DIRECTIONS IN THE ECONOMIC REGULATION OF PUBLIC BUS TRANSPORT

Dr. István Prileszky
Széchenyi István University
Department of Transport

HU ISSN 1418-7108: HEJ Manuscript no.: TAR-020905-A

Abstract

This research paper examines the issue of the regulation of public transport. Public transport is a unique service and product, deserving a specialised regulatory system. The paper gives an overview on facts and variables that effect regulation in this sector, presents case studies of the practice applied in European countries, analyses and the current Hungarian situation, and gives recommendations concerning the direction of improvements.

Introduction

It is widely accepted that the self-regulating mechanisms of the free market are insufficient to provide for the optimal functioning of the economy, and this is why in certain sectors some form of state intervention is required.
It is possible to categorise state intervention into the following three forms based on the level of government participation. Different regulatory systems may be analysed and described according to which of these three forms of intervention are employed and to what extent.

a) The setting of standards and regulations for the performance of a given economic activity. (e.g. those who are entitled to perform the activity, rules for entering and leaving the market, conditions and requirements for the performance of the activity)

b) The use of financial regulatory devices of intervention (i.e. investments using national funds, part or complete provision of financial assistance of development costs, the provision of favourable credit conditions, tax relief or the introduction of new taxes, intervention in the price fixing process, e.g. subsidies)

c) The control of the activity by the state, the founding of state-owned companies to perform the activity, generally involving the prohibition of others from taking part in the economic activity. (i.e. The state provides the service)

While, on the one hand, these forms of intervention alleviate the disadvantages of the absence of regulation, on the other hand they can lead to decreased efficiency because of lower motivation. The constant dilemma regarding regulation is finding the optimum level of intervention, where the balance of the advantages and disadvantages is most favourable.
The ideal justifiable level of regulation and the devices utilised to apply it must be selected according to the unique features of the market in which they are to be employed.
This research paper examines the issue of the regulation of public transport on public roads (referred to here as bus transport), that functions according to a timetable. The following are the aims of this paper:

- to overview the facts and variables that effect regulation in this sector,
- to present case studies of the practice applied in European countries,
- to analyse the current Hungarian situation,

- to make recommendations concerning the direction of improvements.

Bus transport is a subordinate of the larger category of public transport, and the conclusions and statements made in this research paper are generally valid for public transport as a whole, therefore the expression 'public transport' is often employed; especially when comparing it to forms of individual transport.

1 The unique features of public transport from a regulation aspect

Public transport is a **unique service and product**, deserving a specialised regulatory system. The main influences on intervention are summarised under the following points.

1.1 Externalities

Indirect externalities are associated with public transport just as with other forms of transport.
There are also positive externalities, which exist side by side with the usual negative externalities of public transport. The role of public transport must be analysed in contrast to individual private transport. A trip using public transport means that a private car was not used, so the external costs of public transport may be compared to the much greater external costs of using individual transport. **A unique feature of public transport that it is in competition with a rival, private transport, that it is in the public interest to suppress**.
A decrease in the use of private cars, and continuing to limit their use, is only possible if a public transport service of a high quality is available to replace it. Therefore we can conclude that externalities resulting from public transport also contain positive features.
In the same way **direct externalities are also positive**. In a narrow sense, it is true that each new passenger increases the crowding on public transport and in this way is an external cost, or that it is a detrimental factor for other passengers. In the same way as each new private vehicle entering the road system causes traffic congestion for other road users. In the case of private transport this negative effect increases consistently as the volume of traffic grows and causes a deterioration of traffic conditions for all road users. For public transport however, greater passenger numbers stimulates improvements, such as an increase in the frequency of buses and an increase in their capacity. This means that increased passenger numbers are not detrimental for other passengers but they are a benefit to them. This unique feature can be defined as a positive direct externality.
The direct and indirect externalities associated with regulation leads to the conclusion that **a method of control must be found which ensures the competitive position of public transport over private transport**. In other words, an ideal regulation system is one in which a high quality community transport system can develop.

1.2 Long-term effects

Public transport systems have long-term influences on the structure of a community and the division of labour in a region. The fair distribution of public transport facilities is in the interests of the society in general, because distortions in distribution can have harmful long-term effects. Regulation has to guarantee that the **position of public transport is properly protected in the long-term**.

1.3 Variations in demand over time

Demand for public transport shows significant variations over time. The service provider has to meet demand during peak time, meaning that during off-peak periods the capacity is partly under-utilised. The specific costs of the service also vary because the capacity under- utilisation during off-peak periods makes specific costs higher. It would be irrational to compensate for this variation in costs with a system of differentiated fares (the application of different fares for different time periods sometimes applied is not so much a cost compensation measure as a means of diverting demand to the off-peak period). For this reason **time-based cross financing** is applied so the higher income of the peak times finances the losses of the lower demand period.

This unique feature of public transport supports the argument for a **one service - one operator system and disputes the validity of case for competition among service providers for passengers on the same route**.

1.4 Route market

A passenger's demand applies to a specific route and if that route is not available, another cannot replace it. The disparities in demand are significant between routes and the profit obtainable is also not identical. These differences are compensated for by **route-based cross financing** more profitable lines contribute to the financing of less profitable routes. From this standpoint it appears advantageous to have only one service provider or in the case of more than one, the routes offering different profit levels are divided equally among the operators. Both of these situations can only be achieved through a regulatory system.

1.5 Returns to the density of demand

The time-based and route-based profitability differences can be traced to the fact that in this economic activity the principle of **'Returns to density of demand or Economies of density'** is valid. (Windle, 1987) The intensity of demand is the main variant making up the economics of public transport.
This feature of public transport is of crucial importance in the creation of a regulation system and **a fair solution to the problems stemming from this characteristic is the greatest challenge for regulation**.

1.6 Public services features

Public transport services are a vital part of the lives of a significant proportion of the population; this is why this service must still be provided even if the service operator incurs losses. These losses may be traced back to low demand intensity for which there are two possible reasons:

- population scarcity in the region (small villages and widely spread small farms in the long-distance and suburban public transport and city outskirts with low population density in local public transport)
- off-peak periods (evening, afternoon or weekends)

In these cases the losses made can not be avoided by setting higher fares because it would place a socially unacceptable burden on those affected, so the incurred losses must be compensated for through other methods. **The provision of a socially necessary, yet unprofitable, service** definitely requires some kind of regulatory system. This question is of outstanding importance as the unprofitable services make up a sizeable proportion of the whole of public transport (according to estimates approximately 20%). One possible solution is for the operator of the unprofitable routes to cover the losses with the increased income from the routes with higher demand (the other passengers contribute to paying the costs passengers on the unprofitable routes). **The precondition for this form of cross financing is that access to the more profitable routes is made available to the operator, and this would mean limiting competition**. Another possible solution would be the national authority, which prescribes the provision of the service to directly compensate the losses. This would entail a wider compensation of costs.
The solution to the issue of the provision of a public service is the main task of regulation.

1.7 Economies of scale

Under the concept of 'economies of scale': an increase in the size of the operator company leads to a decrease in the unit costs for services. It would therefore be advantageous to the whole community if as few as possible or, in the most extreme case, only one operator exists in the market (i.e. a natural monopoly). The question is if economies of scale operate in public transport or not.
There are serious obstacles that we face in formulating an accurate answer to this question. Based on the production equation we can not examine the increases in volume compared to the input and output relationship variations because the production equation is unknown and the statistical analysis of the cost involved for operators of a number of various sizes working under identical conditions is not available.

The relatively small amount of literature in this area (Koshal 1970, 1972; Lee and Steedman 1970) casts doubts on the existence of economies of scale in this sector rather than confirming it. On a logical basis the following approach to the question is possible:

- Increases in the size of the operating company lead to proportionally greater increases in the costs involved in administrative and management.
- Economies of scale are only possible if a larger operating company allows for the introduction of more effective technology and administrative procedures that have the effect of increasing production and a reducing costs that are greater than the increases in costs.

We can find situations that validate the existence of economies of scale as we compare the situations when one and more than one operator run on the same routes. When one operator has complete control of all the buses running on one route the work schedule of the vehicles can be more efficiently organised. The same effect can be achieved if one operator runs neighbouring routes as opportunities for effective organisation are again increased, for example with the use of uniform and automated traffic control. **With further increases in concentration this effect eventually diminishes in strength**, as further increases in size do not provide technological advantages and at the same time lead to continued accelerated increases in the administrative costs. Therefore it can be concluded that economies of scale exist when we consider regional units, however beyond this, as with all industries, we come to the issue of the **optimum operational size. Based on the principle of economies of scale it is justifiable to endeavour to have only one operator in small regions, however a monopoly on a national scale can not be supported by this argument**.

1.8 The utilisation of public infrastructure

The pubic roads, bus stops, bus terminals and stations used by public transport operators are generally not under their ownership and nor is it possible for operators to wholly own them. In a system where we provide the opportunity for competition between operators equal access to the use of these facilities must be guaranteed and care must also be taken to equally divide the costs. It is difficult to find a completely satisfactory and unbiased method for doing this. **From this viewpoint it would be more expedient if there is only one operator or if the operators are under public ownership**.

1.9 Difficulties in defining marginal costs

According to economic theory market price formation and marginal costs are related (i.e. the basis for price formation is marginal cost).
In the public transport sector **defining marginal costs is extremely imprecise**. In practice, on an operating route the marginal cost for each new passenger is zero. If we take the bus to be the unit of the service then the cost per passenger for starting a new bus can vary greatly depending on the amount of passengers travelling on the service. With these conditions **market forces can not ensure optimal price formation**, and intervention is required to ensure it takes place. Connected to this issue is the question of subsidies to improve competitiveness over individual transport, which means the passenger receives the service at less than the actual cost. **The setting of and payment of subsidies is also simpler if the number of operators is low and those operators are under public ownership**.

1.10 Flexible cost relationships

It is possible to provide bus services with varying levels of expenditure and it is difficult to establish the level of actual required expenditure.
A bus route can be provided using old and obsolete (and therefore cheap) vehicles or using modern and comfortable (and therefore very expensive) vehicles. In the same way expenditure in other areas of the service can greatly vary. These are primarily spending on the controlling and technical depots, on bus stations and on passenger information. The history of public transport companies contains numerous examples of operators that have made necessary savings when required and examples of companies increasing spending under generous state- assistance. From this we can draw two **contradicting conclusions**. On the one hand competition is required because it only becomes clear under competition what the actual minimum required level expenditure is. On the other hand national control is required so that

the quality of the service is not jeopardised to increase profits (primarily to maintain competitiveness in the face of individual transport). It can be said that **control is required to stop 'unfair savings' and competition to stop 'unfair spending'**.

1.11 The opportunity to undertake unfair competitive practices

Due to the nature of public transport **there are numerous opportunities for undertaking unfair competitive practices**. The 'know-how' of the industry, the timetable, is publicly available and a competitor can easily use or misuse it, operating a bus a few minutes before the departure of a profitable run offers itself as a guaranteed business opportunity. **One of the tasks of regulation is to protect fair operators against this type of unfair competitive practice**.

1.12 The demand for a uniform transport system

For passengers public transport must appear as uniform, offering the same conditions throughout the system. The uniformity of the system increases its acceptance by the public and encourages people to use it. A uniform service includes a co-ordinated timetable publication, identical appearance of the vehicles, unified ticketing and fare system and identical logistical elements (e.g. boarding procedures, ticket inspection etc.). Regulatory systems have to ensure that all these conditions are met.

1.13 Market competition characteristic

While there are numerous characteristics justifying the limiting of market competition, **the public transport sector also contains significant features which of a market competition economic activity**. Passengers' requirements and demand are very difficult to quantify and a keen sense of the market is necessary to meet customer expectations. A high quality service is only possible if an operator is passenger orientated and focused on the quality aspects of this service.

2 Regulation systems

2.1 Types of regulation

At the extreme end of the scale of market regulation, complete free competition, is non- existent in the public transport sector. This may be traced back to the fact that the demand for regulation is so obvious and overpowering that some form of intervention is always employed. At the other extreme end of the scale, the state planned state monopoly, existed under the former socialist countries, but is not present in market economy conditions.
All existing regulatory systems represent some intermediate form.
The practice in different countries may be analysed and categorised using the following points.

a. ownership conditions

b. rules controlling entering the market

c. method of fare control

d. level of planning

e. regulation mechanism

f. method of acquiring operators licence (rights)

g. subsidisation form

A general analysis of how heavily regulated individual markets are, using to the above points, may be carried out with the aid of table 1.
Based on practice in European Union (EU) countries three main categories may be used to differentiate the regulatory system employed:

- Competitive free market,

Table 1. Characteristics of market environments for public transport operation

Characteristic	**Market Environment**		
	Deregulated (**open access**)	**Deregulated** (**franchise**)	**Regulated**
Type of ownership	Vehicles private; infrastructure mostly private	Private and some public	Public with some private sub-contracting
Quality licensing	Yes	Yes	Yes
Fares regulation	Little or none	Yes	Yes
Access by operator to market	Open access	Protected	Protected
Level of planning	Unplanned	Planned	Planned
Regulatory mechanism	Single route	Fixed group of routes	Single route ***or*** fixed group of routes
Entitlement	None	Renewable tender	Fixed entitlement
Subsidies	None	Fixed	Flexible ***or*** fixed

Source: Nelson, J. d. et al. A Review of Market Structure and the Effects of Legislation in Inter- and Intra-Urban European Public Transport . MINIMISE project EU: IV. keretprogram contract No. ST-96-SC.40.

- Competitive tendering system,
- Heavily controlled and regulated system.

2.2 Competitive free market (competition in the market)

The Transport Act of 1980 and 1985 created a competitive free market in the United Kingdom for the local (outside London), suburban-country and long-distance bus services. With the passing of the Act the previously single company the National Bus Company was divided into 72 smaller units and privatised with the intention of assisting competition.
Apart from safety regulations, there are no restrictions on new operators entering the market. The operators are free to develop their own routes and timetables without the need to acquire an operating licence. They are required to register new routes and the only restriction in the initiation of new routes can be made on the grounds of traffic conditions. The vehicles are privately owned and the infrastructure facilities are partly state-owned, but both privately and publicly owned operators must be allowed equal access to facilities (for a fee). The operator has the right to set its own fares but, for social reasons, discounts remain in place (pensioners, students etc), and the state compensates the operator for the resulting loss of income.
The main administrative task, through the registration system, is to closely follow the development of the services and to ensure that socially necessary, but economically nonviable, routes are also provided for.
The official body in charge of transport offers assistance for the operating of the routes, but they are required to advertise tenders, and with all other preconditions being present, selecting the operator that agrees to operate the service with the smallest amount of subsidy.
The operator is required to run all registered routes and they only have the right to suspend a route by giving 90 days notice.
After the introduction of the system, heavy competition began in the market **for local and suburban passengers** (mainly with the running of more buses than with the reduction of fares), but then the stronger operators gradually pushed the competitors out of the market. (Nelson et. al,1997)
Small companies have been pushed out of the market and a small number of large companies have remained, which in turn on occasion subcontract smaller operators. The large companies **do not typically engaged in open competition with each other on the same routes**. The spread of the service and the vehicle kilometres have increased (26% between the time of deregulation and 1995), though the number of passengers has decreased (29% over the same period) (Nelson et. al, 1997), but the fares have increased. The size of the decrease in the number of passengers enables us to conclude that **in local transport open competition leads to their decline**. In the beginning new services consistently

entering and then leaving the market and the numerous frequent changes created a confused situation, which was alleviated by the creation of large companies. On the other hand **favourable changes** also occurred as numerous innovations were introduced to the operations (such as minibuses and various other types of vehicles). Improvements were made in cost controlling, the number of assistant staff required decreased (maintenance and administration), the number of workers employed in split shifts or part time increased, and national subsidies decreased.

Competition in long-distance public transport sector also commenced after deregulation (1980). This primarily took place on the popular and economically attractive routes **with price competition as the device** leading to a decrease in fares. The new smaller operators, however, did not prove to be resistant enough to present competition to the established capital and recognised name of National Express (NE) operating on a nation-wide network. Presently NE holds the largest proportion of the market so **significant competition does not exist**. The network stabilised due to the presence of a dominant operator and facilitated the sharpening of **competition with passenger railway services**. NE tried to acquire a larger proportion of the long-distance market in a number of ways. These included: the use of innovative price formation; the introduction of rapid and express services; an increase in the frequency of services; the utilisation of opportunities provided by the new motorway system; the introduction of more comfortable buses and rising the quality of services for the passenger (hostesses, video etc) and forcing workers salaries down. The number of vehicles kilometres increased by 48% and the number of passengers by 28% in the ten years after deregulation (Nelson et al.1997). These figures show **that competition can be applied to long-distance public transport with more favourable consequences than when applied to local public transport**.

In recent years the railways have began taking positive action and have improved marketing, with the introduction of a competitive pricing system. This has resulted in a decrease in the number of bus passengers so that **today in the long-distance bus sector passenger levels basically stand as they did before deregulation**.

Based on the past 15 years of experience, **competitive free market cannot be regarded as the most favourable operation system in public transport**. The results show more disadvantages than advantages. The expectation that competition will improve the quality of services and lead to increases in effectiveness has not been realised. With the concentration in the marketplace **competition has virtually all but ended**. It is debatable whether this would have been avoided if a different form of competition control had been used (e.g. with the restriction of mergers and buying up of other operators, setting of heavier punishments consequences for the abuse of market dominance). The decline in the regional sector of public transport can be traced primarily to the fact that the system allows little margin for development of a unified service and also the formation of large private monopolies allows little room for intervention to protect public interests. Perhaps **the greatest disadvantage of the system is that it provided few opportunities for the community to influence or control it**. Despite all these criticisms the system is viable and further development work is continuing at present in the United Kingdom to redress the negative features mentioned above.

2.3 Competitive tendering system (competition for the market)

This model has been applied in various forms in numerous EU countries. There are two different forms of this model that may be defined as the **'gross cost-based system' and the 'net cost- based system'**. Under the **gross cost system** the administrative official body, not the operator, receives the income collected from providing the service. The operator receives the amount to cover costs agreed upon and set out in the contract irrespective of how much income comes from its own services.

Under the net cost system the agreement is that the operator retains the income from providing the service, and if the income does not cover the costs, subsidies are added at the amount set out in the contract.

Under the gross cost system a specialised regional administrative body is created responsible for the operation of public transport. The responsibilities of this body are:

- planning the development of services,
- selecting and contracting the operators to provide the planned services,
- negotiating with the operators the payment they will receive for providing the service and paying that amount as agreed,

- setting of fares,

- supervising and ensuring that the service is satisfactorily provided.

Essentially this means that the administrative body, representing the public interests, purchases the service from the operators.
In the developing the route network and the timetable, the operators' opinions and suggestions are naturally taken into account. The operators can even initiate changes and extensions to the service. It is definitely recommended, from a professional standpoint, the operators' experience be utilised since they are in close contact with the market and are in possession of information directly from the passengers.
The selection of the operator permitted to provide the service is always competitive and done through tendering. Competition appears in this stage of the process and this is why this model can be defined as 'competition for the market' in comparison to previous model 'competition in the market'. Companies can take part in the tender if they meet various safety and other requirements (possess an operating licence). The crucial point in deciding which operator to offer the right to provide the service, within other quality parameters, is which has the lowest operating costs. This means controlling costs is of primary importance if an operator is to survive. The company agrees (is contracted) to provide the service at a given costs level and if the actual costs are higher than the planned they make a loss which is not compensated. If the actual running costs are lower than were budgeted for, a profit is made which the operator retains. The amount of income received from providing the service does not effect the operator as if it is lower than the planned for, then the administrative body pays the difference and possible higher income is deducted. The income from the service does not go the operator since it receives the amount set out in the tender contract to cover its costs. It is possible thought for the operator to withhold some of income and receive that much less to cover its costs. This is merely a technicality. On the basis of the above we can conclude **the operator accepts the 'costs risk' and the administrative body the 'income risk'**.
The most positive effect of this model is in its reduction of costs. A 10-15% reduction of costs was achieved in Sweden and Denmark at the time of the introduction of tendering. (Severin, 1995) Companies from various sectors compete for the contracts with equal opportunity. The majority of operators are national or smaller private operators, which work with a low costs level.
A feature of the system is that it creates an integrated and unified transport system within which it is unimportant to the passenger which operator runs a given route.
The problems associated with the system are also a result of the concentration of planning as it is not in the interests of the operators to rationalise or filter out unnecessary routes and the administrative body has difficulty acquiring these information. Presumably this is the reason for the high level of subsidies required, which can exceed 60% in countries those apply this system.
An even less favourable feature of this model is that operators are not dependent directly on the passengers but on an official body and this can have negative consequences for passengers. For this reason it is important that responsibilities for passenger relations are clearly set out in the agreement contract.
There are favourable results from the system's introduction in regional and suburban public transport (both fall under the same laws in the countries mentioned). A reduction in passenger number did not occur. This type of system also operates in the London local bus network where there was a 5% increase in passenger numbers in the 10 years after its introduction compared to a 29% decline outside London transport area. (Nelson, Hibbs) It appears that the position of public transport is best protected within this system, but it has to be also considered that a significant level of subsidies contributes to this.
The second model, which can be categorized under the competitive tendering system, the **'net costs based system' in a tradition sense is built on a concession tender**, through which the company wins the operating rights of individual or groups of routes for a period set out in the concession contract. **It is important that the tender is truly competitive and that after the period set out in the contract has passed that it be re-advertised and not automatically extended**. The concession licence provides exclusive rights, but does not mean the state accepts the "cost risk", **the risks of the market are completely accepted by owner of the right to operate**. This model primarily used in the long- distance public transport sector where the working of the route is difficult to directly relate to the public interests of only one community, and it is for this reason these services do not usually receive subsidies. It is characteristic when of the selecting an operator to award the tender to consider if the income of the railways will be decreased. This fact that this type of public transport is insignificant in the countries utilising this model (e.g. German and Sweden) stems from this.

This level protection of the railways' competitive advantage can lead to a reduction in services available to passengers. Analyses in Sweden show that new bus services passengers did not came across from using railways, but had previously never travelled or had used their car. Based on this it may be concluded that these types of bus services must be gradually introduced and the new Swedish Transport Policy of 1998 February contains this goal.

2.4 Heavily controlled and regulated system (no competition)

This is the traditional operation form used in EU countries and where the previous model has been applied it was the system most used previously. The discussion of the system here is primarily based on experience in Germany and the Netherlands.
The main characteristic is **the absence of competition** together with **heavy central planning**. From the outset the operator has already been selected because a state or local council company was created and the idea of changing to another operator does not even arise (and may even be legally impossible). Another scenario may be that the concession licence to operator is valid for an indefinite period or the extension of the licence occurs automatically. (E.g. The law is that the operating licence is extended if the activity of the operator does not conflict with the interests of the community meaning in the majority of cases automatic extension). In local and regional transport the operator is usually of the first type where there is usually a transport company owned by the local council with exclusive operating rights. The second type where the licence is automatically extended is usually present for regional bus routes or integrated local and suburban routes. Large transport companies pass on some activities to small and usually private subcontractors. **A new operator entering the marketplace on the basis of market competition is not permitted and if an operator is selected it guarantees complete protection against competition**.
It is the task of the local council to plan and develop a transport system to meet the requirements of the community. The planning may be partly or fully controlled by the local council or state owned company but the decisions on the formation plans are taken at administrative level.
The issues of fares and the level of subsidies are also decided on by the local or regional council, which have the task of providing the financing. (The state may also contribute to financing.) A large proportion of subsidies is common (50-60%). In recent years, under the guise of regionalisation, the connecting area around larger cities has been further integrated and co-ordinated. The existence of a unified operation of transport system in large cities creates a favourable situation for the formation of a transport association. Heavy central planning is also present in long- distance transport, but here, in the interest of a co-ordinated system, the licence giver is the central government and not the local or regional council. In the development of long-distance transport the protection of the railways is a central issue. In Germany for example the railway company Deutche Bahn also operates the long-distance bus services and because of this the long-distance bus passenger levels are low.
This system has **easily accessible advantages and disadvantages**. The advantages are that the administrative body can completely protect the interests of the community and a stable high- quality and unified public transport system can be created, which can maintain its position against individual private transport. This advantage is also present in the Swedish system but perhaps it is more evident here. The disadvantages may be grouped into two categories. The first disadvantage is the issue of effectiveness the other that of market awareness. In the absence of the threat of market competition there is no constant need to increase effectiveness to keep costs low or to improve the quality of service The concern associated with central planning is if this type of planning can truly and successfully meet the actual needs of passenger if an administrator removed from the market sitting in an office makes decisions on what people want rather than the market itself making the decision. **The experience in this regard is favourable when it comes to large cities because large city public transport is easily planned**. This situation does not apply to **long-distance public transport** where **the requirements of passengers are not so easily quantified** and there are stronger market forces. The fact that long-distance public transport is not so well developed can be traced back to this. It can be concluded that a more open and market orientated model would also obtain a more favourable position for bus public transport in the long- distance market.

3 Regulation in Hungary

3.1 The system of regulation

The main elements of the regulation system for the Hungarian public transport system are set out in the following acts, the Local Council Act (1990 Act XXV), the Concessions Act (1999 Act XVI), the Public Roads Transport Act (1988 Act I) and the Pricing Act (1990 Act XXXVII).
The rulings make a clear distinction between local and suburban or long-distance public transport.
The participants in the market at present are:

- in local public transport
  - 5 wholly or partly local council owned companies, which were founded to provide public transport
  - the Volán[1] companies, which provide local public transport services in more than 100 communities.
- in long-distance and regional public transport
  - 24 regional Volán companies
  - 4 private companies which hold concession rights

Companies, which have a majority private ownership, provide the public transport in a few smaller communities. According to the law, private companies can only receive the rights to operate through a concession tender. This means that in these communities the council enabled the private companies to operate by forming a joint company with the council and then contracting that company to provide the public transport. Then the company that received the right to operate provides the service by contracting the private company's vehicles and drivers. However, the proportion of this form of operation is very low.
In local and suburban public transport the process of deciding who has the right to provide the service is identical. The service may be provided by a majority state or local council owned company which was formed exclusively to carry out this activity, or by national or local council institutions or concession company[2].

3.1.1 Local transport

Local public transport is the service, which provides opportunities for passengers to travel within the administrative boundaries of a city, town or village. This also includes connections with the rail and water transport hub points, even if these lie outside of the boundaries of the city. It is the sole jurisdiction of the local council to provide local public transport. The local council makes the decision if local public transport is to be made available in its community or not. It is also in the local council's jurisdiction, within the limits of the law, to decide on the operator. The councils have several options of when deciding how local public transport services will be provided.
The council may:

- contract companies that have the right to operate public transport (having the right to provide public transport at the time of the law came into effect), or the Volán companies,
- issue a concession tender
- form a company for the purpose of providing the service in which the council has majority ownership,
- create a budgetary institution.

The only restriction in the selection process is a new operator can only be selected if, within three months or a prescribed longer time limit, the existing operator does not accept to undertake the provision of the necessary public transport improvement. If a new operator is not a company formed for this purpose of

[1] Volán is the name of a group of companies involved in public transport in Hungary.
[2] The winner of a concession tender is required by Hungarian law to form a concession company (*koncessziós társaság*) which has as its only economic activity the provision of the service.

which the council has majority ownership, or a budgetary institution; it can only be given the right to run a service through a concession tender.
The timetable has to be approved by local councils, so in this manner they determine the size and quality of the service and also related to this, the fare level (in agreement with the Finance Ministry). The Pricing Act lists public transport fares as an officially price controlled service, for which the highest permitted level must be established (maximum price). According to the Act, "the maximum price is set so that it will cover an efficient operator's costs and allow a reasonable profit, taking into consideration taxes and subsidies".
Price-setting is initiated on the application of the operator who is required to send its suggestion to the official price-setting body. The local council may request further information if required. Within thirty days of the receipt of the required information the body must decide on the maximum price or reject the application.
No appeal may be lodged against the declaration setting the official price but it is permitted to request a legal investigation into the process of declaration through the courts within thirty days of it having been passed.
Connected to the issue of price setting is while deciding on the maximum price the possibility exists for it to be set at a lower level and a part of the costs to be covered in the form of local council assistance (subsidies).

3.1.2 Long-distance and regional transport

Suburban transport (the Public Roads Act defines this as distance transport) is defined as public passenger transport running by a timetable and using public roads between different communities. This definition includes and the law is identical for the short distance traffic within a community's satellite communities and surrounding areas, and regional medium distance traffic and long-distance public transport between regions.
The main goal of the regulations is that the transport minister must protect the public's interests the vehicle for which is the right to approve or veto timetables and the fares (in agreement with the Finance Minister).
There are two sides on which intervention is necessary to protect the public interests these are the creation of new routes (service extension) and the cancelling of existing routes (service decrease).
The extension of the service can take place through the initiative of the operator or the Ministry. If the Transport Ministry detects that "the extension and improvement of the public transport service is justifiable" the Minister, "calls on the body managing public transport to meet the need" (Public Road Act). If within three months of the receipt of the notice the managing body does not agree to provide the service requested the minister calls for a concession tender. The aim of tender is to select the operator that will provide the service on the most favourable terms. The point to be considered in the selection must appear in the tender notice.
The only provision contained in the Act for the operator to initiate extension of the service is that the Ministry must give permission (this is also follows naturally from the Ministry's right to approve timetables), but the **there are no preconditions set out for the granting of this permission**. In coming to a decision the Ministry has established the practice of taking into account the opinions of the other service providers effected by the change. The operator initiating the new route must come to an agreement with the other effected operators and obtain a declaration from them stating there are no objections to the new route. In the absence of the agreement, permission to run a new service is only given if the competitors' buses are too crowded or the new route would offer an improvement that satisfies as yet unmet demand. **Based on this the Ministry's intervention is directed at protecting the effective operators**, and existing routes enjoy protection. As applications for changes to timetables must also have the declarations of the other effected operators the Volán companies have developed among themselves a system of agreements on timetables. Part of this system is the element that if the companies effected can not come to an agreement on a given question then the Volán Association examines the issue and effected parties agree to accept the decision.
The operators can initiate the cancelling of a route. The Act also fails to set out regulations for this situation. The practice of the Ministry in these cases is to examine how much the proposed change will effect the common good. Within this framework they analyse the number of passengers that would be effected by the change and also take into account the opinions of the local councils effected. The change is approved if:

- it is agreed upon by the effected local councils,

- if the change is not agreed to by the local council the Ministry can still approve it if it is deemed that the remaining services are of a satisfactory level (there are no normative measurements set out for this in the act).

When coming to decisions on the cancelling of the operation of an unprofitable route the Ministry weighs into its decision the amount of costs the route means to the operating company and based on its ability to cover the costs how much this endangers the effective operation of that company. **In this manner the decision is a compromise between the common good and economic considerations**.
Fares are uniform throughout the country and of a maximum price type. The considerations of the requirements of individual regions and **profitability of different routes are not taken into account and there are no provisions for dealing with this issue**. There are significant discounts in the fares system (e.g. students and pensioners discounts) but there is no general subsidies to keep the fare under the level of just covering costs.
The regulations heavily protect the market of the operator. Possibilities to entering the market are practically non-existent, because to do this the operation rights must be won through a concession tender. A concession tender is only called when the Ministry deems an improvement to be necessary and then in the given area the companies already operating (Volán Company) do not accept the request to provide the service by the given deadline. In the case of an improvement initiated from outside this system the process is that the suggested new service would first be offered to the existing service provider. If the operator does not accept the offer then a concession tender would be called for which the initiator of the proposed improvement can compete.
Since the Act came into force the calling of a concession tender for reasons of service improvement has never occurred. There were however 4 concession tenders but the aim of these was not real competitive tendering but the legalisation of the situation of companies which had operating licences under a temporary provision from the period before the coming into force of the Act.

3.2 Assessment of the system

Based on an analysis of the Acts governing the Hungarian public transport system the conclusion could be made that it can be listed under the type 2 European model. This is because it includes the concession tender. **In reality, as the tendering system does not function properly, it can be more closely described as the heavy national intervention type 3**. For the following reasons, however, there is not complete conformity to the type 3 model:

- firstly, because the operation financing conditions are ambiguous,

- secondly, because many issues regarding the relationship between the state and operating companies are ambiguous or not sufficiently regulated.

The above facts seem lead to the conclusion that **the present Hungarian regulation system can be seen as in a temporary transition stage that still has several features connected to the pre- 1989 socialist economic system**. These regulations have served well to preserve the stability of the service and contributed to the public transport system maintaining its effectiveness and achieving improvements in the period after the change in the Hungarian economic system.
A unique Hungarian feature, worthy of mention, is the well-developed and extensive long distance coach sector in comparison to other type 2 and 3 European countries. The results achieved in long-distance transport are due to the more liberal regulation practices (the freer permission granted for new routes) and the existing competition between Volán companies in this area. **This situation is a significant positive characteristic of today's transport system the protection of which is justified by all means possible**.
Set out below are the criticisms, contradictions and shortfalls of the present regulation system.
a) The separation of local and regional transport
There is a strong connection between public transport in within city boundaries and public transport in the areas surrounding the cities (suburban transport), so a unified and integrated controlling system is an essential element of modern transport planning and organisation. **It is an accepted practice in Europe that the regulatory system treats both sectors as one unit. It can be viewed as**

unfavourable that the Hungarian laws regulate the public transport of the areas surrounding a city under the same category with long-distance transport. Long-distance transport and suburban transport are two different markets. The transport in areas surrounding cities could better be integrated with local transport because of their similarities (e.g. daily use is characteristic). The present line of differentiation in the regulations is drawn at the boundaries of communities, whereas the real regional division of labour differs from this (the larger the city, the larger the difference). This regulation obstructs to the integration of local transport with the public transport of the connected surrounding area.

b) Ambiguities in the relationship between local councils and operators

There are several issues associated with the relationship between local councils and between operators not owned by local councils (Volán companies) left uncovered sufficiently by the Acts. The following basic issues are covered: operators can claim payment to cover their costs and a reasonable profit (Pricing Act), the local council can intervene in the service (timetable and fare setting rights), and when it is necessary select another operator. Going beyond this, numerous other issues arise for which there are no sufficiently detailed regulations. These are for example:

- the rights of the local council to check the operation of the service,
- the possibilities of the local council to view the operators' account (according to the Pricing Act it can request information for the process of setting of fares but it is questionable whether that is sufficient to establish real justifiable costs),
- the obligations for the operators to provide data and information to the local councils,
- the protection of the operator in the event of the local council misusing its right to set fares and in this way not providing sufficient income to cover costs,
- the general issue of the financing of local public transport.

Of the issues listed above **the greatest proportion of problems that arise are connected to the last issue of financing**. The defined price, as is generally characteristic, does not cover the cost of the renewal of vehicles, and in several cases does not even cover operation costs. The payment of subsidies for the improvement of the service has not taken place in those cities where Volán provides the service (despite it being provided for in the Transport Policy). The financing issues extend beyond the sphere of the Acts covering public transport and extend to the general issues of the laws concerning the management of local councils.

c) Insufficient regulation

The Acts do not regulate, or sufficiently regulate, several crucial issues. Apart from the problems of local public transport already mentioned above, there are issues involved in long-distance transport for which the Acts doe not provide sufficient regulation. The first of these issues is connected to **the sphere of the timetable approval process**, namely when can the application to cease a route or start a new route be refused. The question is often raised that there is no definition of the **obligation for the provision of basic needs**. Connected to the issue of concession tendering it is not defined under what circumstances it is obligatory to offer a tender. According to the Acts the Ministry is responsible for the provision of the service and the protection of the interests of the public, however no mention is made of tasks related to this.

d) Competitive feature do not function properly

There are competition elements in the regulations of both local and suburban public transport, primarily in the possibility for concession tendering. This element serves as a constant threat that if the activity is not appropriately carried out then the administrative body can appoint another operator. **In reality this administrative instrument has failed to function properly**. A few cities made attempts to change the local public transport operator but these were unsuccessful because no appropriate alternative operator came forward. The reason for this is that there is no guaranteed return on the investment of providing this service under the current financing situation.

In regional transport the Ministry has not taken advantage of its right to offer tenders. It may be concluded that **the concession tendering system does not function properly. It is questionable if the reason for this is that concession-tendering system is inappropriate in the sector, or if the spirit of the Acts has not appropriately been implemented**.

e) Lack of the obligation of public service financing in regional transport

There is an **obligation to operate** unprofitable routes that serve the public interest, as the Ministry in effect prescribes this with its right to approve timetables. **There exists no method of compensation to balance this obligation**.
Cross financing through the income provided by more profitable routes, as it happens currently, is not a satisfactory solution to problem, as the Volán companies have to take a different share of this financial burden. The obligation to operate unprofitable routes mainly exists in **certain regions** (small villages and areas close to the country's borders), and only the companies that operate there have to suffer the losses. These companies, just because of the geographical features of the area, have a lower profit making potential and so have less opportunity to undertake cross financing.
A definite shortfall of the current system that there is no clear statement of the obligations for providing a public service and the identification of the costs as this ambiguity leads to difficulties.

f) Differences in profitability

Besides the obligation to provide a public service mentioned under the previous section, various Volán companies have significant differences in their opportunity to make a profit. As in this economic activity the "returns to the density of demand" principle is characteristic the companies operating in a more favourable region (larger communities, better road network, more highly economically developed, etc) have better opportunities to make profit. Considering there is no mechanism for correcting this imbalance, **in the long-term the development of these companies will be effected which will lead to greater and greater unjustifiable differences in the quality of services in different areas**.

g) Over concentrated area of jurisdiction

The Ministry holds the responsibility for suburban public transport through its right to approve or refuse timetables. This right is over- centralised especially as it also covers satellite communities surrounding large cities and regional public transport. **It is difficult to imagine that the Ministry could represent the public interests' of the whole country equally with attention to all the details in such a basically regional question as public transport. The best assessment of passengers' requirements can be made at a local level**. Local councils can express their opinions in relation to various routes effecting them, but the expression of an opinion is completely different from the right to make decisions in the matter. **This issue is also related to financing responsibilities**. As the local council has no duty to finance intercity public transport, they have too little exposure to the passengers to be able to determine their demands from the public transport system. Associated with this same issue is the fact that other local decisions, which effect the demand for public transport, (e.g. health services, the organisation of education in the region) are made by bodies which are not obliged to take the transport consequences of their decisions (i.e. local and county councils).
The real danger in the decisions being made at Ministry level is not that the Ministry will make bad decisions, but **it is a shame that through lack of responsibility and jurisdiction there is no analysis, integration, co-ordination and initiatives made at the local level**.

h) Lack of planning in public administration

Connected to the previous point is the situation that planning in suburban and long- distance transport essentially only takes place at the operating company level and the Ministry has only an approval function. The question arises if the protection of the publics' interest does not demand greater participation on the public administration level too. There would be greater opportunity for this if the approval of timetables would take place at a more decentralised regional level.
It is interesting that these deficiencies are also present in administrative participation for local public transport, even though it is under the control of local councils. The real reason for this can be traced to the fact that in recent years the local councils did not have this duty so its apparatus and expertise is insufficient to bridge the gap to meet the requirements of today.

i) Cross financing between local and suburban transport

Despite the regulations rule out the possibility of cross financing between local and regional transport, it does take place in practice. The regulations do not contain a guarantee that this will not happen.

j) Discriminative features

According to the Public Roads Act, "companies formed by the state or local councils for providing public transport" can only extend their activities with the approval of the body with the right to offer concession tenders. This regulation means that extension is possible when the permission is granted (even without a concession tender). The Act does not make this opportunity available to concession companies, which means there is discrimination between the two types of organisations. Although the Acts do not set it out clearly, in this case, in practice there is discrimination between state owned and concession companies.

3.3 Directions for development

The first decision which has to be made, when it comes to the directions for development of the regulations in Hungary, which European model do we wish to follow. The free competitive market model does not appear to be too successful because it is alien to current practice in Hungary and does not follow the system used in the majority of European countries. It seems the only realistic options would be the application of type 2 and type 3 models.
Concessions, which are the basis of competitive tendering system, have not justified their use in recent years. To ensure true competition in the tendering process change is needed in operators' structure. The competition between Volán companies, which are organised on the basis of geographical areas, would only commence if the structure were changed so that the operational areas overlapped each other. (In England the privatisation of the National Bus Company took place so that intentionally there would be more than one company in one region assuming that this would make it easier for competition to commence.)
Another precondition for true competition to take place is that each advertised unit is profitable in itself, and to achieve this an increase in government spending (i.e. subsidies) is necessary. It is possible that **the paradox is true that it is necessary to heavily increase government spending in order to introduce the tendering system of which the aim is to decrease government spending**.
On the basis of the above it appears that the application of the non-competitive heavily controlled type 3 model would be the most appropriate under the present circumstances. This argument is also supported by the argument that this system requires the least amount of change and in this way it involves the lowest introduction costs.
A number of European countries are in the process of making changes to their regulation systems. It would be advisable to adopt a wait and see attitude toward these efforts and then only then taking up a different solution if it has proven its efficiency over a sufficient amount of time.
The type 3 model, that of the heavily regulated system, conforms to European Union standards since it is applied in many of the member states. This system provides the opportunity for public transport not to be pushed into the background as motorization continues to increase. It even sets favourable conditions for the necessary integration, co-ordination and harmonised development.
Though **efficiency** is the main drawback regarding this model, it is manageable, since there are numerous examples worldwide of companies that work under national direction with a satisfactory level of effectiveness, if the state management uses the correct devises to achieve this. **These devises are well known, and the thorough application of them is a precondition for the type 3 model to operate for the good of the whole community**.
Listed here are the 8 basic elements of the proposed new system - primarily those differing from the system currently in use.

1. The task of the development and operation of public transport remains in the hands of the state and local councils. Companies with operating rights are involved through contracts with state or local councils. The contracts primarily protect the operation of companies formed this purpose with a majority national or local council ownership. The private sector will take part through related contracts and subcontracts. The possibility for any company to enter the market with a new service could be catered for providing it does not conflict with the interests of another existing operator and the new activity would fit into the unified public transport system.

2. A certain degree of competition is possible in long-distance public transport in the course of issuing permits. The limiting of competition in this sector is only expedient in as far as it provides protection for an operating company against unethical competitive practices.

3. It is practical to draw the boundary of jurisdiction for this carrying out of this task between national and local councils between local transport (local public transport, transport to the satellite areas surrounding cities and regional transport) and long-distance public transport. The responsibility for providing the service also includes the organisation, co-ordination, permit issuing and financing tasks. Co-operation must be developed between local councils that are effected in questions of public transport. The form of this co-operation needs to be clearly defined. The central national budget provides normative assistance for the solution.

4. The operator requires a permit to operate and a contract is necessary to carry out a given task. The operating permit can be obtained if the operator is deemed to be technically, ethically, professionally

and financially sound. The operating permit allows the operator to carry out public transport activities but does not automatically guarantee that they will receive a contract to run a route.

5. The official authorised body in the each type of public transport is responsible for selecting the operators, and these bodies must take into account the possible future results of its selection when deciding between possible operators.

6. Central funding is to be made available, within the normative system, for the task of decentralised financing. The normative system promotes the principle of the precedence of public transport equally across a national level, but takes into account the existing differences between regions.

7. In local public transport when the operator is not under local council ownership then the relationship between the operator and local council should be clearly regulated. A possible solution is that the regulations should prescribe a bilateral agreement and what issues must be set out in this agreement.

8. The issue of the obligation to provide a public service must be unambiguously spelled out and the operator must be compensated for the losses incurred while fulfilling this obligation. It is the task of the body administrating the given form of transport to clearly define this obligation to provide a public service, and the principles by which the body does this should be set out in the Acts.

References

[1] Banister, D. Berechman, J. and de Rus, G. (1992) Competitive Regimes within the European Bus Industry: Theory and Practice. Transp. Res. -A, Vol. 26A, No. 2, 167-179

[2] de Rus, G. and Nombela, G. (1997) Privatisation of Urban Bus Services in Spain. Journal of Transport Economics and Policy 1997 January, pp.115-129.

[3] Dodgson, J.S.and Topham, N. (1988) Bus Deregulation and Privatisation. Avebury, Aldershot.

[4] Evans, A: A theroretical comparison of competition with other economic regimes for bus services Journal of Transport Economics and Policy Vol. 21 1989, January pp. 7-36

[5] Gomez-Ibanez, J.A. and Meyer, J. (1997) Alternatives to urban bus services: an international perspective on the British reforms. transport Reviews, Vol. 17, No. 1, pp.17-29.

[6] Gwilliam, K.M. and cande Velde, D.M. (1990) The potential for regulatory change in European bus markets, Journal of Transport Economics and Policy September 1990, pp.333-353.

[7] Hibbs, J. Bradley, M.: Deregulated decade, TenYears of Bus Deregulation Adam Smith Institute, 1997.

[8] Koshal, R. K.: Economics of Scale in Bus Transport II Some Indian Experience Journal of Transport Economics and Policy, Vol. 3 1970. January, pp. 29-36.

[9] Koshal, R. K.: Economics of Scale in Bus Transport Some United States Experience Journal of Transport Economics 1972. May, pp. 151-152.

[10] Lee N. Steeman, I. :Economics of Scale in Bus Transport, I. Some British Results Journal of Transport Economics and Policy, Vol. 3 1970. January, pp. 15-28.

[11] Nelson, J. d. et al. A Review of Market Structure and the Effects of Legislation in Inter- and Intra-Urban European Public Transport . MINIMISE project EU: IV. keretprogram contract No. ST-96-SC.40.

[12] Nelson. J.D., Saleh, W. and Prileszky. I. (1997) Ownership and control in the bus industry: the case of Hungary Journal of Transport Geography, Vol. 5 1997. January, pp. 137-146.

[13] Preston, J.: Explaining competitive practices in the bus industry the British experience Transportation Planning and Technology, Vol. 15 1991. January, pp. 227-294.

[14] Severin, H.: Competition in a Planned Framework. the Danish Model, 26th Annual Public Transport Symposium, University upon Tyne,4-6 April 1995.

[15] Valentiny, P. Kik nyújtják a közszolgáltatást? A tömegközlekedés és a közszolgáltatás privatizációjának és deregulációjának egyes tapasztalatai Nyugat-Európában Közgazdasági Szemle, XXXIX évf. 1992 11. sz. pp. 1018-1035.

[16] Windle, J. Transit policy and the cost structure of urban bus transportation In: J Dodgson (Ed) Deregulation and privatisation of Local bus Services: The International Experience, Gower, London, 1987.

[17] White, P.R. (1990) Public Transport: Its planning, management and operation. UCL Press Ltd. London

[18] White, P.R. and Tough S. (1995) Alternative tendering systems and deregulation in Britain. Journal of Transport Economics and Policy, 29(3), pp. 275-290.