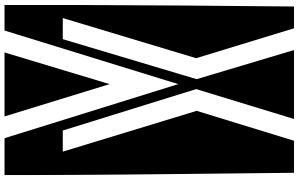

NEW RAIL INFRASTRUCTURE CHARGES?

Analysis and proposals

Summary in English

SIKA Report 2002:2

Preface

This report presents the result of the review of the track charging system that the National Rail Administration and the Swedish Institute for Transport and Communications Analysis (SIKA) have jointly produced at the request of the government.

The assignment entailed producing a proposal for adjustment of the present track charges in order to better reflect the short-term marginal costs of railway traffic and to comply with EC legislation. It has been possible to produce a better basis for calculating certain types of costs, for instance accidents, than has previously been used for charging. For other types of costs, development work remains to be done before the marginal costs that are relevant for charging can be calculated in a sufficiently exact way. This is especially the case for re-investment costs.

The National Rail Administration and SIKA both consider that basing track charges on the short-term social marginal costs is an important and correct principle, although it is not always clear how these are to be calculated. Furthermore, the existing reporting systems have often been constructed for other uses so that it has not been possible to obtain the kind of detailed information on the effects of traffic required. To date therefore, various approximations have had to be used such as average costs. The traffic-dependent information is, however, gradually improving, which means that the basis of information available will improve.

The National Rail Administration and SIKA are accordingly substantially in agreement on the basic principles for charging and their interpretation. However, it has not been possible to reach agreement on how and above all when adjustments to charges should take effect. Neither has it been possible to reach agreement on how certain types of costs are to be translated into charges. The latter applies in particular to costs of emissions for electric train traffic.

Bo Bylund
Director-General

Staffan Widlert
Director

Background

The present model for railway traffic in Sweden, introduced after the 1988 transport policy decision, means that the government through the National Rail Administration is responsible for providing – constructing, maintaining and operating – the infrastructure. This organisational model also entails that the state makes this infrastructure available on payment of a charge to different traffic principals/operators who wish to provide rail transport services.

After the reform of railway charges following on from the current transport policy decision of 1998, the track charges are in principle only to reflect the marginal costs, i.e. the costs of various kinds that new rail transport causes to others than the transport operators when use is made of the infrastructure. These "others" may be those responsible for the track, including the traffic management, other traffic operators and citizens/society as a whole. The intention of charges based on short-term marginal costs is to provide an incentive for a socially efficient use of the infrastructure.[1]

In December 2000, the European Parliament and Council adopted Directive (2001/14/EC) on the allocation of railway infrastructure capacity and the levying of charges for use of the railway infrastructure and safety certification. With regard to charging, the directive adopts a basic model for charging for the railway infrastructure which is well in accord with the Swedish marginal cost principle.

[1] When the new model for Swedish railway traffic was introduced after the 1988 transport policy decision, track charges were introduced which, in addition to a variable portion, which was to reflect marginal costs, also contained a fixed charge in the form of a rolling stock charge.

The task

In the formal fund allocation document for 2000, the government requested SIKA, in collaboration with the transport agencies, to review the prerequisites for infrastructure charges based on marginal costs. A report was made on this assignment in December 2000 (SIKA Report 2000:10). The review revealed a discrepancy between marginal costs and charges indicating that charges should be adjusted.

With reference to the EC Directive and to SIKA's report indicating that adjustments should be made to some charge components, the government considered it important to review the track charge system as a whole. In May 2001, the government therefore requested the National Rail Administration and SIKA to analyse and propose adjustment of the current track charge system in order that it should

- better reflect the short-run marginal costs of railway traffic at a level that is practically appropriate at the same time as giving operators correct signals on desirable adjustments of operations, and
- comply with the conditions in EC legislation.

The government underlines with reference to the aforesaid SIKA report that the areas that merit special attention are costs for disruption and lack of track capacity, environmental costs, marshalling costs, costs relating to accidents and wear and tear.

The importance of track charges for the conditions of competition for railway traffic are also to be taken into account. A balance is then to be struck between the opportunities for making rail traffic more efficient by marginal-cost based charges and the reduced efficiency that may arise in the transport sector as a whole by marginal-cost based charges not being applied to other modes of transport.

The assignment also includes calculating the aggregate revenue from charges according to the proposal. Income is to be calculated for all types of trains and a comparison made with the present system of charges.

The project managers for this assignment has been Per-Ove Hesselborn at SIKA and Stefan Pettersson at the National Rail Administration.

Summary

According to the 1998 transport policy decision, traffic operators are to pay charges equivalent to the social marginal costs for traffic on state railway track. The track charge system that was introduced ensuing from the transport policy decision also only included charge components intended to reflect different marginal costs, namely charges for wear and tear of track, emissions and accidents. Certain new charges and charge components have, however, been added with the intention of contributing to financing various fixed costs such as the Öresund bridge.

Charges totalled approximately SEK 456 million in 2001. Passenger traffic accounts for almost 65 per cent of the income. The track charge is the predominant type of charge for both passenger and goods transport although the accident charge, the traffic information charge and the special charge for crossing the Öresund bridge also produce a considerable income.

The external social marginal costs of track use refer to the cost that an additional train gives rise to which the train operator does not pay for. The track charge aims at internalising this external cost. In that way it is permitted to exercise an influence on choice of rolling stock, provision of services, the allocation of train paths in conjunction with adoption of timetables, annual track capacity utilisation plans, etc.

The report uses material in the form of marginal cost estimates taken from various studies initiated by the National Rail Administration and SIKA and from freestanding projects.

The following costs are taken up:
- Infrastructure costs
- Congestion and scarcity costs
- Costs related to accidents
- Environmental costs

Infrastructure costs – the costs that the traffic provider causes the track authority, including the traffic management – have been divided into three categories: costs for wear and tear of track, costs for traffic management and costs for use of terminal facilities. Environmental costs have also been divided into three categories: emission costs from diesel, electric rolling stock and noise costs.

From the review of EC legislation that took place in consultation with the Railway Commission which is at present preparing its report, we draw the following conclusions:

- the EC Directive does not entail any hindrance for Sweden to introduce marginal-cost based track charges and
- the EC Directive states how deviations from a strict marginal-cost based track charging may be made with a view to meeting the fixed costs of the infrastructure, and that this does not in practice restrict the possibilities of levying financing track charges which, in accordance with the ambition for Swedish transport policy, should distort resource use as little as possible.

However, we have made the assessment that the part of the track charge imposed on rail passenger traffic which is intended to finance the Öresund bridge may conflict with the EC Directive.

Incomplete estimates of marginal costs and limitations in the present charge collection system set narrow limits for what can be achieved in the short term in the form of track charges based on marginal costs. In the somewhat longer term – perhaps in a couple of years – there should, however, be considerably more freedom of manoeuvre. We consider that it should then be possible to have access both to more complete estimates of marginal costs and an effective charge collection system.

The National Rail Administration furthermore takes the general view that it is not appropriate to make any changes in track charges until the Railway Commission and the Road Transport Commission have completed their work and before a more developed system of charge collection has been taken into use. Should adjustments to the track charges take place notwithstanding this, the National Rail Administration takes the view that it must be done in a way that is neutral between modes of transport from the point of competition. Moreover, the consequences of a change in charges levied on the National Rail Administration's budget must be analysed.

In our assessment, *traffic congestion*, as well as *scarcity of track capacity*, give rise to social costs which vary with the volume of traffic and affect others than those who give rise to the disruption or lack of capacity. This means that they are marginal costs, that may be relevant to take into consideration when setting charges. In our assessment, however, the costs that traffic congestion gives rise to can be better handled outside the track charge system. Neither are we convinced that track charges are the most suitable means of dealing with the problem of scarce track capacity.

New estimates of *operating and maintenance costs* indicate lower values compared with the estimates on which today's track charges were based. In our assessment, the new estimates are more reliable. A deficiency in the current estimates is, however, that the reinvestment costs relevant to charges could not be estimated at all, although they make up an important part of the marginal wear and tear costs. The National Rail Administration considers that the wear and tear component in the track charge could be reduced to SEK 0.12/gross tonne kilometre. However, SIKA considers that the presently available information does not provide a basis for changing the wear and tear component of the track charges but that this should be retained at the level SEK 0.28/gross tonne kilometre.

Since the *marshalling charge* is based on fifteen-year old information on maintenance costs at the marshalling yards existing at that time, the charge should be terminated and replaced by marginal cost dependent on marshalling. Since the structure and size of a charge of this kind is completely unknown, we suggest, however, that the present charge be retained until new calculations can be presented.

The view of which *accident-related costs* should be taken into consideration in track charges has changed greatly during recent years' development work. Although there are certain additional accident-related costs relevant to marginal costs, which it has not been able to estimate – primarily costs in connection with derailments and collisions – we consider that it is mainly costs in connection with accidents at level crossings that should affect the level of charges. Our proposal is therefore that the accident component be reduced from SEK 1.10 per train kilometre for passenger trains and SEK 0.55 per train kilometre for goods trains to SEK 0.26 per train kilometre for both passenger and goods trains.

Our proposal is that all *emission costs for diesel-powered rolling stock*, both on the line and when used for shunting, should be internalised. Emissions of carbon dioxide should be internalised through carbon dioxide tax and other emissions through track charges. Furthermore, we recommend that the "ASEK" values serve as the base for the valuation of air pollution and that a differentiation be made with regard to type of rolling stock. The National Rail Administration considers that the emissions of carbon dioxide should be valued in accordance with the present valuation in ASEK, i.e. at SEK 1.50 per kilogram carbon dioxide. Moreover, the National Rail Administration takes the view that new emission charges must be introduced in stages and without leading to a deterioration in the competitiveness of the railway. SIKA considers that the emission costs for diesel-driven rolling stock should be internalised in the short term in full in accordance with the calculations presented. However, SIKA considers that carbon dioxide emissions pending new ASEK values could be internalised through charging the same carbon dioxide tax rate applied for road traffic, which corresponds to a charge of SEK 0.63 per kilogram carbon dioxide.

The National Rail Administration is completely opposed to a charge being imposed on *electric train traffic* corresponding to the emission of carbon dioxide in marginal production of electricity. SIKA makes the assessment that a change that means that electric railway traffic has to pay the general energy tax (at present SEK 0.181 per kWh) could be a reasonable approximation of the affected rail traffic's marginal carbon dioxide costs.

The calculations of the *noise costs* made show that the average cost for noise is considerable and varies a lot between different types of traffic and different sections of track. It has not been possible to make estimates of the marginal cost. The National Rail Administration considers that noise costs should not be taken into consideration in track charges, since calculations of marginal cost have not been made and it is doubtful whether charges would be a particularly effective means of affecting noise from rail traffic. SIKA considers that the marginal cost for noise can be substantial in many cases and should therefore be reflected in some way in the track charge system.

Certain types of charges are included in today's track charges that are not related to the railway's marginal costs. These include a *passenger information charge*, and a supplement for the track charge for passenger transport as well as a charge for goods traffic which is levied to provide a contribution to *financing of the Öresund bridge*. SIKA's proposal is that these charges in future should not be levied as track charges although the National Rail Administration considers that the passenger information charge and the charge for the use of the Öresund bridge by goods trains should be retained in the track charge system.

SIKA's proposal on changed track charges and taxes would with the traffic production that took place in 2001 mean that the total income for railway traffic would increase from over SEK 456 to just under SEK 794 million. This is equivalent to an increase in the total charges imposed on rail traffic of approximately 74 per cent. It is primarily goods traffic that will incur charge increases. The standpoint of the National Rail Administration is that neither the track charge system nor the levels of charges should be adjusted at present. The National Rail Administration's alternative proposal is that track charges be changed so that they are reduced by approximately SEK 282 million or 62 per cent calculated on the basis of traffic in 2001.

THE SWEDISH INSTITUTE FOR TRANSPORT AND COMMUNICATIONS ANALYSIS

The Swedish Institute for Transport and Communications Analysis, SIKA, is an agency that is responsible to the Ministry of Industry, Employment and Communications. SIKA was established in 1995 and has three main areas of responsibility in the transport and communications sector:

- To carry out studies for the Government
- To develop forecasts and planning methods
- To be the responsible authority for official statistics

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ISSN 1401-3460