Järnvägssektorn efter järnvägsreformen 1988
- Förändringar i omvärlden, trafikpolitiken och järnvägsbranschen och i järnvägens marknad 1990 - 2000

Ökat transportarbete

Milorner
perdonkilometer

1990
Avreglering
flyg
Moms
på resor

2000
Avreglering
buss
Nya tåg,
nya banor

Lägre pris:
• Moms -12%
• Avgifter -4%

Bo-Lennart Nelldal
Avd för Trafik- och transportplanering
The Swedish railway sector since the 1988 railway reform

Changes in external factors, transport policies and the railway industry, as well as in the rail market, from 1990 to 1999

In many respects, developments in the 1990s represented a reversal of previous trends. A new national transport policy was adopted in 1988, including a socio-economic approach to railway infrastructure investment, and the separation infrastructure responsibility from train operations (by Swedish State Railways, SJ). This has brought about an entirely new set of conditions. The decade witnessed extensive investment in new railway lines, and the modernisation of SJ also got under way. In addition, conditions were created for increased competition between traffic operators were created.

One of the aims of the new transport policy was to stop the negative trend in railway development and enable rail to assume a more important role in the general transport market. Technology was now available to run passenger trains at considerably higher speeds than before and conditions were suitable for the operation of more efficient freight transport systems. Behind all this were to be found the energy crises of the 1970s and the environmental issues that assumed a prominent position in the 1980s. It should be remembered that the railway is one of the most environmentally sound modes of transport. This paper therefore aims to describe how the new transport policy affected Swedish railway development during the last decade of the 20th century.

Passenger traffic

In Sweden, external factors affecting passenger transport have not been favourable, with a fall in private consumption at the beginning of the 1990s and unemployment at its highest rate since the post-war years. As economic growth is now under way again, it is not surprisingly the most attractive transport options that growing fastest. As a result of improved infrastructure, the railways have in fact become a market leader in many instances.

The net result in terms of rail passenger transport development is a positive one; passenger-kilometres have increased and the railway has been able to maintain its market share. As this decreased in the 1980s, the 1990s thus represent a trend reversal! In 1999, travel was at record levels and continued to increase in 2000 to 8,300 million passenger kilometres. High-speed and fast regional trains account for the major part of the increase, while night train traffic has decreased.

However, one factor which had a negative effect on rail travel was the introduction of value added tax, VAT, on travel in Sweden in 1991. This reduced long-distance travel by 20% in just two years. As private consumption also decreased at the same time, and unemployment rose, the market was extremely sensitive to price increases. The new VAT affected travel by air and road as well as that by rail.

Major investments have been made in the railways, but they have resulted in major traffic disruptions during the time-consuming construction phase. Certain strategic links are still not complete, or have at least been considerably delayed. This applies, for example, to the West Coast Main Line from Malmö to Gothenburg – on which train travel in 2000 is still no quicker than in 1990! Moreover, poor rolling stock availability has limited the ability to offer a sufficiently good service: there is still a large, untapped potential here.
Once the investment in improved infrastructure and more rolling stock has been completed and a traffic pattern taking advantage of these changes has developed, the anticipated increase in passengers will no doubt also materialise, particularly on newly-built lines like the Svealand Line, where travel has now increased eight-fold, compared with the old line. This project was subject to a great deal of criticism in public debate – opponents held that its trains would not attract any passengers, but the reality could not have been more different: insufficient, over-crowded trains, despite relatively high ticket prices. Here, too, there is unexploited traffic potential.

Deregulation has taken place in air and long-distance bus travel as well, although this did not result in any major changes in transport patterns during the 1990s. Initially, the railways lost some traffic on a few lines, but, as the supply stabilised in the latter part of the decade, and with lower track access charges geared to the internalisation of externalities being phased in, rail has increased its market share on some routes, particularly at the expense of the car.

The deregulation of county transport services, which began in 1990, led above all to pressure to reduce costs on tendered services. The indirect result of this may have been that county public transport authorities have been able to afford to retain and purchase more rail services.

More new operators appeared in 2000, partly on more commercial services, where they themselves can influence both costs and revenue, and SJ’s market share fell to 70%. Problems also appeared however, with the new West Coast Line company going bankrupt and the new operator in Stockholm having great difficulty in maintaining a service due to staff shortages. On the other hand, night trains to Norrland did well.

An attempt has been made to quantify the effects of various factors in the 1990s. The largest negative factor by far is the VAT on travel – this has reduced travel by some one thousand million passenger-kilometres. On the other hand, the introduction of new trains and new lines is reckoned to have resulted in an increase of approximately one and a half thousand million passenger-kilometres. The deregulation of air and long-distance bus traffic initially resulted in a slight reduction in rail traffic. This has, however, been partly offset by lower fares and track access charges, as a result of 1999 internalisation of externalities. In addition, the overall market has grown by some 600 million passenger-kilometres.

The net result of this is an increase in total train travel in the 1990s of 1,400 million passenger-km, i.e. about double the growth in the overall market. Rail’s market share for long-distance travel has been constant, in contrast to the 1980s when it diminished. Short-distance travel has increased most rapidly, thereby increasing the market share for rail travel.

The greatest positive effect of the 1988 transport policy reform, with its creation of the socio-economically orientated Track Authority and independent operators, is that investment in new lines has become a reality. The result of this is that passenger traffic has increased to its highest ever level. With a continued high-level of investment, this is a good basis for the continued expansion of the rail market.

The prospects for rail travel in the new decade may therefore be regarded as being better than those during the 1990s. Sweden’s economy is more in balance and investment in new rail lines is beginning to pay off. The Öresund Bridge opened in 2000 and high-speed lines are being built in the ‘Nordic Triangle’. The Government has decided to increase funding for railway maintenance and to invest SEK 100,000 million in new lines up to 2015.

SJ has been turned into a limited company and divided up into separate companies for passenger and freight services, and support service. The latter two are currently being privatised. The support service companies can thereby be exposed to competition and work
with more operators. Problems can nevertheless arise in the period before the new structure is fully functional.

A considerable number of new railway vehicles have been ordered, or are in the process of being ordered, by both SJ and a number of regional authorities. Modern rail vehicles are considerably more cost-effective than older ones and also offer a more attractive service. New operators have been established, thereby increasing the degree of market cost pressure. Research at KTH reveals that there is real potential for increased travel and market share, especially if quality services can be offered at lower prices than today.
The below graph puts the growth during the 1990s in a clear long-term perspective. Rail transport volume fell continuously from 1950 to 1970. A drastic increase occurred in 1974 due to external factors: the first energy crisis, with rationing and increased fuel prices. The next break in the trend came in 1980 as a result of a policy of low prices on the railway combined with increased prices for energy. 1999 marked the start of a new period of growth, to the highest ever level, because of new lines and trains, as a result of the 1988 transport policy.

Short-distance travel has grown continuously throughout the 1990s as a result of the expansion of regional rail networks. Long-distance travel dropped at the start of the decade as a result of the introduction of VAT on travel, which was also partly responsible for a reduced output. Growth only took off towards the end of the decade, with many projects completed and faster trains in service. This growth is expected to continue with the introduction of new lines and trains.
### FACTORS AFFECTING THE DEVELOPMENT OF RAILWAY PASSENGER TRAFFIC IN SWEDEN

<table>
<thead>
<tr>
<th>External factors</th>
<th>National transport policies</th>
<th>Railway industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced private consumption from 1990 to 1993</td>
<td>Division of SJ into Rail Infrastructure Authority &amp; traffic operator</td>
<td>Streamlining process of SJ towards better customer orientation</td>
</tr>
<tr>
<td>VAT on travel introduced in 1991</td>
<td>Large rail investment programme begun</td>
<td>New passenger train operators emerge</td>
</tr>
<tr>
<td>High unemployment rate</td>
<td>Regional railway lines deregulated</td>
<td>New product introduced: the X2000</td>
</tr>
<tr>
<td>Changes in private car ownership &amp; drivers' licence patterns</td>
<td>Deregulation of air traffic in 1994</td>
<td>Increased price differentiation and “yield management”</td>
</tr>
<tr>
<td>VAT reduced to 6% in 2000</td>
<td>Deregulation of long-distance bus traffic from 1997 to 1999</td>
<td>Quality problems arising during infrastructure modernisation</td>
</tr>
<tr>
<td></td>
<td>Reduced track access charges in 1999 due to the internalisation of externalities</td>
<td>New lines &amp; new trains: the Svealand Line opened in 1997</td>
</tr>
<tr>
<td></td>
<td>“Rikstrafiken” formed in 2000 to franchise operations</td>
<td>New Arlanda Airport line opened in 1999</td>
</tr>
<tr>
<td></td>
<td>New traffic operators on the mainline network from 2000</td>
<td>New operators win traffic</td>
</tr>
<tr>
<td></td>
<td>Öresund Bridge opened in 2000 and charges introduced</td>
<td>In 2000, SJ’s market share fell to 70% and new operators faced problems</td>
</tr>
<tr>
<td></td>
<td>Decision to commercialise and divide up SJ</td>
<td>Öresund trains started running in 2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New high-speed train company formed by SJ and NSB: LINX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ forms SJ AB (share company) for passenger services</td>
</tr>
</tbody>
</table>
When it comes to rail freight traffic developments during the past decade, the trend has been a negative one. It is true that total volume has been constant, but market share has fallen drastically, aside from in 2000. In addition, the total freight market has increased significantly, especially for international transport. To a large extent, this involves long distances as well as large volumes, which should lend themselves readily to rail transport. As the rail market share has been fairly constant since the early 1970s, this last decade in fact represents a negative trend reversal.

As far as domestic traffic is concerned, the main explanation for the above trend is the increase in the gross weight of Swedish trucks. This has resulted in an increase in the net permissible payload from 31 to 40 tonnes, which cuts the average trucking cost per tonne-km by approximately 22%. This has enabled trucks to compete more successfully, both over longer distances and for larger freight volumes – the traditional market for rail freight. A further result is a general reduction in haulage charges, which has cut rail operators’ profitability, making it difficult for them to grow and invest in new systems.

The picture is more complex in respect of international haulage. Swedish international rail freight has suffered from a number of factors: the deregulation of road haulage, the deregulation of the railways (and the inability of operators to adjust sufficiently well to new conditions), and the high track access charges in certain countries.

Road haulage deregulation took the form of international haulage quotas being increased and then abolished altogether in 1995. In addition, cabotage was permitted, i.e. lorries from EU member states are now allowed to transport goods in other member states as well. The very structure of the road haulage industry, with its many small operators, easy establishment of new businesses, stiff competition and varying conditions in different countries, makes the utilisation of vehicles and staff very flexible. This also makes it difficult to check compliance with legislation and regulations.

So far, the effect of railway deregulation on market share has often been negative, which can in part be because it has yet to be completed in many countries. The starting point has been loss-making railway companies, far from commercial viability, which in some countries have acted as job creation schemes. The process of transforming them into profitable, customer-oriented businesses has therefore been difficult and time consuming. Perhaps the best results so far have been achieved in Sweden, Finland and Great Britain. However, major problems still exist in countries that are important Swedish export markets, such as Germany and France.

As new economic demands are imposed on old railway enterprises, a process of rationalisation and restructuring is initiated, which often leads to reduced service levels and higher prices. This automatically reduces market shares. A number of countries have also adopted the policy of charging track access charges at 100% cost coverage, which in practice has meant a price increase. The fact that the rail market is formally free and deregulated is practically irrelevant, as costs have become so high that it is difficult to compete with road haulage on price alone!

An aggregate estimate of theoretical rail market share losses in the 1990s has been made, based on a comparison with a situation of constant market share in 1990; this also corresponds to the average share in the 1970s and 1980s. If rail’s market share had been as high in 2000 as in 1990, its traffic volume would have increased to 22,900 million tonne-km, corresponding to an increase of 3,800 million tonne-km, but it only went up by 1,000 million
This reduced market share therefore equals a total loss of growth of the order of 2,800 million tonne-km.

For domestic traffic, the loss of market share as result of higher gross lorry weights amounts to some 1,900 million tonne-km. For international traffic, the loss due to rail’s lack of capacity and increased road haulage competition is around 1,600 million tonne-km. This is in addition to a loss of approximately 1,300 million tonne-km, *ceteris paribus*, due to an increase in the degree of refinement of transport goods.

Under the conditions operative during the 1990s, the positive effects of the 1988 transport policy for freight are not as immediately obvious as those for passenger traffic. Rail’s position would probably have been even worse had track access charges not been set on socio-economic basis, and without the investment that has been made in capacity and track strength. This is indicated by a general comparison with growth in other European countries, without competition from lorries of the size allowed in Sweden. The graph below shows the growth in rail’s market share in Sweden, the 15 EU countries and the USA. As fully comparable statistics are not available, the graph has to be interpreted with care, but it still shows some interesting growth trends.

In Sweden, market share fell at the start of the 1990s as a result of increased gross lorry weights, but the rate of loss eased off subsequently. Indeed, the year 2000 even saw an increase in market share as a result of reduced track access charges. This level was maintained in 2001, according to provisional figures. The negative trend eased off somewhat earlier in Europe, but here lorry weights have not increased.

At the end of the 1990s, the rail market share in Sweden was double that in Europe, 30% compared with 15%. Sweden’s railways are amongst the most efficient in Europe, but even so not as efficient as those in the USA, where market share is around 50%. Furthermore, the US figure has remained relatively constant the whole time.

However, the situation in the USA is completely different. There are no international borders. There are 5 large, national railway companies, which in turn co-operate with 500 local feeder lines. The railway companies are private and profitable, and own their own infrastructure. Axle weights have been raised successively and now stand at 35 tonnes, compared with 22.5 tonnes in Europe, and lorries are much smaller than those in Sweden.

However, the conditions for rail freight may be more favourable in the coming ten-year period. In contrast to the 1990s, there are no plans to increase the weight and length of lorries in Sweden, but the Swedish Track Authority has started a network modernisation programme, to permit higher axle loads and a larger loading gauge. Some of this has already been realised and more is in progress. The value of this is increased by the development of new, more track-friendly wagons, now in full swing. However, this mainly applies to wagon-load traffic, and there is a problem in that many industrial sidings have been closed.

Trends are more uncertain in respect of inter-modal freight. New system solutions – or entirely new and different domestic transport conditions – are required here if inter-modal freight is to become a real alternative to the heavy Swedish lorries of today. More research and prototype development are needed to find efficient ways of integrating rail and lorry that will achieve greater market penetration.

The implementation of the EU’s decision of 2001 creates conditions for the development of cross-border traffic. The formation of IKEA Rail, which handles its own rail services across Europe, is an example of the application of these principles. The plan is to start operations in
2002 and radically increase the proportion of the firm’s transport needs satisfied by rail by taking control of the whole transport chain.

The Swedish transport policy reform, with a socio-economically orientated track authority and independent operators, is a prototype for Europe. Radically new possibilities for international transport would be created were the Swedish conditions to be replicated internationally. Coupled with a continued high-level of investment, there is a sound basis for the increase in rail-freight’s market share.

**Freight traffic in Sweden, EU and USA**

*rail’s market share*

of total road (in USA inter-city), rail and inland waterways

![Graph showing freight traffic in Sweden, EU, and USA](image_url)

Remark: Some figures 1970-1990 are missing and the last years are preliminary.
### FACTORS AFFECTING THE DEVELOPMENT OF RAILWAY FREIGHT TRAFFIC IN SWEDEN

<table>
<thead>
<tr>
<th>External factors</th>
<th>National transport policies</th>
<th>Railway industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid increase in foreign trade</td>
<td>Large rail investment programme begun</td>
<td>Rationalisation and customer orientation of SJ</td>
</tr>
<tr>
<td>Internationalisation of industry; Swedish membership of the EU</td>
<td>Regional railway lines deregulated in 1990</td>
<td>Short lines companies established</td>
</tr>
<tr>
<td>Large company mergers</td>
<td>New responsible body for the Inland Line in 1993</td>
<td>More direct trains to the continent</td>
</tr>
<tr>
<td>Rise and fall of the IT industry</td>
<td>Operation of northern Ore Line transferred to LKAB mining co. in 1993</td>
<td>New international traffic operators</td>
</tr>
<tr>
<td></td>
<td>Increased max. gross weight of Swedish lorries: 51.4–56.0–60.0 tonnes</td>
<td>No. of marshalling yards reduced: 30–11–6–3</td>
</tr>
<tr>
<td></td>
<td>Tax on heavy lorries reduced in 1993</td>
<td>No. of inter-modal freight terminals reduced</td>
</tr>
<tr>
<td></td>
<td>Road haulage within the EU deregulated</td>
<td>New products offered</td>
</tr>
<tr>
<td></td>
<td>Railway deregulation within the EU begun</td>
<td>New whole-train-load services introduced, with new operators</td>
</tr>
<tr>
<td></td>
<td>Deregulation of Swedish mainline network in 1996</td>
<td>Transport warehouse “SJ Cargo Group” established in 1998</td>
</tr>
<tr>
<td></td>
<td>Track access charges reduced due to internalisation of externalities in 1999</td>
<td>Higher axle loads, greater weight per unit lengths, larger loading gauge</td>
</tr>
<tr>
<td></td>
<td>Öresund Bridge opened in 2000</td>
<td>SJ forms “Green Cargo” for freight traffic</td>
</tr>
<tr>
<td></td>
<td>Decision to commercialise and divide up SJ</td>
<td></td>
</tr>
</tbody>
</table>

**Diagram:**
- **Market growth**
- **Lower track-fees**
- **Net result**

**Graph:**
- **Increase in ton-km**
- **Decrease in ton-km**
- **Million ton-kilometres**

- **1990**
- **2000**

- **1990 – 2000**

- **Increase in gross-weight truck**
- **International traffic**
- **Increased degree of refinement**