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Passenger Rail Transport

Problems in Measuring and Interpreting Turnover

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1 Preface

Main source of this document is the article "Unternehmen des öffentlichen Personennahverkehrs in der Konjunkturberichterstattung" which I published in the German periodical "Wirtschaft und Statistik (Wista)" in December 2005. Though this is already four years ago, a new classification of economic activities has been adopted and the focus of this document is not only on regional transport, the described problems and structures kept the same.

This document is neither a translation nor an abstract or update of the Wista-article. Furthermore it reuses the researched information on particular subjects, brings them into a more international context and takes into account the recent changes in European legislation. However the examples used and or situations described still apply to German or at least European conditions. But this does not necessarily mean that they are entirely different from the situations in other countries.

The structures of the passenger rail transport market have been quite stable over a long period. In a usually monopolistically organised system an – often state or local authority owned – enterprise ran the infrastructure (tracks, stations, signal boxes, maintenance shops ...) and operated trains for different purposes upon them. This traditional structure begins more and more to crack.

Free market conditions do not prevail on some parts of the passenger rail transport market on some routes. Without the influence of the public authorities no service would be offered at all. Additionally the former or still public owned monopolists often remain quite powerful integrated groups of enterprises while the European Union tries to increase the competition on the market for passenger rail transport.

The objective of the European SBS¹ and STS² regulations is to establish a common framework for the production of comparable statistics on a uniform basis. The aim of the Voorburg-Group is equivalent but in an even broader international sense: Establishing internationally comparable methodology for measuring the outputs of the service industries. One scope, the Voorburg-Group is centred on, is turnover by products.

This document does not offer a general overall fitting solution for turnover measurement in the passenger rail transport market. It is not able to and it does not try. This document tries to show relevant points that are worth to have a closer look at when trying to measure, interpret and compare the turnover figures for this industry.

2 Interurban vs. urban and suburban passenger transport

The focus of this document is on transport companies operating at the market classified in ISIC Rev. 4 Code 4911 – Passenger rail transport, interurban. However, it is frequently hard or even impossible to distinguish this interurban rail transport from the urban and suburban passenger transport (ISIC Rev. 4 Code 4921).

Within the ISIC no definition of "Passenger rail transport, interurban" is given. A negative delimitation collapses due to the very unspecific definition of "Land transport of passengers by urban or suburban transport systems": *"This may include different modes of land transport, such as by motorbus, tramway, streetcar, trolley bus, underground and elevated railways etc. The transport is carried out on scheduled routes normally following a fixed time schedule, entailing the picking up and setting down of passengers at normally fixed stops."*

The NACE does not help either. Its explanation for the corresponding NACE Rev. 2 Code 4910 "Passenger rail transport, interurban" is very general:

"This class includes:

- rail transportation of passengers using railroad rolling stock on mainline networks, spread over an extensive geographic area*
- passenger transport by interurban railways*
- (...)*

This class excludes:

- passenger transport by urban and suburban transit systems, see 49.31*
- (...)"*

The expressions "*mainline networks*" and "*extensive geographic area*" leave much room for interpretation.

¹ structural business statistics

² short-term statistics

Using the explanations given for the NACE Rev. 2 Code 4931 "Passenger transport by urban and suburban transit systems" as negative delimitation is not very helpful either as it uses almost exactly the same unspecific text as the ISIC does:

"This class includes:

-land transport of passengers by urban or suburban transport systems. This may include different modes of land transport, such as by motor bus, tramway, streetcar, trolley bus, underground and elevated railways etc. The transport is carried out on scheduled routes normally following a fixed time schedule, entailing the picking up and setting down of passengers at normally fixed stops. (...)

This class excludes:

passenger transport by interurban railways, see 49.10"

The Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road (...), that enters into force on 3 December 2009, only defines public passenger transport in general as "*passenger transport services of general economic interest provided to the public on a non-discriminatory and continuous basis*".

In the EU-legislation expressions like urban, suburban, regional, interregional, long-distance, international or high-speed traffic are frequently used³. Sometimes a weak implicit definition is given as in the proposal for a directive of the European Parliament and of the Council amending Council Directive 91/440/EEC on the development of the Community's railways⁴: "*Services operated under a public service contract are generally regional, with frequent stops, carrying passengers travelling short or medium distances. International services, on the other hand, generally make fewer intermediate stops and their customers travel longer distances.*" However this does not help to clearly distinguish between interurban and urban or suburban transport.

A negative delimitation of interurban passenger rail transport could be tried by using the definition of the working party on transport statistics of the Inland transport committee of the UN Economic Commission for Europe. They define urban and suburban public passenger transport as "*Public transport of passengers carried out for the purpose of meeting the transportation needs of the urban area/suburban area and usually integrated into urban public transport systems.*" However, this definition is rather open for interpretations in all directions as well.

In the German federal legislation the distinguish between inter- and (sub-)urban transport is made by using the travel distance and travel time of the passengers' total journeys: "*Public (sub-)urban passenger transport is the passenger transport in means of transport that are mainly designed to satisfy the demand in urban, suburban and regional traffic. In case of doubt this is considered as true, if the majority of passengers in a means of transport has a*

³ e.g. see COM(2004) 140 final

⁴ COM(2004) 139 final

total travel distance shorter than 50 km or their total journey time is less than one hour." This definition looks on the first view much more complex and precise than the previous ones. However, in the end it does not offer a sharp and clear guidance how to distinguish interurban and suburban transport as well. Following this logic – that refers not only to the residence time within one specific mean of transport or the distance travelled within it but to the total travel duration or distance of the entire journey – even local busses in theory could become interurban transport if the majority of the bus-passengers use this bus to the station where they switch to a long distance train.

Often product names are used to classify a connection either to interurban or to (sub-) urban traffic. High speed connections (AVE, EUROSTAR, ICE, railjet, TGV, Thalys, X2000...) and the Inter- (IC) and EuroCity- (EC) connections are usually counted as interurban passenger rail transport while "regional trains" (R, RB, RE, TER, N...) are counted as (sub-) urban transport. But this definition is problematic as well. "Regional trains" may combine urban and suburban transport and the connection to the hinterland or might even run on long distances and some IC-connections run only within one agglomeration⁵.

How big the impact of this assignment problem could be gets visible in the annual report of the German DB⁶ group. For the year 2008 they "only" quote 35.457 million pkm⁷ and 152 million tkm⁸ for their business division "long distance traffic" (ICE, IC, EC) and 42.334 million pkm and 535 million tkm for the business division "regional traffic" (IRE, RE, RB, S-Bahn). And while the companies of the DB group's business division "long distance traffic" are more or less the only supplier of purely interurban passenger rail transport in Germany are the companies of DB group's business division "regional traffic" only one beneath others (like Arriva, BeNEX, Veolia or Keolis; together additional more than 100 million tkm) in the area of "regional" transport. How much of this "regional" transport services have to be counted as interurban and how much as urban or suburban is unclear.

As seen, there is no common definition to distinguish between interurban, suburban and urban public rail passenger transport. And the different existing definitions seem to be difficult in use and do not offer real help as they often lead to different results or offer no clear results at all. We have to live with an overlapping situation that is not always set up apart clearly. In the end the question has to be asked, if it is not only hard but as well use- and meaningful to distinguish between both.

3 Services of general interest

In Europe public passenger transport by rail is generally seen as a service of general economic interest: *"These services of general interest play a major role in ensuring social, economic and territorial cohesion and are vital for the sustainable development in terms of higher*

⁵ i.e. DB Regio runs an RE between Lübeck Hbf (D) and Szczecin Główny (PL) , ~300 km/4h 41min and DB Fernverkehr an Intercity commuting only between Frankfurt Hbf and Wiesbaden Hbf, ~60km/40min

⁶ former state driven rail road company

⁷ person kilometres

⁸ train kilometres

levels of employment, social inclusion, economic growth and environmental quality. They are defined as the economic services which the public authorities classify as being of general interest and subject to specific public service obligations. This means that it is essentially the responsibility of public authorities, at the relevant level, to decide on the nature and scope of a service of general interest. Public authorities can decide to carry out the services themselves or they can decide to entrust them to other entities, which can be public or private, and can act either for-profit or not for-profit"⁹.

What does this mean for passenger rail transport? As public passenger transport by rail is seen as a service of general economic interest it is the duty of the public authorities to ensure that a certain level of transport opportunities is offered to the public. The Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road (...), entering into force on 3 December 2009, takes this approach into account. It gives the responsible public authorities a wide range of possibilities to either produce the service by themselves using units under their own control or by public service contracts. Within this range of options is the possibility to grant exclusive rights for services on a connection or network to only one unit.

The way the task bearer chooses for ensuring the offer of a sufficient level of transport opportunities determinates what is measured as transport companies' turnover.

4 Market actors

Beside the rail transport companies providing the actual rail transport service and the passengers using the transport services offered other economic entities are of relevance in the area of rail transport services. It is important to emphasise especially the operators of the infrastructure and – depending on how the services are financed and organised – the traffic associations and the relevant public authorities or their depending units. The following table (Table 1) gives an overview on the classification of these (other) relevant actors and whether they are included in the European business statistics (SBS and STS) or not.

As shown, the actors involved in the production of public rail transport do not form a unique sector in the activity classification. They are spread over a variety of different NACE resp. ISIC classes. Within this variety of different classes only the units performing as main economic activity interurban passenger rail transport have an exclusive class for their own. All other actors are classified in classes together with units that have no relations to rail transport at all.

⁹ see e.g.: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions accompanying the Communication on "A single market for 21st century Europe": Services of general interest, including social services of general interest: A new European commitment; COM(2007) 725 final

Table 1: Classification of relevant actors

Unit (main economic activity)	Classification			incl. in	
	NACE Rev. 2	ISIC Rev. 4	Description	SBS	STS
	Class				
Railroad Transport Company ...interurban	49.10	4911	Passenger rail transport, interurban	yes	yes
...urban and suburban	49.31	4921	Urban and suburban passenger land transport	yes	yes
Operation of infrastructure (tracks, stations, signal boxes...)	52.21	5221	Service activities incidental to land transportation	yes	yes
Transport association ¹⁰ ...clearing house services	82.91	8291	Activities of collection agencies and credit bureaus	yes	yes
Task bearer ...as part of the general public administration	84.11	8411	General public administration activities	no	no
...as separate organisation	84.13	8413	Regulation of and contribution to more efficient operation of businesses	no	no

5 Transport companies' income

5.1 Economic Definitions

As mentioned above, quite often public money is involved in the production of rail transport services. This makes it necessary to clearly define and distinguish between the different parts of the transport companies' income of which turnover might be only one.

Turnover is a fairly elementary concept in accounting. In normal circumstances, the most important part of the enterprise's revenue is its operating income; it is here that the receipts coming from the non-financial ordinary activity are included. Within operating income turnover normally accounts for the highest share.

The concept of turnover is defined by article 28 of the 4th Council Directive of 25 July 1978 based on Article 54 (3) (g) of the Treaty on the annual accounts of certain types of companies (78/660/EEC): "*The net turnover shall comprise the amounts derived from the sale of products and the provision of services falling within the company's ordinary activities, after deduction of sales rebates and of value added tax and other taxes directly linked to the turnover.*" The definitions used in the European SBS and STS follow this specification and define turnover as: "*...the totals invoiced by the observation unit during the reference period, and this corresponds to market sales of goods or services supplied to third parties. (...)*"

Turnover excludes VAT and other similar deductible taxes directly linked to turnover as well as all duties and taxes on the goods or services invoiced by the unit.

Reduction in prices, rebates and discounts as well as the value of returned packing must be deducted. Price reductions, rebates and bonuses conceded later to clients, for example at the end of the year, are not taken into account. "¹¹

As described later on, public money could be involved in different kinds in financing the rail transport services. It might be possible that some of these payments could be seen as subsidies. The 1993 System of National Accounts defines subsidies in its paragraph 7.7.1 as: *"...current unrequited payments that government units, including non-resident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services which they produce, sell or import. They are receivable by resident producers or importers. In the case of resident producers they may be designed to influence their levels of production, the prices at which their outputs are sold or the remuneration of the institutional units engaged in production. Subsidies are equivalent to negative taxes on production in so far as their impact on the operating surplus is in the opposite direction to that of taxes on production."*

Knowing full well that national accountants sometimes would like to see public payments for services as subsidies and only ticket fees as turnover, turnover is a concept in accounting referring to business administration rather than national accounts. That is why in the following public payments like orderers' fees are treated as turnover as long as they fulfil the requirements of the turnover definition mentioned above. Treating these public payments – which might be direct or indirect through organisations like transport associations – not as turnover but as subsidies would lead of course to different turnover figures and developments.

5.2 Types of service

5.2.1 General

As already mentioned above the task bearer has the choice between different concepts:

- concession to a private or public unit,
- contracting a transport company or
- open-access-markets.

This split up of the market is described in the same way in the Communication from the Commission - Further integration of the European rail system: third railway package. ¹² It describes two models for opening up to competition. Firstly, a competitive procedure to award

¹⁰ Depending on their organisation, transport association may be involved in many other different tasks not mentioned here.

¹¹ Commission Regulation (EC) No 1503/2006 of 28 September 2006 implementing and amending Council Regulation (EC) No 1165/98 concerning short-term statistics as regards definitions of variables, list of variables and frequency of data compilation

¹² COM(2004) 140

a public service contract, accompanied, if necessary, by exclusive rights for a certain period and, where appropriate, by compensation for the public service.

The second model described by third railway package is based on free access to the infrastructure.

These different kinds of concepts reflect in two different kinds of services:

- the service without subsidies and
- the economically unprofitable service

Table 2: Different concepts and services

	economically unprofitable service	
	service without subsidies	
concession	x	
contract		x
open-access	x	

The different kinds of services – even several possible sub-varieties – might exist side by side within one region and one kind of service is replaced by another one at the end of the contract's lifetime.

Depending on how the transport service is organized and how the contract details look like this leads to a different content of what is collected as turnover.

5.2.2 Service without subsidies

The general idea behind the service without subsidies is the normal way a market works. It is assumed that services without subsidies can bear all necessary expenses for offering the service (staff, rolling stock, maintenance, energy, track and station fees...). In this case the turnover of the transport companies is their revenue through ticket fees¹³. The possibility on offering such a service depends on the market liberalization and specific laws in each Member State.

In theory this idea of service without subsidies works on

- "Open-access-markets" where several Transport Companies are free in joining the market and in competition; i.e. several Railroad Companies offer the

¹³ Here and in the following text these ticket fees contain the eventually compensation the transport company gets from public authorities for transporting pupils, handicapped and disabled persons (...) for free transport or transport at reduced fees.

connection for different conditions on the same relation. (Competition on the market) and on

- "limited markets" where several Transport Companies are in competition for an exclusive licence for a certain relation or network. The highest bidder in an auction gets the exclusive right to offer the service exclusively to the public¹⁴ (Competition about the market).

Open-access-markets are quite common for rail-freight-transport. Within the EU all Member States should have opened their networks for the competition between different rail-freight operators. In the area of passenger transport open-access markets are more an exception.

It only seems to work on very few, selected major lines¹⁵. Public transport is not only a conglomeration of single, independent lines but an integrated network: Passengers demand "one stop shop tickets": They do not want to buy separate tickets if they have to change trains and in case of delay they want to use their purchased ticket on the following one. Major (eventually profitable) lines quite often depend on other less frequented ones as feeder connections; locomotive schedules have to be organised in a way ensuring that the vehicles reach their depots or maintenance shops from time to time, more or less empty trains have to be run if the transport needs at different times are only in one direction... .

And even if in theory an open-access-service without subsidies would be possible on a selected connection, the authorities often will refuse a concession or make the service unattractive. There are several reasons for doing this. One is to prevent cherry-picking and bundle these "cash cows" together with "unattractive services" to cross finance transport countries of general interests. This is either done by contract (see 5.2.3) or by providing the service themselves¹⁶ and obviating the competition on these connections¹⁷. Another reason is that some states like Switzerland or Austria want to establish highly synchronized timetables. These are timetables with more or less the same schedule every hour and fixed connections every full or half hour at main interchange station. As the train paths are rather limited this system of highly synchronized timetables is incompatible to open-access-markets.

With the Directive 2007/58/EC of the European Parliament and of the Council of 23 October 2007 (...) on the development of the Community's railways and (...) on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure the Member States of the European Union are forced to open selected connections between Member States for open-access competition from the 1st of January 2010 on. This includes as well the right to pick up passengers at any station located on the route of an international service and to set them down at another, including stations located in the same Member State (cabotage).

¹⁴ The UK tried this model in the middle of the 90s.

¹⁵ Although it is legally possible there is only one private service without subsidies on one connecting once a day in whole Germany.

¹⁶ normally by state owned enterprises

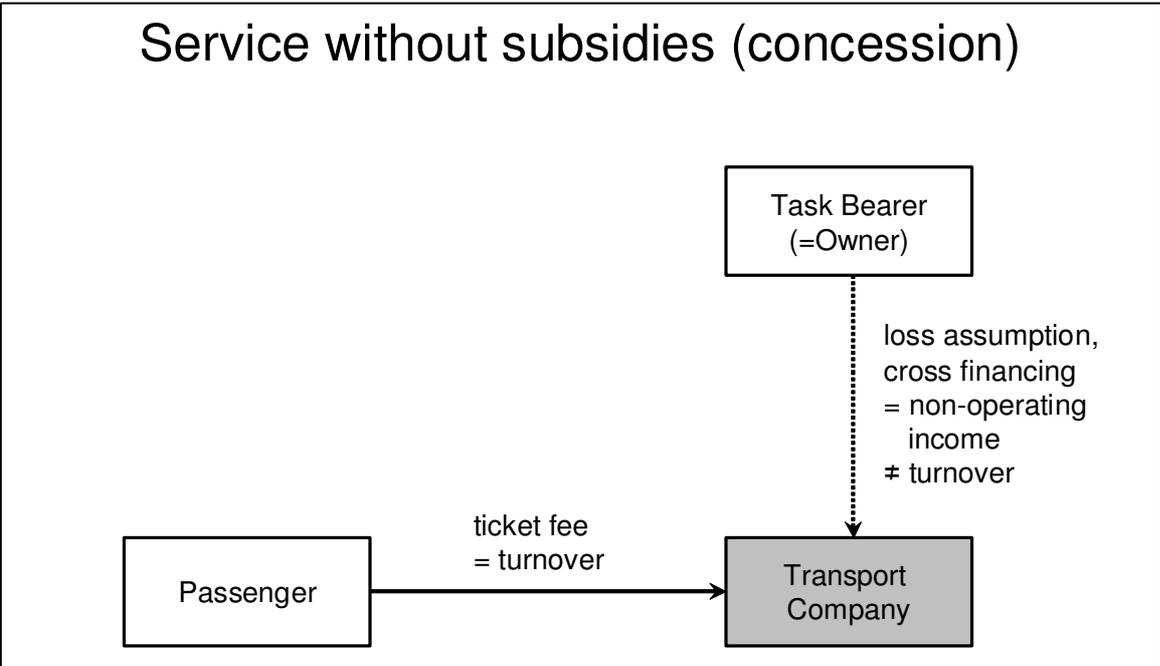
¹⁷ In contrast to other countries in Germany the "Passenger Transport Act" prohibits even a competition between railway and remote bus.

Opening up international passenger services, which include the right of cabotage, to competition may have implications for the organisation and financing of rail passenger services provided under a public service contract. Member States have the possibility to limit the right of access to the market if this right would compromise the economic equilibrium of these public service contracts. In order to contribute to the operation of passenger services on connections fulfilling a public service obligation, the responsible authorities are authorised to impose a levy on open-access passenger services. That levy should contribute to the financing of public service obligations laid down in public service contracts.

Open-access-competitions are still rather rare. This leads to a situation that the absolute majority of the transport services without subsidies is not produced by entirely privately owned companies earning more or at least as much as they spend for operating the service. Most service without subsidies in passenger rail transport are offered by transport companies directly or indirectly owned by the public. These enterprises do not necessarily earn at least as much as they spend. Either the public regularly takes their loss or they are cross financed by other incomes of the unit operating them. This makes the English appellation "service without subsidies" a bit misleading as (permanent) loss assumptions or cross financing in fact are a kind of subsidy (even if they formally are not).

Within the EU this approach is linked to very restrictive guidelines as this loss assumptions could be seen as illegal government aids. From the view of business administration, the loss assumptions themselves are not part of the companies' turnover. They belong to the other non-operating income.

Figure 1: Turnover, Service without subsidies



Turnover (as price of the service offered multiplied by amount of service consumed) is a figure to measure market transactions. The relevance of the turnover development is affected

by the fact, that the market conditions in public passenger transport are at least questionable for a substantial part of these services without subsidies.

5.2.3 Economically unprofitable service

5.2.3.1 General

Transport services, which cannot economically cover all necessary expenses by ticket fees are characterised as economically unprofitable services. However, no private enterprise will offer them on such a basis.

Often there is a public interest in offering these transport services (services of general interests, see 3). The responsible public transport authorities – or their assigned organisations – as task bearers call for tenders to produce these transport services or contract transport services by single tender actions.

These contracts could be quite detailed: They do not only regulate the connections or frequencies offered but might contain things like the kind of vehicles used, the number of seats offered, the embodiments of passenger information systems, number of train guards and lots of other aspects.

The "economically unprofitable service" can be divided into two main kinds:

- gross contracts and
- net contracts.

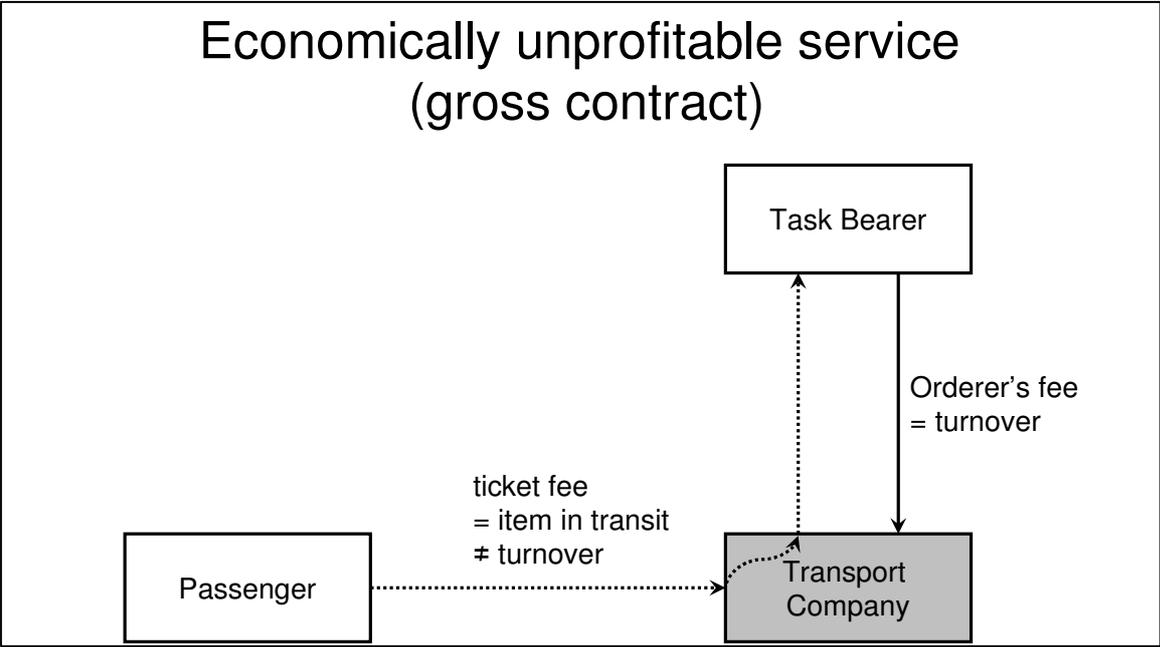
It is not remarkable, that different types of contracts can be identified. In fact probably every contract between a task bearer and a transport company is different from others. But already this general split up has a huge impact on what is measured as turnover.

5.2.3.2 Gross contract

Pure gross contracts became rather rare. Holding such kind of contract the transport company does not offer the transport services for own account. It is a kind of subcontractor of the task bearer: The task bearer contracts the transport company to produce a certain amount of often very detailed described transport services and fully pays the transport company for producing this service. With a gross contract the transport company bears no economic risk caused by the amount of collected ticket fees. The collected ticket fees collected by the transport company belong directly to account of the task bearer ordering the service. They are only items in transit through the transport company.

In case of a pure gross contract the transport company's turnover is easy to identify: It is the order's fee it gets from the task bearer for offering the transport service.

Figure 2: Turnover, gross contract

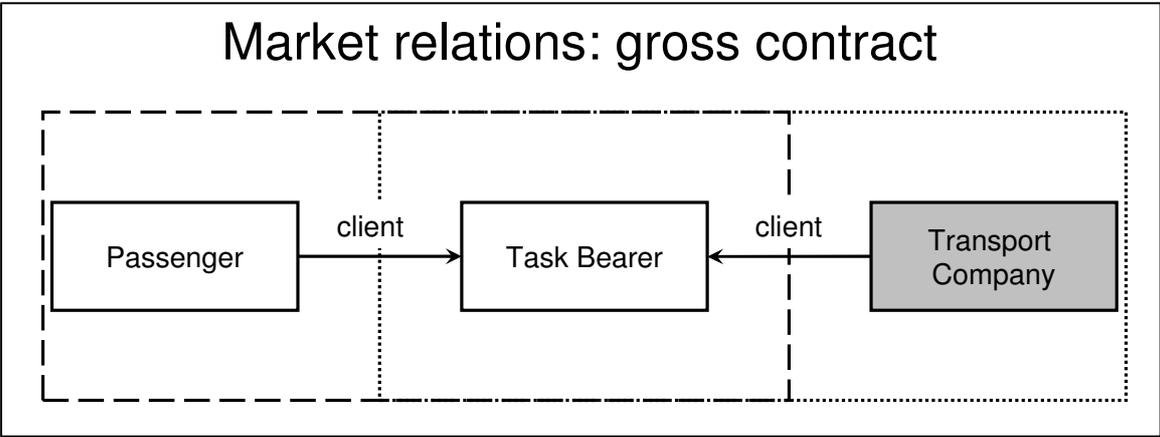


It is quite common that the collected ticket fees are not directly forwarded to the task bearer but cleared with the orderer's fee. This does not change their status. The contracted amount of the orderer's fee stays the turnover and the ticketed fees stay item in transit.

The transport company has no possibility to increase its turnover by price variation or increasing number of passengers during the life of the contract. The only economical risk it carries is on the expenditure site. However even this risk can be taken as described later.

Thus there is no direct market relation between the passenger and the transport company. Rather, the task bearer has to be seen as the transport company's client. The task bearer orders and fully pays the service fulfilled by the transport company.

Figure 3: Market relations, gross contract



This shows that the transport company's turnover in a gross contract is generated by another product on another market. It is not the product of transport but the product of transport possibilities offered to the public.

In its core form this kind of contract does not stimulate the transport company to behave in a passenger friendly way. An administrative director of the Danish subsidiary of a French passenger transport company once hit the nail on the head: *"The most profitable for us is to carry as few passengers as possible (...) then we save the money for cleaning."* This is why pure gross contracts became rare. It is more common to combine them with an award- or a bonus/malus- systems for objectively measurable behaviours like punctuality or cleanness. Awards are normally granted once a year, bonus and malus are often cleared with the payment in the following periods.

These payments and claw backs are in general parts of turnover. However they are not without difficulty (see 5.3.2).

5.2.3.3 Classification of task bearer and transport companies in case of gross contracting

As seen above, the task bearer could take a lot originally transport companies' tasks. The combination of gross contracts and delegated planning and financing of public passenger transport to an organisation under private law (e.g. a transport association) could lead to a situation where this organisation becomes a transport company itself: Its main income are beside public funding the how ever transited ticket fees and the activities performed by these units are – depending on the situation – in large parts the ones of transport companies like planning schedules, owning and taking care of the rolling stock's maintenance... .

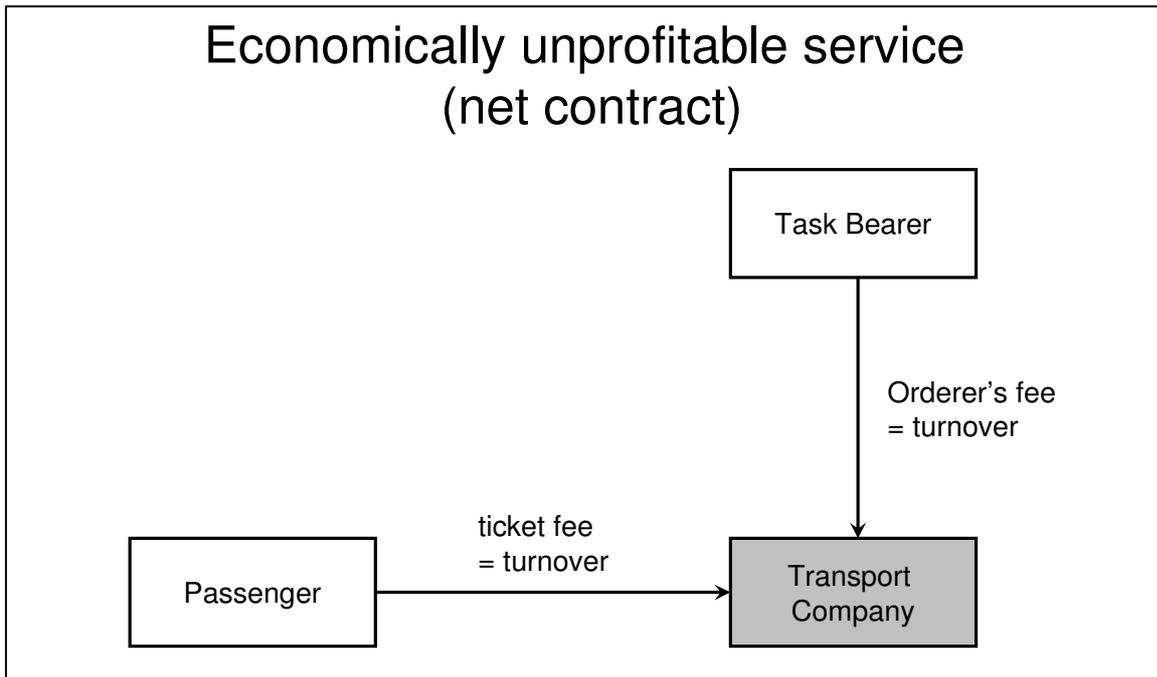
On the other hand it is questionable how to classify the transport company that has lost a lot of its original tasks. In the most extreme case it could only be responsible for the staffing and some other more or less auxiliary activities, while the vehicles are provided and maintained, the traffic and schedule planning made, the tariffs set (...) by or on request of the public task bearer.

5.2.3.4 Net contract

Net contracts are comparable to the "limited markets" described under the service without subsidies (see 5.2.2). The only difference is that the transport company does not pay for getting an exclusive right to offer connections on certain relation but gets paid with public money for offering them.

In contrast to a gross contract, a transport company holding a net contract sells services for own account. With this type of contract the ticket fees accrue to the transport company and are part of its turnover. The transport company bears the economic risk resulting out of the ticket income. This should force the transport company to a more passenger friendly behaviour and quite often offers the transport companies more flexibility.

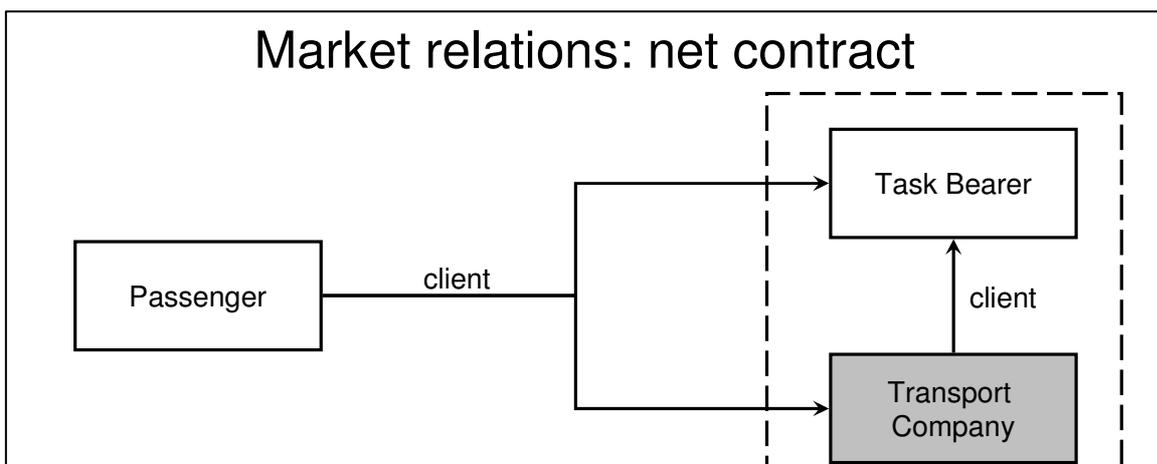
Figure 4: Turnover, net contract



As typical for economically unprofitable services the amount of turnover realised through ticket fees does not bear all services costs. On top of the ticket fees the transport company gets a fixed amount from the task bearer for offering the contracted service. This orderer's fee is part of the transport company's turnover as well.

Transport companies with a net contract do have both: direct market relation with the task bearer and with the passengers. However it is not uncommon to combine net contracts also with incentive systems for objective measurable behaviour as described before.

Figure 5: Market relations, net contract



In comparison to a gross contract a net contract normally leads to more volatile turnover – especially on a monthly basis. A gross contract – abstracting away from possible bonus and malus- payments – normally leads to the same turnover in each period consisting of the

orderer's fee. A net contract consists of two parts: The fixed orderer's fee and the variable sum of the ticket fees.

5.3 Further problems

The way the service is organised and the way the contract is set up determines both:

- the market looked at and
- what is measured as turnover.

The kind of service and the general kind of contract influences to which market the turnover is assigned and of course it determines largely its amount. However, often very small contract details have a strong influence on the turnover figure as well.

These small details could either have an impact on:

- when turnover is recorded or
- if turnover arises at all.

The first point is especially of interest for STS. Mainly down payments (see 5.3.1) or bonus and malus- payments (see 5.3.2) create this allocation problem.

If turnover arises at all is quite often determined by the expenditure side. As seen from a business administrative point of view on the long term turnover has to bear all costs it is influenced by which costs the transport company has to take. Often transport contracts between transport companies and task bearers stipulate that task bearers take over a part of the production cost for the service and in return they pay a lower orderer's fee. Common situations for this are investments in vehicles (see 5.3.3) or the take over of future risks in price developments (see 5.3.4).

5.3.1 Down payments

Especially in the STS, down-payments cause a significant problem. It is common that almost all payments between task bearers, traffic companies and traffic associations use down-payments. During the year only equal flat payments are made. Once a year these flat payments are cleared.

In SBS this treatment can be handled without any problems, as the annual amount is cleared. In STS it creates problems as the turnover is not (fully) allocated to the right period anymore. From an accounting view the later payments are turnover. Depending on the clearing processes either the previous periods' turnovers change or a new turnover position is created. If and how this has to be treated in STS is not finally determined. The Commission Regulation defining the variables in STS¹⁸ explicitly excludes price reductions, rebates and bonuses conceded to customers later. Other late modifications of payments are not mentioned.

¹⁸ The Commission Regulation (EC) No 1503/2006 of 28 September 2006 implementing and amending Council Regulation (EC) No 1165/98 concerning short-term statistics regards definitions of variables, list of variables and frequency of data compilation.

Regardless whether or how these payments are treated or not this leads either to late revisions or wrongly allocated turnover – or both.

5.3.2 Bonus and malus

Bonus- and malus-payments create a similar problem. For EU-STS these payments and claw backs are in general parts of turnover, as long as they are short-term periodically and not conceded later.

Following the suggestions in the EU-STS Definitions-Regulation¹⁸ they are not taken into account if they are fiscally backward-oriented (modify the turnover in history). This leads to a wrong allocation of turnover in history. However taking them into account would correct the wrong allocation and lead to revisions.

Not mentioned is the quite common case that these bonus- and malus-payments are indeed economically backward-oriented (refer to services in history) but not fiscally. Contracts can foresee that behaviour in history could have an impact on to-be payments for future periods. This dissociation of the economical and the fiscal leads to wrong allocations of turnover to periods.

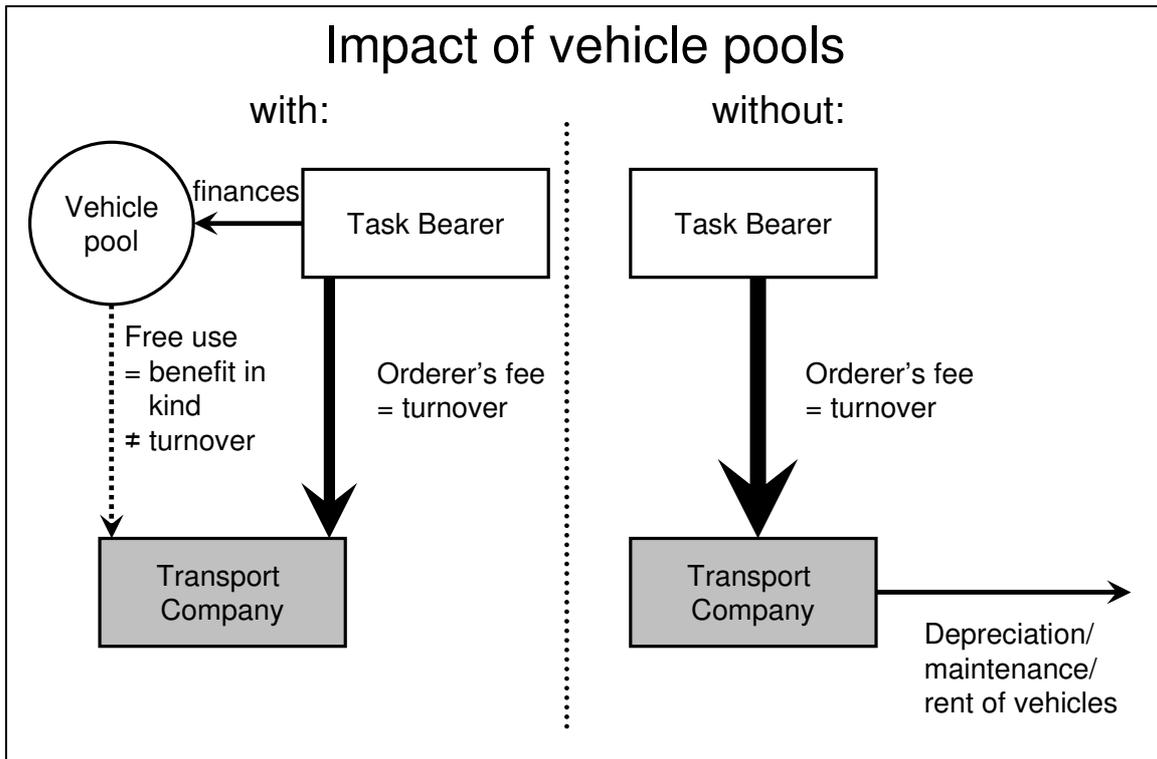
The described problems make these bonus- and malus-payments or claw backs to a kind of Morton's Fork: Regardless how they are treated in STS they lead to quality problems.

5.3.3 Vehicle pools

Task bearers might install vehicle pools to lower the market entering barriers or if special technical requirements (unusual gauge, special power systems...) are necessary. These vehicles are either owned or hired on a long term basis by the task bearer (or its organisation). Transport companies who perform the transport service either have to use them for free or have to hire them for a usually non market price from the task bearer's organisation. In many cases the vehicle's maintenance and servicing is done for the task bearer's account in separately contracted service shops.

The existence of vehicle pools and the form of contract has a significant influence on the amount of the transport company's turnover. Normally railroad vehicles are quite expensive. Their depreciation and maintenance has to be earned. As in the long term all expenditures of an enterprise have to be covered by its income this amount spend for depreciation and maintenance has to be covered by the transport company's turnover.

Figure 6: Impact of vehicle pools



If the use of vehicles is available for free or offered for a non market price the transport company's turnover could be lower. From an accounting point of view this benefit in kind is no turnover. Usually the contact between the task bearer and the transport company stipulates a lower orderer's fee if a vehicle pool is available. However in other contracts the transport company has to hire the vehicles from the task bearer and has to pay for them. If the rent paid is a realistic price is at least questionable. The public authorities normally have better refinance conditions than private enterprises. Thus they have the possibility to offer the vehicles comparable cheap to the transport companies.

5.3.4 Infrastructure and energy expenditure compensations

Contrary to road traffic, for rail traffic the infrastructure is never a public good. The transport companies always have to pay for using the tracks and stations.

Traffic contracts usually have a quite long life. Often it is ten years or even more. While negotiating and signing the contract it is almost impossible to forecast the development of track and station fees as well as the development of the energy prices. Normally the task bearer takes the risk of these infrastructure fees and rising energy prices. The way this is done is not unique. You find contracts with a price adjustment clause. Here the orderer's fee changes automatically when track or station fees or energy prices change. There are contracts with the possibility to renegotiate in case of changes and contracts with infrastructure fees as items in transit for the transport companies. In this case the fees are directly paid by the task bearer. The way the contract stipulates compensation for (growing) infrastructure expenditure

has impact on the orderer's fees and through this on the amount of transport companies' turnover.

Beside these very different kinds of standard contract situations very exotic ones could be identified. One of these could be marvelled at in the German federate state North Rhine Westphalia. Here a contract stipulates that the task bearer organisation transfers a yearly changing – depending on the amount transferred by the federal government – amount to the contracted rail road company and this company offers as much service as fundable. The selection of the services is done by the rail road company. However, this kind of contract seems to be not very trendsetting as the many legal actions between both parties show.

6 Market

6.1 *Contrasting markets*

As already mention, the passenger rail transport market – in the relation passenger and transport company – is widely characterised by government intervention. Without this intervention of public authorities there would quite often be no service at all.

In addition to this there is a strong competition between the railroad transport and other carrier system (plane, bus, private car). Changes on one of these "transport markets" have direct influence on the others.

However, the economically important passenger rail transport market is often not the one between passenger and Transport Company. It is easy to identify a second, but much bigger one: Between the public administrations as task bearers on the client's site and the transport companies as suppliers. The good – or better the service – traded on this market is not transport of a passenger between an origin and a destination at a certain time. The good traded on this market is the offer of a transport possibility between an origin and a destination at a certain time to potential passengers.

The amounts involved are neither defined by the transport needs nor the passengers' requests for transport. They are defined by the political program and the budget situation of the public administration.

6.2 *Integrated groups of enterprises*

As mentioned before, the market structures we have today are the results of transition processes that started usually with a rather monopolistic, solid public railroad company that covered all related activities from running and maintaining the tracks, stations, switching yards, maintenance shops for the rolling stock (...) and planning and operating regional and interurban passenger and freight trains. Often even responsibilities of public administration like homologation and type approvals have been undertaken by these public railroad companies.

In several countries these former public railroad companies have more or less been split up. A main reason was the stipulation of the European law that the administration of the

infrastructure and the train operation have to be at least organised separately¹⁹. While tasks like homologation and type approvals normally have been transferred to (new founded) public regulatory or supervisory authorities, the former public railroad companies often turned into groups of enterprises that hold units offering all kinds of (rail) transport services. The ownership of the network can be organised differently. In some countries the infrastructure has been taken over by a public authority: e.g. Banverket in Sweden; in others like in the UK it is run by a – more or less independent from the railroad companies – private unit (Network Rail) while in others like in Germany the infrastructure is run by units (DB Netz AG, DB Station&Services AG) belonging to an enterprise group (DB) that offers transport services as well and that arose from the former public railroad company.

Especially the third case can create problems while measuring the transport companies turnover. It could lead to open or hidden package deals. In 2003 the German state Thuringia signed a long term passenger rail transport contract with DB Regio AG, a unit of the DB group. The responsible Minister of Transport of the German state Thuringia said in an interview about the reasons for choosing a unit of the DB group: *"Private rail road companies²⁰ would neither build tracks nor stations; they want to operate trains on tracks. But the Free State of Thuringia is interested in investments in infrastructures, wants that the high speed tracks are built and linked to other transport axis"*. That shows, that it is sometimes impossible to see for what the public pays under the cover of a transport contract. In this case not only for the transport possibilities but as well for an improvement in the physical infrastructure.

7 Transport associations

7.1 General

Quite often public transport is offered within transport associations. These are bodies for integrated public transport services that offer a one stop shop to public transport users. Within transport associations unique systems of tariffs are used. This enables passengers to use a variety of different lines and/or means of transport (bus, train, boat) run by different transport companies within one area with only one ticket. Sometimes these transport associations even overlap and different systems of tariffs exist side by side.

In general transport associations can be distinguished into three main groups: associations of task bearers (public transport associations), associations of transport companies and associations of both of them.

Often the public transport associations act as task bearer towards the transport companies. However there is no common type of organisation or structure of these transport associations. There are endless different varieties with different tasks: Marketing, engineering services, business development and promotion, supervision (...) and clearing house services. Sometimes different services are provided within the same transport network by different

¹⁹ Directive 2001/12/EC of the European Parliament and of the Council of 26 February 2001 amending Council Directive 91/440/EEC on the development of the Community's railways

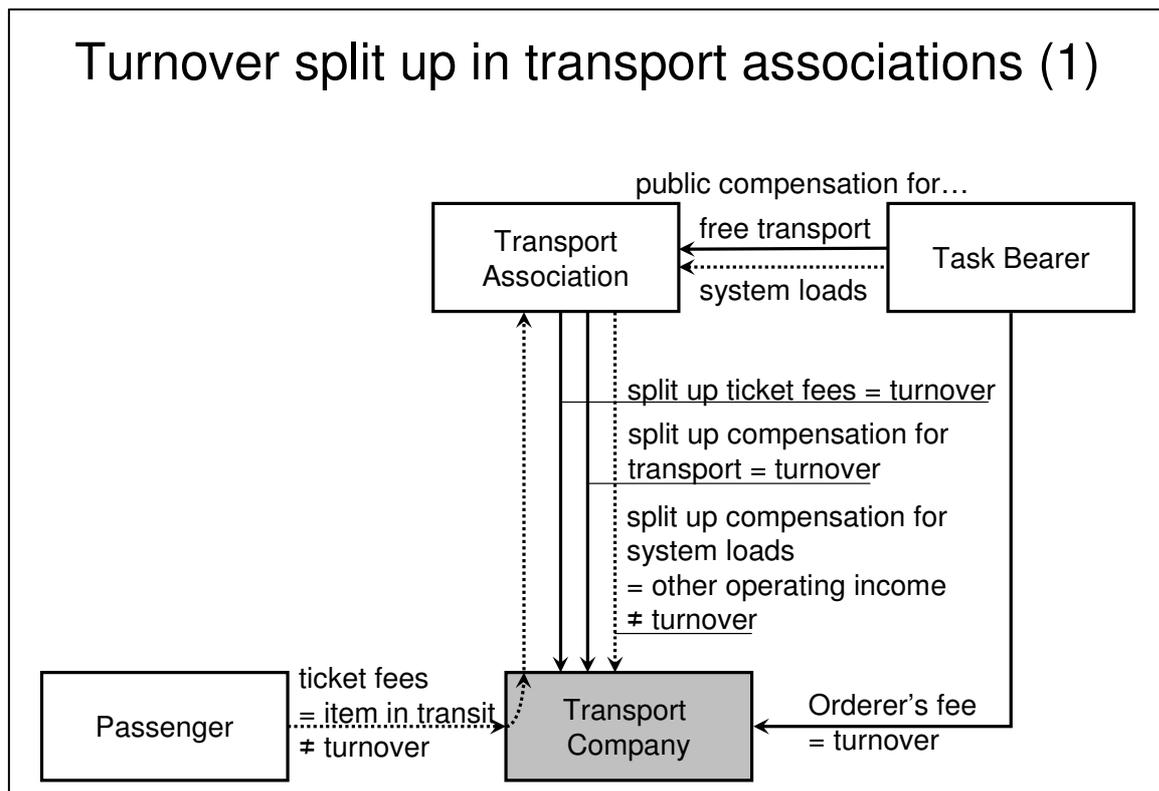
²⁰ DB is not seen as private thus it has been privatised (at least legally, not by ownership)

associations: E.g. one makes the planning and financing, one the marketing and another clearing service.

7.2 Turnover split up

Like the structures of the associations the modalities of splitting up the ticket revenues within the associations are very different.

Figure 7: Turnover split up in transport associations (1)



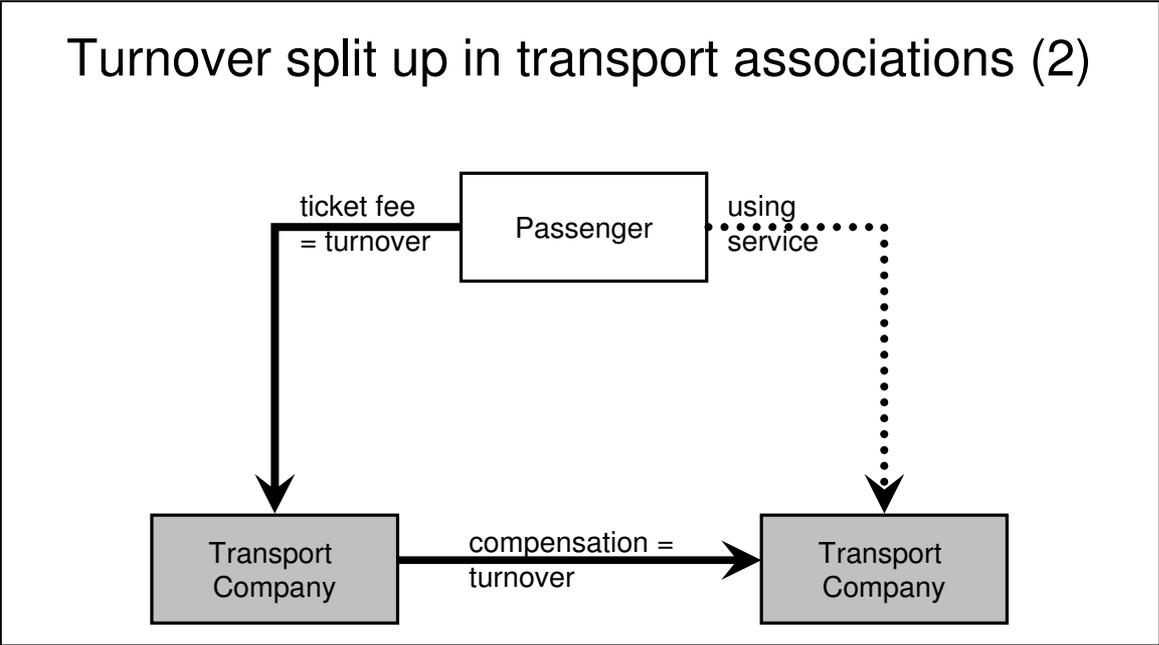
A common way is that the ticket revenues are for a start items in transit through the accounts of the transport companies. The transport company collects them and forwards them to the transport association. The transport association collects and adds up the fees from all associated transport companies. If the task bearer(s) pay compensations for transporting pupils, handicapped persons (...) for free transport or reduced ticket fees and for system loads²¹ these compensations are added on top. The transport association splits up the whole amount by using an agreed²² formula and transfers it back to the single transport companies. The amount the transport companies get (back) from the association, reduced by the share of compensation for system loads, is turnover. The included share of compensation for system loads is other operative income. It is not necessary, that the revenue from ticket fees is transferred physically to the association – it is common that the transport association together with the transport companies only clear and transfer the payable accounts.

²¹ Using only one ticket for different companies is often cheaper for the passenger than having to buy two or more different tickets. This leads in sum to lower ticket revenues.

²² but sometimes very non-transparent

Another common way of splitting up the revenues within a transport association is, that transport companies sell the transport service on own account and compensate each other afterwards. This compensation could be either done directly from company to company or through the transport association as clearing house. In a business administrative view both cases, the received ticket fees and the received compensations from other companies could count as the transport companies' turnover. This makes the splitting up of the transport companies' revenues within a transport association comparable to the double counting problem in sub-contracting. The same service is counted more than once as turnover.

Figure 8: Turnover split up in transport associations (2)



8 Conclusions

When looking at the market classified in ISIC Rev. 4 Code 4911 – "Passenger rail transport, interurban" we are mainly faced with three special items that are problematic when trying to achieve a necessary international comparability:

1. the delimitation from the urban and suburban passenger transport,
2. the market definition itself and related to this
3. the treatments of the different payments made.

For the delimitation between urban/suburban and interurban exist several different definitions. Even though the definition for statistical purposes used by ISIC and NACE are almost the same they are rather broad and unspecific and leave lots of room for uncertainties. Although these definitions must offer some leeway as the conditions in the different counties are rather different, this very unspecific specifications do not help countries in making comparable classifications.

The even worse problem is the market definition itself. In fact we are faced with two different markets:

- the passenger – transport company market and
- the public administration – transport company market.

The products traded on these markets are entirely different. It is either the transport service itself or the offer of transport services to the public. Both products produce different value added: The transport service if used and the existence of a transport service as a kind of option that could be used. And even if spitted into two different products on two different markets each of them is still problematic on its own:

Often the market mechanism on the passenger – transport company market would lead to situations where no service would be offered at all. The reasons for the existence of these services are the different interventions of the public administrations. This makes it at least questionable how valid and comparable these turnover figures are.

The public administration – transport company market is not described by typical market transactions. One of the main determinants for this market is the situation of the public budgets and political priorities. Whether the payments made to the transport companies for offering a service should be treated as turnover (as done in this document) or not, seems to be uncertain.

The same amount of service offered and/or used should lead to the same result in our output indicator regardless how the market is organised or the payments are made. But the organisation of the passenger railroad markets and the different kinds of payments made have a significant influence on the turnover. This makes it nearly impossible to compare these turnovers between different countries. Even the comparability over time – that is essential for STS – is at least questionable. The number of contracts between the public authorities and the transport companies within one state is often – even in bigger states – rather limited. A change of one of these contracts could already have a visible impact on the time series.

Especially for STS another relevant problem are the mentioned down-payments and bonus- and malus-payments that dissociate the period of the payment from the period of the production of the service. This is a problem that does not only occur in this market. However, it seems to be more relevant here than in other industries.

The market of "passenger rail transport, interurban" is for sure somehow special and not directly comparable to other markets covered by SBS and STS in the service sector. Nevertheless, for this market – or in fact this combination of these two markets (Passenger – Transport Company and Public – Transport Company) it is at least questionable to use turnover as a meaningful and international comparable output indicator.