 494	75 374 460	65 797 888
Use (number of journeys by number of inhabitants served)	0.0080	0.0109	0.0113
Transport demand (number passengers per km)	1 018 016 425	786 287 061	607 858 232
Total output (number of km covered)	9 983	10 269	9 304
Productivity (number of km per number of employees)	12.67	12.74	12.34
Commercial speed (average speed, stops included) (km/hr)	17.6	17.4	17.9

Table 4: Simplified balance sheet – Kaunas bus company

Item			**1994**	**1995**	**1996**
Total assets			**11 446.3**	**13 368.8**	**11 948.8**
	Fixed net assets		9 827.7	11 968.6	10 302.7
	Merchandise inventory		1 148.2	837.7	928.9
	Short-term credits		262.6	424.0	505.1
	Long-term credits				
	Cash		205.6	123.6	196.0
	Other		2.2	14.9	16.1
Total liabilities and owners' equity			**11 446.3**	**13 368.8**	**11 948.0**
	Owners' equity	public	11 442.5	15 036.8	15 036.8
		private	-	-	-
	Short-term debts		1 032.5	1 063.5	1 465.4
	Long-term debts				
	Other		1.9	237.9	275.5

Table 5: Simplified profit and loss account – Kaunas bus company

Item			**1994**	**1995**	**1996**
Total expenditure			**13 709.8**	**17 858.8**	**20 051.0**
	Staff salaries and wages		5 364.7	6 869.3	8 089.0
	Depreciation		909.7	1 306.9	1 853.5
	Merchandise purchases. supplies and misc.		5 023.8	6 189.0	6380.1
	Maintenance and operating expenses		955.5	1 047.6	989.1
	Financial (interest expenses and other)		18.9	79.5	93.7
	Overheads		528.9	734.8	847.4
	Taxes		705.7	1 264.6	1 429.4
	Other		202.6	367.1	369.0
Total revenue			**13 187.3**	**16 006.1**	**18 285.1**
	Own revenue (goods sold)	Tickets and season tickets	6 889.4	9 240.1	10 948.5
		Advertising, hire, other	227.9	516.6	458.6
	Subsidies	Operating subsidy	6 070.0	6 250.0	6 878.0
		Capital outlay subsidy			
Profit/loss for year			**-522.5**	**-1 852.7**	**-1 766.1**

Table 6: Transport performance – Kaunas trolley bus company

Item	**1994**	**1995**	**1996**
Number of vehicles	210	208	211
Transport capacity (number of places)	5 995	5 938	6 024
Capacity use rate	0.73	0.70	0.69
Transport supply (number of places per km)	67 209 945	64 035 392	39 559 288
Use (number of journeys per number of inhabitants served)	0.103	0.103	0.131
Transport demand (number of passengers per km)	1 529 180 400	146 662 400	1 037 909 000
Total output (number of km covered)	11 211	10 784	9 887
Productivity (number of km per number of employees)	10.30	9.01	8.76
Commercial speed (average speed, stops included) (km/hr)	15.2	15.2	15.2

Table 7: Simplified balance sheet – Kaunas trolley bus company

			1994	1995	1996
Total assets			**23 907.0**	**33 000.1**	**40 901.0**
	Fixed net assets		21 771.1	27 460.3	33 162.7
	Merchandise inventory		-	-	-
	Short-term credits		2 080.1	5 385.7	7 412.6
	Long-term credits		-	-	-
	Cash		55.8	1 167	249.2
	Other		-	34.4	76.5
Total liabilities and owners' equity			**23 907.0**	**33 000.1**	**40 901.0**
	Owners' equity	public	16 966.3	27 856.9	33 096.0
		private	-	-	-
	Short-term debts		2 879.3	4 433.2	2 788.0
	Long-term debts		-	-	4 539.4
	Other		4 061.4	1 210.0	457.6

Table 8: Simplified profit and loss account – Kaunas trolley bus company

			1994	1995	1996
Total expenditure			**16 485.4**	**21 637.9**	**25 257.6**
	Staff salaries and wages		5 462.3	6 185.1	7 591.6
	Depreciation		946.8	1 393.2	2 802.4
	Merchandise purchases, supplies and miscellaneous.		1 914.9	2 432.8	2 610.5
	Maintenance and operating expenses		1 142.2	1 152.3	2 068.7
	Financial (interest expenses and other)		62.1	878.7	-
	Overheads		859.8	1 126.4	1 739.0
	Taxes		159.8	236.2	8 124.7
	Other		5 937.5	8 233.2	8 124.7
Total revenue			**15 889.8**	**20 026.4**	**23 290.1**
	Own revenue (goods sold)	Tickets and season tickets	9 750.1	13 175.7	15 985.3
		Advertising, hire. other	9 750.1	13 175.7	15 985.3
	Subsidies	Operating subsidy	1 459.7	1 452.2	1 743.6
		Capital outlay subsidy	-	-	-
Profit/loss for year			**-595.6**	**-1 611.5**	**-1 967.5**

RUSSIAN FEDERATION

I. MANAGEMENT AND FUNDING OF URBAN PUBLIC TRANSPORT IN MAIKOP

Management of urban public transport in Maikop is public. Direct management of the electric buses is the responsibility of the municipality, and the state manages the bus transport companies. The functioning of the municipal company is supervised and co-ordinated by the municipal department of economy and infrastructure. Both companies are supervised and controlled by the regional department of the *Gendarmerie (GIA)* which is the Russian Transport Inspection Service, and includes representatives from the city administration.

Private transport services are provided on the basis of a contract granted by the city administration. The main means of regulation are monthly meetings on transport at the City Economy and Infrastructure Committee and through resolutions made by the Road Safety Committee.

Management of the different transport networks is centralised. The routes and timetables are fixed by the city administration; new routes are co-ordinated with existing ones. However, other transport networks are managed by independent services.

The public service role of urban public transport is clearly seen in the nature of the ownership that determines the status of municipal enterprises.

Transport routes are introduced taking into account the town's environment. Some districts have limits on the number of vehicles permitted.

The assessment of urban passenger transport performance is made by the aforementioned committee and the Transport Group of the Ministry of Economy of the Adigueya Republic. Goal-setting systems are a basis for such assessments. Timetables and routes are controlled by traffic control services of the transport companies. Traffic control is the responsibility of the *Gendarmerie* and public controllers. New routes are introduced by the committee; it also co-ordinates the work of transport companies.

Trade unions uphold the rights of their members whenever they are violated. They can raise questions of management when they affect labour conditions as stated in a contract.

The electric bus public transport system is funded from the city budget; the ordinary bus public transport system is funded from the state budget. Capital costs were covered by the imposition of a transport tax. In 1998 the transport tax was abolished which severely undermined the ability of transport companies to buy new rolling stock and spare parts.

Management data
(in million RUR)

Table 1: Local authority information

	1994	1995	1996
Population (number of inhabitants per 1 000)	175.4	176.5	177.7
Area (km^2 per 1 000)		30.9	
Total municipal budget expenditure	38 308.9	73 073.3	140 655.0

Table 2: Transport performance
(State buses/municipal electric buses)

	1994	1995	1996
Number. of vehicles			
Transport capacity (number of places)	1 218/3 476	1 092/3 558	743/3 533
Capacity use rate			
Transport supply (number of places per km)	10.9/77	12.9/79	9.2/78
Use (number of journeys per number of inhabitants served)			
Transport demand (number of passengers per km)	6.5/17.8	12.2/18.7	23.9/20.8
Total output (number of km covered)			
Productivity (number of km per number of employees)			
Commercial speed (average speed, stops included) (km/hr)			

Table 3: Simplified balance sheet
(State buses/municipal electric buses)

			1994	1995	1996
Total assets			**2 176.6/5 127**	**6 513.1/10 962**	**14 245.4/27 278**
	Fixed net assets		1 823.7/4 241	5 839.7/8 864	13 411.3/24 209
	Merchandise inventory		92.3/219	198.2/683	264.9/1 099
	Short-term credits		86.7/20	311.2/204	285.9/325
	Long-term credit				
	Cash		/1	0.2/2	0.1/1
	Other/subsidies		196.4/399	163.8/695	283.2/2 859
Total liabilities and owners' equity					
	Owners' equity	public			
		private			
	Short-term debts		582.3/1	2 126.3/83	3 251.2/245
	Long-term debts				
	Other		/529	301	348.4/182

Table 4: Simplified profit and loss account
(State buses/municipal electric buses)

			1994	1995	1996
Total expenditure			**1 917.9/2280**	**4 216.4/5 355**	**5 219.2/9 320**
	Staff salaries and wages		708.9/865	1 575/1 634	1 956.6/2 465
	Depreciation		73.7/203	110.6/625	290.9/1 884
	Merchandise purchases, supplies and miscellaneous.		440.7/608	1 218.3/1 482	1 001/ 2 608
	Maintenance and operation expenses		99.3/142	251.4/539	533.8/913
	Financial (interest and other)				
	Overheads		284.9/117	387.2/252	359.5/476
	Taxes		310.4/345	673.9/823	1 077.4/978
	Other				
Total revenue			**1 657.9/1 773**	**3 612.4/5 356**	**3 386.7/8 560**
	Own revenue (goods sold)	Tickets, season tickets	542.5/1 357	1 938.6/4 654	1 660.8/5 671
		Advertising, hire, other	/17	/14	/30
	Subsidies	Operating subsidy	1 115.4/399	1 673.8/696	1 725.9/2 859
		Capital outlay subsidy		/432.5	/169.9
Profit/loss for year			**-260/-507**	**-604/-**	**-1 832.5/-760**