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EUROPEAN RAILWAY COMPARISONS COMPANY PROFILES

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ABSTRACT

PRESTON, JM and NASH, CA (1992). European Railway Comparisons. *ITS Working Paper* **379**, Institute for Transport Studies, University of Leeds, Leeds.

This work was undertaken as part of a project sponsored by the British Railways Board entitled `European Railway Comparisons'. The aims of this project are as follows:

(i)To compare the current efficiency of European railway operators and examine recent trends at both aggregate and disaggregate levels.

(ii)To assess the effects of economies of scale and economies of density on European rail operations.

(iii)To make an exploratory assessment of the potential for further disaggregation by market type (InterCity, Commuter, Freight) in order to make detailed comparisons of market shares.

The main methods employed to carry out this study are as follows:

(i)A review of the literature on railway cost and productivity analysis. Preliminary findings are given in Working Paper 354 and a paper presented to the World Conference on Transport Research (Nash, C.A. and Preston, J.M. (1992) "Assessing the Performance of European Railways").

(ii)Collation of published data for 13 European State Railway Operators.

(iii)Face to face interviews with managers at the 13 State Railway companies in order to check our understanding of published data sources, gain more infomation at a disaggregate level (administered by a self completion questionnaire) and obtain an understanding of the institutional background.

This report summarises some of the background information that was obtained from the interviews undertaken in the summer of 1992. A company profile is developed for each operator under four main headings: Objectives and Management, Finance, the Freight Market and the Passenger Market.

KEY-WORDS:

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1.AUSTRIA - Oesterreichische Bundesbahn (OBB)

A. OBJECTIVES and MANAGEMENT

1. Ownership and Organisation

OBB is currently still operated as a department of state, being part of the government budget. A new railway law will come into effect on 1/1/93, which will implement EC requirements ready for Austrian membership and give OBB much greater commercial freedom. Under this law, OBB will be split into operating and infrastructure divisions as part of the same organisation. The government will pay for the infrastructure but will charge for its use (charges, based on marginal cost, will cover 3/8 of the cost with the state bearing the rest). The operating division will be free to act commercially; the government will be able to buy uncommercial services, but will have to negotiate a contract, with proper payment, to do so. At present OBB is required by law to provide various uncommercial services.

2. Objectives and Controls

Currently, OBB's objectives and constraints are largely defined in terms of legal obligations. Under the new law, the operating arm of OBB will have clear commercial obligations, with social obligations being the responsibility of the state to provide and fund.

3. Subsidiary Activity

OBB owns a large fleet of buses and some lorries and ships. It also operates some 70 narrow-gauge secondary railways, which complicates comparisons with Switzerland, where these are totally separate from SBB. Many studies over the years have recommended closure of most of these, but whilst some have closed, further closures are not currently under consideration.

B. FINANCE

1. Government Support

OBB currently receives support ex post under four legal provisions. These are (amounts received in 1990 in brackets):

a. Tariff obligations for passengers (3110m schillings)
freight (1503m schillings)
b. Provision of local passenger services (2800m schillings)
c. Maintenance of the infrastructure (4560m schillings)
d. Operation of secondary railways (1951m schillings)

Total support from the state is therefore 13924m or 36% of turnover.

2. Investment

The Neue Bahn concept was launched in 1987, the aim being to relieve pressure on the road system by massive investment in rail infrastructure. As part of the deal, OBB was required to improve its efficiency and marketing.

The Neue Bahn concept requires investment of some 60000m. Austrian schillings over 10 years 1991-2000, and will upgrade the Vienna-Salzburg line for speeds for 160-200 kmph, build a Semmering base tunnel, improve the Brenner and Taker routes as improving many other passenger and freight terminals, provide new rolling stock and expanded track capacity for freight and passenger services. Further studies on high speed and on the Brenner base tunnel under the Alps for international freight and passenger traffic are continuing.

Currently OBB cannot borrow from the private capital market, but under the new law it will be able to, probably with government guarantee.

C. FREIGHT MARKET

1. Services

In 1990, OBB carried 62.6m tonnes of freight of which .769m was less than wagonload traffic. Of the wagonload traffic, only 18.392m tonnes was domestic; 18.475 was imports, 13.426 was exports and 11.528 transit. A total of 11m tonnes of inter modal traffic was carried, of which almost all was international. A breakdown of commodities carried is given in Table 1.1; from which the continued importance of food and agriculture is apparent, no doubt in part as a result of the continuation of wagonload traffic to many small stations under the requirements of an obligation to carry and tariff obligations.

2. Pricing

OBB is free to set freight tariffs except where it is obliged to provide uncommercial tariffs and compensated by the state for it.

3. Competition

Road haulage competition is very severe. Although road hauliers are subject to a tonne km tax for traffic of over 175km, this is levied on the basis of consignment notes, and can be widely avoided by splitting the journey into stages. This also distorts data on road haulage operations.

D. PASSENGER MARKET

1. Services

OBB operates international and intercity domestic trains, stopping trains, suburban trains and secondary railways. Part of the Neue Bahn concept is to introduce regular interval inter city and inter regional services throughout the system.

2. Pricing

Tariffs are currently controlled by the state, which has held them down as part of anti-inflation policy. Generally an increase has been permitted only once every three years. Under the new law, OBB would have commercial freedom except where prices were the subject of a contract with the state.

OBB is a member of several Verkehrsverbund (or PTE) arrangements whereby local authorities set fares for all modes of public transport. In this case local authorities make a payment to the state in respect of these costs.

3. Competition

OBB used to hold all bus licences throughout Austria, although it franchised many services to the private sector. Although it still owns many buses, private operators are now licensed by the 9 districts. Although car is the main competitor, coach competiton is growing - particularly as a result of liberalisation in Eastern Europe - and raises bigger issues regarding fair competition regarding insfrastructure costs.

2. BELGIUM - Société Nationale des Chemins de Fer Belges (SNCB)

A. OBJECTIVES and MANAGEMENT

1. Ownership and Organisation

In October 1992, SNCB became a public economic company for an indefinite period of time. It is organised into 6 main departments (Transport, Rolling Stock, Infrastructure, Finance and B-Cargo), with operations divided into 5 districts (see Figure 2.1).

2. Objectives and Controls

An important change in law on March 21st 1991 strengthened the autonomy of four public companies (aviation control, postal company, communication and railways). A council of administration and a committee of directors were to be installed and a managerial contract was to be drafted.

Since October 1992 the five year renewable contract between the state and SNCB defines the public mission as being:

a)To provide domestic passenger train services;
b)The acquisition, installation, maintenance, management and operating of infrastructure and investments in rolling stock;
c)To deliver services which meet the needs of the Nation.

The managerial contract also regulates the financial contributions by the state, covering the consequential costs of the public mission.

The contract states the passenger network to be served and the stations to be regarded as intercity and local. For each type of station a minimum frequency of service is

Table 1.1(a) Wagonload Traffic by Type of Goods (tonnes)

	Total	Domestic	International	Imports	Exports	Transit
Tonnes	61 821 312.1	18 392 077.6	43 429 234.5	18 475 201.9	13 426 140.3	11 527 892.3
	100.0	100.0	100.0	100.0	100.0	100.0
0.Agricultural products & live animals	8 034 114.3	3 185 173.7	4 848 940.6	2 382 703.7	1 440 302.1	1 025 934.8
	13.0	17.3	11.2	12.9	10.7	8.9
1.Foodstuffs & fodder	2 876 860.2	1 109 790.4	1 767 069.8	554 896.5	747 887.9	464 285.4
	4.6	6.1	4.1	3.0	5.6	4.0
2.Solid fuels	3 639 159.2	770 747.0	2 868 412.2	2 799 487.8	1 981.3	66 943.1
	5.9	4.2	6.6	15.2	0.0	0.6
3.Oil products	3 633 626.5	1 391 360.3	2 242 266.2	1 460 894.9	342 027.3	439 344.0
	5.9	7.6	5.2	7.9	2.5	3.8
4.Minerals & wastes for the metals industry	6 745 191.0	3 001 630.2	3 743 560.8	2 290 620.5	522 262.0	930 678.3
	10.9	16.3	8.6	12.4	3.9	8.1
5.Metal products	4 259 185.3	991 623.6	3 267 561.7	983 770.5	1 014 519.8	1 269 271.4
	6.9	5.4	7.5	5.3	7.6	11.0
6.Minerals & construction materials	4 569 991.9	2 855 859.0	1 714 132.9	596 909.3	790 458.2	326 765.4
	7.4	15.5	3.9	3.2	5.9	2.8
7.Fertiliser	1 911 185.1	329 739.5	1 581 445.6	606 237.4	696 322.2	278 886.0
	3.1	1.8	3.6	3.3	5.2	2.4
8.Chemicals	5 175 878.8	1 181 203.5	3 994 675.3	1 966 207.8	967 608.8	1 060 858.7
	8.4	6.4	9.2	10.6	7.2	9.2
9.Machines, vehicles, manufactured goods & specialised transactions	20 976 119.8	3 574 950.4	17 401 169.4	4 833 473.5	6 902 770.7	5 664 925.2
	33.9	19.4	40.1	26.2	51.4	49.2

Table 1.1(b)
Wagonload Traffic by Type of Goods (tonne km)

	Total	Domestic	International	Imports	Exports	Transit
Tonne km	12 506 932.5	3 473 467.0	9 033 465.5	3 183 933.6	2 986 622.6	2 862 909.3
	100.0	100.0	100.0	100.0	100.0	100.0
0.Agricultural products & live animals	1 706 178.1	626 085.4	1 080 092.7	401 355.7	356 227.3	322 509.7
	13.6	18.0	12.0	12.6	11.9	11.3
1.Foodstuffs & fodder	728 930.2	290 454.7	438 475.5	99 223.5	181 509.9	157 742.1
	5.8	8.4	4.9	3.1	6.1	5.5
2.Solid fuels	625 656.1	101 368.5	524 287.6	507 291.4	189.6	16 806.6
	5.0	2.9	5.8	15.9	0.0	0.6
3.Oil products	907 474.9	498 397.6	409 077.3	127 582.5	50 645.6	230 849.2
	7.3	14.3	4.5	4.0	1.7	8.0
4.Minerals & wastes for the metals industry	1 084 920.4	377 096.9	707 823.5	410 188.5	149 339.5	148 295.5
	8.7	10.9	7.8	12.9	5.0	5.2
5.Metal products	972 835.0	115 409.1	857 425.9	181 538.0	297 671.6	378 216.3
	7.8	3.3	9.5	5.7	10.0	13.2
6.Minerals & construction materials	663 249.3	322 296.3	340 953.0	88 098.9	183 519.3	69 334.8
	5.3	9.3	3.8	2.8	6.1	2.4
7.Fertiliser	348 690.8	64 343.5	284 347.3	102 776.5	106 936.6	74 634.2
	2.8	1.9	3.1	3.2	3.6	2.6
8.Chemicals	1 102 206.2	228 527.7	873 678.5	318 664.6	206 632.2	348 381.7
	8.8	6.6	9.7	10.0	6.9	12.2
9.Machines, vehicles, manufactured goods & specialised transactions	4 366 791.5	849 487.3	3 517 304.2	947 214.0	1 453 951.0	1 116 139.2
	34.9	24.4	38.9	29.8	48.7	39.0

specified (for inter city, this is 16 per day in each direction on working days and 12 on other days and for local at least 4 per day in each direction). Overall SNCB is to operate a minimum of 160,000 passenger train kilometres (including at least 70,000 intercity and 60,000 local) on working days and 100,000 (including at least 55,000 inter city and 30,000 local) on other days. With the permission of the Minister, some of these connections may be made by bus, and SNCB may withdraw services from any station for which traffic falls below 150 passengers per working day and 75 per other day.

The contract also specifies detailed quality standards, for instance concerning the facilities to be provided on trains and at stations, reliability (95% of passenger trains to arrive within 5 minutes of schedule), overcrowding. SNCB must produce an annual corporate plan.

3. Subsidiary Activity

Recently SNCB decided to continue parcel transport, mainly by road, as a largeley autonomous subsidiary. SNCB owns shares in several companies, their activities being complementary to railway objectives (see Tables 1.2 and 1.3).

B. FINANCE

1. Government Support

In 1990, SNCB received 34.81b BF in state compensation for public missions and normalisation of accounts, of which 20.94b BF was direct state support towards passenger operations, compared with 12.1b BF of revenue from passengers. However, this undoubtedly understates the level of support.

20,948,310 state compensation for passenger traffic, covering partially infrastructure costs.
13,746,194 state compensation for imposed financial charges disadvantaging the compensation position of SNCB.
115,996 contribution to normalisation of the cost of personnel
34,810,500
20,221,004 contribution to pension
55,031,504

The new contract has restructured state compensation and contributions. It guarantees SNCB, from 1992 to 1996, an annual contribution of 12.1b BF in respect of service level and tariff obligations in the domestic passenger sector and a yearly non indexed payment of 24b BF in order to contribute to the cost of maintainance, management and operation of the infrastructure. Together this comes to 36.1b BF compared to 34.8b BF in 1990. On top of this an annually calculated support to pension and other social charges will be acredited.

2. Investment

In 1990, SNCB had a total investment of 9.7b BF, of which 3b was for rolling stock (including 0.6b BF towards TGV rolling stock) and most of the rest towards infrastructure

Table 1.2: SNCB subsidiaries with majority SNCB shareholding

Affiliation (31.12.91)	Control	Main Activity
Depaire nv	99.10%	Inter. Group expedition, road transport
Bruxelles Terminal Brussel	100.00%	Storage and distribution
H.V.H. International nv	99.90%	Development and marketing of transport software
Ferry-Boats nv	67.82%	Transshipment Terminals in Zeebruge
Interferry nv	100.00%	Expedition by rail of large containers
Euratral nv	100.00%	Service and prospection for DB & ÖBB in Belgium
Zeebrugge Container Repair nv	80.00%	Repair and maintenance of containers
Home van de Spoorwegbediende	99.99%	Social housing loans for SNCB personnel
Woningkrediet voor Spoormannen nv	99.97%	Mortgage loans for SNCB personnel

Table 1.3: SNCB subsidiaries with minority SNCB shareholding

Major shareholdership 20-50% (31.12.91)	Control	Main activity
TRW nv	21.27%	Trailer and truck transport by rail
Euro-Combi-Est nv	40.00%	Operating of multimodal terminals
Sea Ro Terminal	25.00%	Diverse harbour activities
Sea Technology - Zeebrugge nv	50.00%	All activities and services related to transport
Railtour c.v.	38.22%	Rail Travel Agency
Transurb Consult C.V.	24.29%	Transfer of Railway Engineering and Technology
Publifer nv	49.85%	Publicity on railway property

including electrification. Under the 10 year investment plan (1991-2000) agreed with the state and adopted in the new contract, investment is fixed at 11b BF for two years, then rising to 15b BF per annum from 1993 on. The breakdown of these investments varies greatly from year to year. Each year, SNCB has to provide details of proposed investments for state approval. Included in the 11 to 15b BF investment amount are the costs of adaption, renewal and modernising of infrastructure and the acquisition of rolling stock destined for domestic passenger traffic.

Investment may be funded by state grant, by borrowing from the private market with state approval and guarantee or by sale and lease back arrangements for rolling stock. In the latter two cases the state then compensates SNCB for all the costs involved so that in effect SNCB receives all its capital free of charge.

C. FREIGHT MARKET

1. Services

Tables 2.1 and 2.2 show the volumes transported by rail in tonnes and tonne kilometres, and the market share for 1983 to 1990 inclusive. It is seen that the rail share has dropped to 11.9% of tonnes and 21.2% of tonne kilometres. Table 2.3 disaggregates rail traffic by commodity. As for most railways, bulk commodities form most of the traffic, but the total amounts available for transport of these commodities are declining.

2. Pricing

SNCB has complete commercial freedom in pricing freight traffic. Although it publishes a tariff, it carries most of its freight at a discount on specially negotiated tariffs.

3. Competition

Waterways remain very competitive for bulk traffic and roads for general merchandise. Neither fully covers its infrastructure cost.

D. PASSENGER MARKET

1. Services

Passenger services operate mainly on a regular interval basis, and are marketed as Inter City (Including Eurocity international trains), Inter regional and stopping services. However, in reality the three are intimately intertwined both in terms of operations and traffic; thus for instance much commuting takes place on inter regional and inter city trains.

2. Pricing

Pricing is based on mileage, with supplements for some international trains. An enormous list of categories of passenger, including police, war-wounded, large families etc are entitled to varying discounts, compensated by the state.

3. Competition

Although buses and coaches are mainly owned by the regions and could compete, they mostly perform a complementary role, generally connecting with rail services. Only on international services is there serious coach competition. The principal competition, at national level is seen as being the private car. In the interests of relieving congestion, it is intended to maintain and if possible extend the SNCB share of the passenger market, this will entail an increase in traffic of some 50% over 20 years. In the case of Brussels, SNCB caters for some 50% of commuters. Rail serves the central area well, due to the north south tunnel, but increasingly jobs are decentralising away from this corridor.

Figure 2.1: Organisation of SNCB

Council of Administration

Director General

Departments	Districts	General Services
Transport	Centre	Coordination & General
Rolling Stock	North East	Personnel & Social Affairs
Infrastructure	North West	
Finance	South East	Information
Marketing & Sales	South West	Purchasing

3. BRITISH RAILWAYS BOARD - BRB

A.OBJECTIVES AND MANAGEMENT

1.Ownership and Organisation

Railways in Britain came under public ownership in 1948 as a result of the 1947 Transport Act. British Railways were an operating division of the British Transport Commission, which also operated a full range of other transport services. The current British Railways Board (BRB) was established as a result of the 1962 Transport Act, with rail services being promoted under the British Rail banner. The Board consists of six full-time member (all rail managers) and seven part-time members (all managers or ex-managers of other businesses) appointed by the Government. BRB's initial organisational structure was hierarchial in structure, based on geographical divisions (Regions, Divisions and Areas) and separation of functional responsibilities (eg Finance, Marketing, Traction & Rolling Stock, Infrastructure, Personnel and Public Affairs). From 1982 onwards, superimposed on this organisational structure was a further division between business

Table 2.1(a)
Tonnes Transported (m)

	1983	1984	1985	1986	1987	1988	1989
Road (1)							
- Domestic	269.999	267.727	265.383	257.556	259.480	287.611	287.078
- Imports	31.245	34.049	35.409	36.294	41.564	47.452	50.303
- Exports	31.245	34.049	35.409	36.294	41.564	47.452	50.303
- Transit	10.810	13.232	10.620	11.195	11.913	13.887	14.119
TOTAL	343.299	349.057	346.821	341.339	354.521	396.402	401.803
Inland Waterways							
- Domestic	20.050	22.026	21.471	20.884	22.034	22.110	20.310
- Imports	37.195	41.119	39.471	40.129	40.658	45.452	46.959
- Exports	30.249	31.487	28.944	30.910	28.809	28.446	28.123
- Transit	3.728	4.056	3.775	3.415	2.876	3.151	2.876
TOTAL	91.222	98.688	93.641	95.339	94.378	99.159	98.269
Rail							
- Domestic	19.162	20.150	20.127	29.700	31.360	30.713	30.812
- Imports	17.919	19.915	20.101	11.507	11.746	12.112	11.736
- Exports	12.263	13.994	14.467	17.122	16.064	18.092	18.472
- Transit	13.961	16.773	17.744	4.740	4.818	4.867	4.859
TOTAL	63.305	70.832	72.439	72.439	63.988	65.724	65.879

(1) by vehicles with a carrying capacity of at least 1 tonne.

Source: SNCB

Table 2.1(b)
Tonnes Transported (%)

	1983	1984	1985	1986	1987	1988	1989
Road (1)							
- Domestic	87,3	86,4	86,5	83,6	83,0	84,5	84,9
- Imports	36,1	35,8	37,2	41,3	44,2	45,2	46,2
- Exports	42,3	42,8	44,9	43,0	48,1	50,5	51,9
- Transit	37,9	38,8	33,0	57,9	61,2	63,4	64,6
TOTAL	68,9	67,3	67,6	68,3	69,1	70,6	71,0
Inland Waterways							
- Domestic	6,4	7,1	6,9	6,8	7,0	6,5	6,0
- Imports	43,0	43,2	41,6	45,6	43,3	43,3	43,1
- Exports	41,0	39,6	36,7	36,7	33,3	30,3	29,0
- Transit	13,0	11,9	12,0	17,6	14,7	14,4	13,2
TOTAL	18,3	19,0	18,3	19,1	18,4	17,7	17,4
Rail							
- Domestic	6,1	6,5	6,6	9,7	10,0	9,0	9,1
- Imports	20,7	20,9	21,2	13,1	12,5	11,5	10,7
- Exports	16,6	17,6	18,4	20,3	18,6	19,2	19,1
- Transit	48,9	49,2	55,0	24,4	24,6	22,2	22,2
TOTAL	12,7	13,7	14,1	12,6	12,5	11,7	11,6

Source: SNCB

Table 2.2(a)
Tonne km Transported (billion)

	1983	1984	1985	1986	1987	1988	1989
Road (1)							
- Domestic	9.910	10.684	10.380	10.834	10.958	12.375	12.513
- Imports	2.764	3.150	3.310	3.583	3.982	4.497	4.867
- Exports	2.764	3.150	3.310	3.583	3.982	4.497	4.867
- Transit	2.162	2.646	2.124	2.261	2.383	2.777	2.824
TOTAL	17.600	19.630	19.124	20.261	21.305	24.146	25.071
Inland Waterways							
- Domestic	1.589	1.720	1.678	1.641	1.671	1.748	1.610
- Imports	1.646	1.776	1.729	1.782	1.809	2.053	2.089
- Exports	1.246	1.223	1.177	1.322	1.262	1.204	1.236
- Transit	491	523	479	461	380	430	387
TOTAL	4.972	5.242	5.063	5.205	5.122	5.435	5.322
Rail							
- Domestic	986	1.054	1.024	2.270	2.389	2.429	2.601
- Imports	1.916	2.173	2.240	1.743	1.751	1.762	1.772
- Exports	1.539	1.720	1.819	2.680	2.421	2.791	2.965
- Transit	2.429	2.958	3.171	730	705	712	711
TOTAL	6.870	7.905	8.254	7.423	7.266	7.694	8.049

Source: INS - SNCB

Table 2.2(b)
Tonne km Transported (%)

	1983	1984	1985	1986	1987	1988	1989
Road (1)							
- Domestic	79,3	79,4	79,4	73,5	73,0	74,7	74,8
- Imports	46,3	45,4	45,4	50,4	52,8	54,1	55,8
- Exports	49,8	51,7	52,5	47,2	51,9	52,9	53,7
- Transit	42,5	43,2	33,3	65,3	68,7	70,8	72,0
TOTAL	59,7	59,9	59,0	61,6	63,2	64,8	64,0
Inland Waterways							
- Domestic	12,7	12,8	12,8	11,1	11,1	10,6	9,6
- Imports	26,0	25,0	23,8	25,1	24,0	24,7	23,9
- Exports	22,4	20,1	18,6	17,4	16,5	14,2	13,6
- Transit	9,6	8,5	7,5	13,4	11,0	11,0	9,9
TOTAL	16,8	16,8	15,6	15,8	15,2	14,6	14,3
Rail							
- Domestic	7,8	7,8	7,8	15,4	15,9	14,7	15,6
- Imports	30,2	30,6	30,8	24,5	23,2	21,2	20,3
- Exports	27,7	28,2	28,9	35,3	31,6	32,9	32,7
- Transit	47,7	48,3	59,2	21,3	20,3	18,2	18,1
TOTAL	23,3	24,1	25,4	22,6	21,6	20,6	21,7

Source: INS - SNCB

Table 2.3(a)
Tonnes Transported (m) by Commodity (1989)

Commodity	Rail	Inland Waterway	Road	TOTAL
0.Agricultural products and live animals	1.645	5.520	31.112	38.277
1.Foodstuffs and fodder	2.060	6.845	42.734	51.639
2.Solid fuels	11.506	5.401	6.372	23.279
3.Oil products	2.903	19.302	14.862	37.067
4.Minerals and wastes for the metals industry	13.882	5.668	3.683	23.233
5.Metal products	17.126	7.791	16.240	41.157
6.Minerals and construction materials	3.410	29.210	143.568	176.188
7.Fertiliser	1.610	4.920	8.345	14.875
8.Chemicals	3.150	9.112	18.840	31.102
9.Machines, vehicles, manufactured goods and specialised transactions	8.587	4.499	51.626	64.712
TOTAL	65.879	98.269	337.381	501.529

Source: SNCB

Table 2.3(b)
Tonne km by Commodity (1989)

Commodity	Rail	Inland Waterway	Road	TOTAL
0.Agricultural products and live animals	196	351	3.547	4.094
1.Foodstuffs and fodder	250	365	4.465	5.080
2.Solid fuels	1.162	400	369	1.931
3.Oil products	654	809	935	2.398
4.Minerals and wastes for the metals industry	1.782	429	217	2.428
5.Metal products	1.714	345	2.221	4.280
6.Minerals and construction materials	340	1.881	5.963	8.184
7.Fertiliser	209	265	572	1.046
8.Chemicals	480	404	3.285	4.169
9.Machines, vehicles, manufactured goods and specialised transactions	1.262	73	8.821	10.156
TOTAL	8.049	5.322	30.395	43.766

Source: SNCB

sectors. This assisted BRB in its efforts to adopt commercial business principles but the `matrix management' structure that resulted (see Figure 3.1) led to unclear divisions of responsibility and lack of bottom line accountability.

It was therefore decided to re-organise BRB under the Organising for Quality (OfQ) programme, which was completed in June 1992. The Business Sectors became the key organisational unit and were defined as follows; four passenger businesses namely:

1.**InterCity** which is responsible for mainline services and is responsible for five routes (also referred to as profit centres) (the East Coast Main Line, the West Coast Main Line, the Great Western Main Line, the Midland Mainline/Cross Country and Gatwick/Norwich).

2.**Network SouthEast** which is responsible for local services in the London and South East England region and is split into nine divisions (Thames and Chiltern, North, West Anglia and Great Northern, London, Tilbury and Southend, Thameslink, South East, South Central and South West).

3.**Regional Railways** (formerly Provincial) which is responsible for secondary and local services in the rest of the country and is divided into five regions (Scotrail, North East, North West, Central and South Wales and West).

4.**European Passenger Services** which will be responsible for BRB's passenger services through the Channel Tunnel.

In addition there are two freight sectors:

5.**Train Load Freight** specialising in the movement of bulk commodities and consisting of four businesses (Coal, Metals, Construction and Petroleum).

6.**Railfreight Distribution** specialising in intermodal traffic, especially containers, but also operating some trainload services eg for automotive products, and consisting of two businesses (European and UK).

The former parcels sector is operated jointly by the three main passenger businesses whilst corporate functions are provided by Central Services Division. As a result BRB is now divided into 28 profit centres, each of which is vertically integrated with responsibility for operations and infrastructure (in the latter case, either through ownership or leasing through inter-business trading arrangements).

However, further organisational reforms have been proposed by the White Paper "New Opportunities for the Railways - the Privatisation of British Rail" published in July 1992. This sets out six policy intentions to be achieved in the current parliament (ie by April 1997, at the very latest). These are:

1.To sell BR Freight and Parcels to the private sector.
2.To establish a Franchising Authority and to franchise a substantial number of passenger services.
3.To restructure BR to own and operate track and infrastructure separately.
4.To establish rights of access for new operators to the rail network.
5.To establish an independent Regulator.
6.To provide opportunities for the sale or leasing of stations.

BRB's main role in the future will be as an infrastructure authority (`Railtrack') and a residual passenger rail operator of those services (expected to be grouped by profit sector) for which private sector franchisees can not be found. However, it may be expected that BRB staff will transfer to private sector operating companies, the Franchising Authority (yet to be named) and the independent Regulator (`Ofrail'). It should be clear that the proposed reforms imply a massive organisational shake-up with infrastructure being separated from operations, thus reversing recent organisational trends, and three new corporate bodies being created (Ofrail, Railtrack and the Franchising Authority). Figure 3.2 shows how this will transform the rail businesses organisational structure from a simplified multi-divisional structure to a more complex form.

2.Objectives and Constraints

The statutory framework under which BRB currently works was established by the 1974 Railways Act which introduced the concept of a Public Service Obligation (which was also required given Britain's entry into the EEC), which the Minister of Transport could lay on the Board, and in return for which he would have to provide compensation. The initial obligation (issued in a Ministerial directive of January 1975) was for BRB to provide a network of passenger services `comparable generally with that provided by the Board at present'. However, it is not clear exactly what `comparable generally' means in this context and major cutbacks in service have been possible but complete withdrawals have been problematic. For passenger services to be withdrawn and lines or stations closed, a detailed closure procedure enacted by the 1962 Transport Act, has to be undertaken and has, in some cases, prevented closure (with Settle - Carlisle being the most famous case). By contrast, freight services should be operated commercially and there are no closure procedures for freight-only lines.

This obligation was amended by a new Ministerial directive issued in March 1988 which removed from the directive services which `are or may be operated as InterCity services', services in the PTE areas (the main conurbations outside London) and of experimental services under the Speller amendment to the 1962 Transport Act (which exempts these experimental services from the closure procedures discussed above).

InterCity services, like Freight, are now expected to be operated on a commercial basis, with an ultimate goal of an 8% rate of return on assets, although in the meantime lower targets have been set. For the two subsidised sectors (Network South East and Regional Railways) target reductions in subsidy are set. Indeed, it had been hoped at one time that Network SouthEast would operate without subsidy by 1992/93 but this has subsequently been abandoned.

BRB has, in theory, total pricing freedom with the exception of the PTE areas where it acts as an operations sub-contractor to the Local Authorities under arrangements set up by Section 20 of the 1968 Transport Act. BRB's fares are market based, with price discrimination the norm. However, there is some evidence that Government has limited some price increases, particularly on Network SouthEast services which is the one area of operations where BRB is perceived to have a transport monopoly.

BRB has much less of a free hand in terms of capital investment. It is not permitted to raise capital on the open market and its borrowings from government are limited by the External Funding Limit (EFL) which limits the amount an operator may spend in any one year from services other than its own, internally generated finances. Given that up to 40% of BRB's investments have been internally generated and given the information presented in Table 3.1 it can be seen that the EFL has not been a binding constraint in the recent past but may become so in the future (especially as the property market slump has curtailed a major

internal revenue source).

Table 3.1: British Rail (BR) EFL and Investment (£m, cash)

Year	EFL	Out-turn investment
1986/87	777	428
1987/88	591	543
1988/89	375	590
1989/90	673	715
1990/91	1016	834
1991/92	1522	1095
1992/93	2041	
1993/94	1361	
1994/95	975	

Source: Department of Transport 1992 "Government Expenditure" Plans for Transport". Cm1907.

3.Subsidiary Activities

BRB's main non-rail operations subsidiary activities were privatised in the 1980s. These included:

(i)British Hovercraft Limited sold in 1981.

(ii)British Transport Hotels sold between 1982 and 1984 to a variety of private sector groups for £30m.

(iii)Sealink ferries sold to British Ferries Limited, a subsidiary of Sea Containers, in 1984 for £66m (despite a book value of £108m).

(iv)British Railway Engineering Limited (BREL) and the Horwich Foundry sold in 1988.

(v)Traveller's Fare Limited, the on station-catering company sold to the private sector in 1988.

(vi)Doncaster Wagon Works, sold to a management buy-out (RFS Industries).

(vii)British Transport Advertising.

Further, a narrow gauge passenger railway (the Vale of Rheidol) has been transferred to the private sector. Private sector inolvement has also been encouraged for on-train catering, train cleaning, station maintenance and property redevelopment.

British Rail has three main wholly owned subsidiary companies; Transmark, a Consultancy company, British Rail Maintenance Limited, responsible for the National Supply Centre at Doncaster and four other heavy maintenance depots, and BR Telecommunications Limited, to provide business telecommunication services on a commercial arms-length basis and exploit new opportunities. BRB also has a minority share-holding in three railfreight companies designed to increase private sector involvement; Masterhaul, principally involved in the movement of deep sea containers, Charterrail (22% holding) and Combined Transport Limited

(10% holding)

BFINANCE

1.Government Support

BRB recorded a Group loss in 1991/92 of £144.7m, compared to a loss in 1990/91 of £10.9m and a surplus of £269.8m in 1989/90. Table 3.2 gives the result for the rail businesses only for 1990/91 and 91/92.

Table 3.2: British Rail - Financial Results (£m)

	1990/91		1991/92	
	Revenue	Surplus	Revenue	Surplus
Inter City	851.2	49.7	896.7	2.0
Network South East	998.3	(154.9)	1044.3	(181.9)
Regional	203.7	(503.4)	312.9	(583.6)
Trainload Freight	509.5	98.7	505.3	67.5
Railfreight Distribution	172.8	(152.3)	174.9	(118.7)
Parcels	115.8	(25.8)	101.5	(34.7)
TOTAL	2951.3	(688.0)	3035.6	(849.4)
Grant	671.5	(16.5)	766.9	(82.5)

Source: BRB Annual Report and Accounts 1990/91, 1991/92.

It can be seen that TrainLoad Freight and InterCity operated `profitably' during this period with costs recovery ratios in 1991/92 of 115.4% and 100.2% respectively. Network SouthEast achieved a respectable cost recovery ratio of 85.2% but all other businesses are heavy loss makers with cost recovery ratios at 74.5% (parcels), 59.6% (Railfreight Distribution) and 34.9% (Regional Railways).

However, there have been substantial reductions in subsidy. Table 3.3 shows that during the four-year period 1986/7 to 1989/90 subsidy decreased by 37% in real terms, although it is now beginning to increase again (up 9% between 1989/90 and 1990/91). In 1990/91, 20% of Government support was to Network SouthEast services, 14% was to PTE services and 61% was to Regional Railway services outside the main conurbations (with the balance due to capital grants for level crossings).

Table 3.3: British Rail Subsidy (£m, 1990/91 prices)

	1986/87	1987/88	1988/89	1989/90	1990/91
InterCity	137.4	134.1	-	-	-
Network SouthEast	258.5	263.3	155.0	87.8	142.7
Regional- PSO	534.7	512.6	472.2	431.6	428.1
- S20	94.5	97.2	89.7	100.2	100.7
Other *	-	-	-	24.1	28.4
TOTAL	1025.1	1007.2	716.9	643.7	699.9
of which PSO	930.6	910.0	627.2	543.5	599.2

* Capital Grants for Level Crossings (not included in Table 2).

2.Investment

Out-turn figures for investment are given by Table 3.1 and illustrated by Figure 3.3. This shows that the real level of investment is at its highest for 30 years but in part this just reflects the cyclical nature of rail investments. The last major investment programme was the Modernisation Plan of the late 1950s/early 1960s. These assets are now life-expired. Major future investments were outlined in the document "Future Rail" published in 1991 which envisaged investment of £10b over the next decade. The main schemes outlined were:

(i)£1.5b of new railway for the Channel Tunnel, due to open in 1993. In addition, a new fast route is being developed by Union Railways (a steering group of BRB and private sector interests) to develop a fast link to the Tunnel , accessing London via the East Thames Corridor, Stratford and Kings Cross.

(ii)Upgrading of West Coast Main line services (London - Birmingham - Manchester -Glasgow) by introducing InterCity 250 services. This scheme was to be completed in 1995 at a cost of £0.75b but has been postponed given the uncertainties surrounding the White Paper proposals.

(iii)"Total Route Modernisation" for Network South East services including the deployment of a new generation of Network turbo and electric trains. In addition four major schemes are proposed that will lead to the development of a regional express network in London similar to the RER in Paris. These are:

(a)Paddington to Heathrow Airport, a joint project with BAA (British Airports Authority), which is in abeyance due to funding problems

(b)East - West Crossrail, a joint project with London Underground Limited which will link Paddington and Liverpool Street by a new route via Farringdon

(c)Thameslink 2000, improvement of the existing North - South link between Kings Cross and Blackfriars via Farringdon

(d)Kent Express, introduction of fast commuter services using infrastructure developed for Channel Tunnel services.

(iv)Regional Railways main investment need, fleet renewal, will be virtually completed by 1993 but "Future Rail" promises service improvements including 150 miles of electrification, 60 miles of new route and 100 new stations over the next decade.

(v)The main investments in rail freight relate to the Channel Tunnel. In 1992 the Government announced its approval of Railfreight Distribution plans to buy fleets of 450 intermodal and 550 fully enclosed car carrying wagons for Channel Tunnel services. In addition a network of eight intermodal terminals at Mossend (Glasgow), Wilton (Teeside), Wakefield (West Yorkshire), Trafford Park (Manchester), Seaforth (Liverpool), Bescot or Hams Hall (Birmingham), Cardiff, Willesden and Stratford (both London) is being planned. This network will be served by three freight operating centres at Wembley (London), Doncaster and Crewe.

C.FREIGHT MARKET

1.Pricing

BRB's freight market is dominated by a small number of major customers. Individually negotiated contracts are therefore the norm.

2.Services

The bulk of BRB's freight is moved in trainload services. TrainLoad Freight carried 123.1m tonnes (7,553m tonne miles) in 1990/91 compared to Railfreight Distributions 15.1m tonnes (2,380m tonne miles). In 1990/91 total freight train miles operated was 29.8m and for parcels was 7.2m. Wagonload services continue to be unprofitable; in 1991 BRB withdrew its Speedlink services (although managed to retain 70% of traffic) and is continually restructuring its Freightliner services. Two quarry companies (Foster-Yeomans and ARC) own their own locomotives but these are operated on their behalf by BRB.

3.Competition

In 1990 rail was estimated as having an 8% share of the United Kingdom freight market (measured in tonne kms) compared to road 62%, water 25% and pipeline 5%. Rail's share varies by commodity category; it has a 54% share of the Solid Mineral Fuels market and a 33% shares of the Ores and Metal Waste market but a near zero share of the Manufactured goods market. The dominance of four bulk products can be seen from Table 3.4.

Table 3.4: BR Freight Traffic by Commodity

	1980	1990
Coal and Coke	94.1	74.9
Steel and Metals	13.0*	18.4
Construction	15.9	21.9
Petroleum	13.7	10.1
SUB TOTAL - 4 main Commodities	136.7	125.3
SUB TOTAL - Other	16.8	15.8
TOTAL	153.5	141.1

* Affected by industrial action

In 1990, these four bulk commodities (coal, steel, construction materials and petroleum) accounted for 89% of tonnes lifted.

Road haulage was deregulated in 1968 and this, along with the motorway building programme has led to intense competition, virtually wiping out rail's presence in the general merchandise market. Coastal shipping and pipeline are particularly effective competitors in the petroleum market.

D.PASSENGER MARKET

1.Pricing

BRB has near total pricing freedom, prices vary by route, by time of day, day of week and week of the year as well as by distance. Most services offer both First Class and Standard services. InterCity services operate a series of discounted Saver-fares, including an airline style book in advance APEX fare. Cheap day returns and season tickets are available on most routes. Price discrimination is enhanced by a series of Railcards entitling holders to reduced fares; these are available for Senior Citizens, Students and Young Persons, members of the Armed Services and Families.

2.Services

Services are mainly distinguished by business sector, although both Network SouthEast and Regional railways operate some Express services. In 1990, the breakdown of passenger kms was Network SouthEast 15.3b (45%), InterCity 13.1b (38%) and Regional Railways 5.7b (17%). In a recent development, a private bus company, Stagecoach, is providing and marketing two carriages on the overnight Aberdeen to London service. Some BRB urban services have been transferred to other operators, most recently the Manchester Metrolink.

3.Competition

In 1990 rail had a 6% share of the UK passenger market (in terms of passenger km) compared to cars and taxis 85%, bus 6%, pedal-cycle, motor-cycle and air (1% each). Rail has a higher share in certain market segments, in particular the central London commuter market. In 1990 rail's share in this market was estimated to be 76% compared to car 14%, bus 8% and pedal/motor-cycle 2%. However, rail's share was split 55:45 between Network SouthEast

services and London Underground Services. Rail also has relatively high shares of medium distance travel between conurbation centres and the capital (eg Leeds to London).

BRB's main competition comes from the car, which has been encouraged by the road building programme and generous tax-allowances for company motoring. Express coaches were deregulated as a result of the 1980 Transport Act and this led to intense competition with rail. This competition has stabilised in terms of service but periodic price wars do still occur. Local buses were deregulated as a result of the 1985 Transport Act but, except in isolated cases, have had little effect on rail services. Domestic airline services were liberalized during the 1980s and have been particularly successful in the long haul business market (eg London - Scotland).

Figure 3.1 BRB Organisational Structure 1982 to 1992 (Matrix Management)

Source: Allen, D and Wiliams, G. (1985) in Button, K. and Pitfield, D. (Eds) "International Railway Economics". Gower, Aldershot, p90.

Figure 3.2: British Railway Industry Organisational Structure Before and After the 1992 White Paper (Simplified)

Figure 3.3: Past Investment in British Rail

Source: Brown, C. (1992). "The British Rail View". In Institution of Civil Engineers, Rail Privatisation, Deregulation and Open Access", p29.

4.DENMARK - Danske Statsbaner (DSB)

A.OBJECTIVES AND MANAGEMENT

1.Ownership and Organisation

DSB is operated as a government agency, with the Director-General directly responsible to the Minister of Transport under arrangements established by the 1969 Act on the Administration of DSB which was last revised in 1989. DSB's accounts are part of the Ministry of Transport's accounts in the National Budget. A Railway Advisory Board, consisting of politicians, trade unions and industrialists gives advice to the Ministry of Transport and the Finance Committee.

DSB's activities are divided into divisions according to product. There are several subsidiaries. An organisational chart is given by Figure 4.1.

2.Objectives and Constraints

DSB's objectives are determined by four year agreements with Government (the current agreement covers the period 1990-93) in which Government predetermines budget support and investment levels and DSB outlines rationalisation programmes, personnel reductions and revenue increases. Line closures require an Act of Parliament. From March 1990, DSB can change and differentiate its tariffs without the permission of Parliament's Finance Committee as long as the average price increase does not exceed the average increase in DSB's costs. Preparations are in hand for EC directives; infrastructure and operations accounts are being separated, whilst the bus, ferry and travel agency divisions are being established as separate businesses. DSB also operates commuter services in Copenhagen.

3.Subsidiary Activities

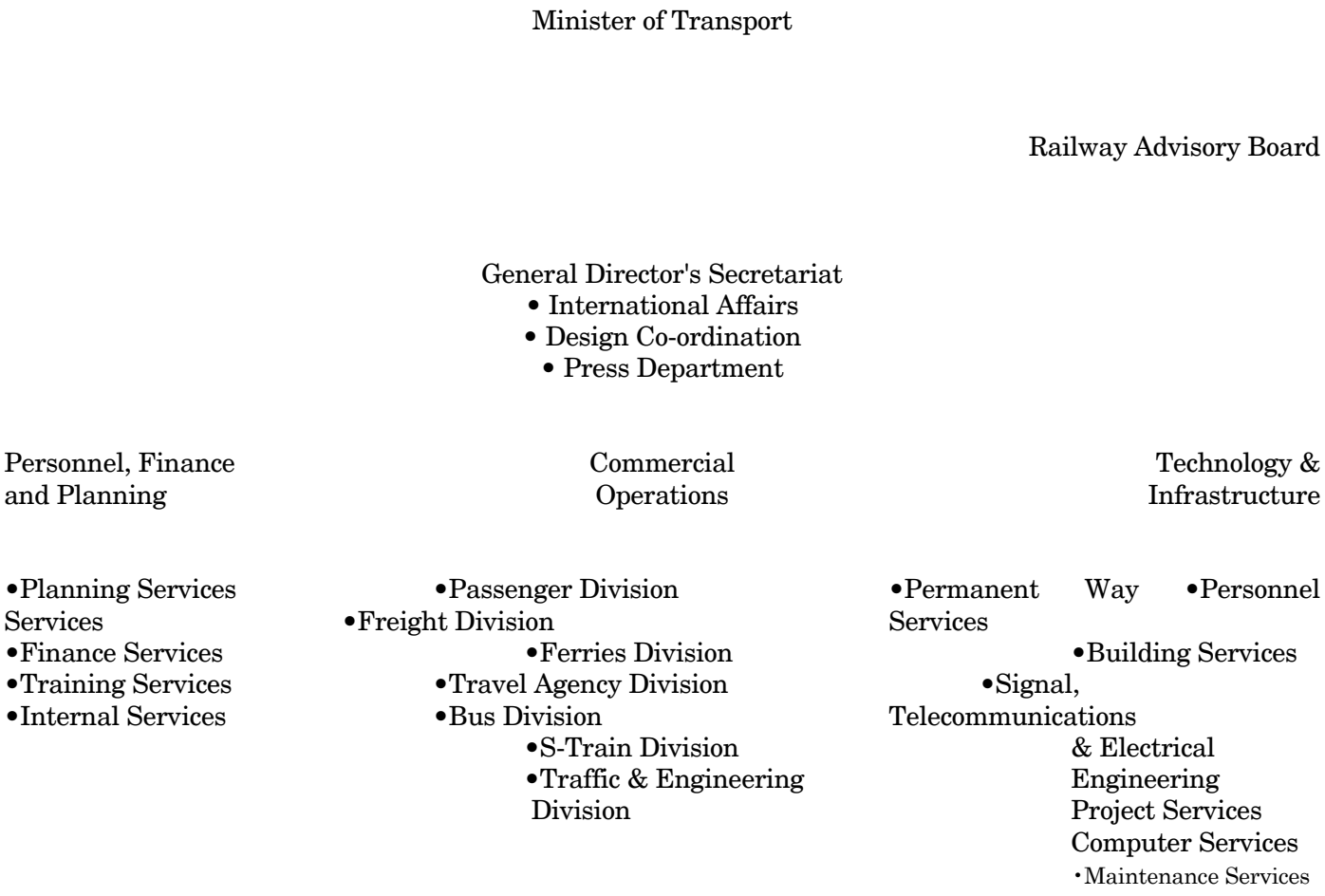
DSB has three substantial non-rail business:

1.Ferry Division. DSB operates 10 ferry crossings served by 28 ships. Three of the routes are combined train and car crossings, two are train-only crossings and five are for cars and passengers. In 1990, the Ferry Division had earnings of DKK 1167m and 2700 employees.

2.Bus Division. DSB operates as a contractor for county and intermunicipal corporations competing on an equal footing with private contractors. DSB accounts for about 25% of traffic outside Greater Copenhagen. DSB's current contracts are from 1989 and have a term of 5 years. The Bus Division has 580 buses and 1530 employees.

3.Travel Agency Division. This business has 22 outlets, 360 staff and a turnover of DKK 1,000m. DSB has entered into collaboration with a privately owned agency, Maersk Travel, with joint offices in Esbjerg and Billund.

Figure 4.1DSB Organisational Chart



Catering activities on trains and ferries and at stations are taken care of by three privately owned public limited companies (DSB Tog Service A/S, DSB Faergerestaunter A/S and DSB Restuaranter og Kiosker A/S respectively), which hold concessions from DSB. Another concessionaire (Trans Media A/S) handles all advertising activities on DSB property. Altogether these companies employ 3300 and have a turn-over of DKK 2.5b. DSB's income from these activities amounted to DKK 380m.

B.FINANCE

1.Government Support

The rail budget is approved in advance at a global level; subsequent adjustments require parliamentary approval. Operating losses in 1990 were DKK 1041m (1989 1022m), excluding depreciation and interest payments, but this included an extraordinary item of 115m for the transfer of S-trains from HT to DSB. If this is taken into account and corrections made for inflation, the 1990 result was the best for 11 years.

A cash grant is made by the State to DSB to maintain a nationwide traffic system that provides customers in all parts of the country with a suitable level of service and frequencies at a reasonable price. For 1990 the cash grant included in the Annual Appropriations was DKK 2758m but following negotiations this was increased by 283m.

2.Investment

DSB's gross investments in 1990 amounted to DKK 2,862m (1607m 1989), broken down as follows:

(i)Replacement of fixed assets - 15%

(ii)New fixed assets - 23% (including electrification Copenhagen-Odense, establishment of ATC and a new line between Snøghøg and Taulov in Jutland)).

(iii)Rail rolling stock - 42% (including new IC3 train sets, 17 electric IR4 sets and 12 electro-locomotives).

(iv)Ferries and ships - 7% (including the building of a ferry and a ferry terminal for the Elsinore-Helsingborg crossing).

(v)Road vehicles - 3%

(vi)S-Trains - 7% (including renovation of train sets)

(vii)Other - 2%

Net investments in 1990 amounted to DKK 2691m, DSB having sold property and land for DKK 97m and received investment reimbursements of 74m.

Future investment schemes include:

(i)The Storbelt link. This combined road and rail link involves a bored rail tunnel and

road bridge between Zealand and Sprogø and a road/rail bridge between Sprogø and Funen. The rail service is now planned to operate by mid 1996, with the road link being completed some two to three years later.

The railway technical installations were designed and built by DSB at a cost of DKK 1.4b. The scheme has been financed by a free standing company, 100% owned by the Ministry of Transport, raising capital on the open market. These loans are expected to be serviced by user charges, with those for rail expected to be DKK 900m p.a. According to forecasts up to 12 to 14 million people will be crossing the Great Belt (Størbelt) by train p.a., compared to the 1990 figure of 4.5m. Freight volumes are expected to increase.

(ii)The Oresund link. In 1991 Acts were passed in Sweden and Denmark authorising the establishment of a tunnel and high level bridge fixed link. The cost of the connection is estimated to be DKK 12b and the Danish on-shore installations at approx. DKK 2.5b. A rail link to Copenhagen airport (at Kastrup) might be included at a cost of DKK 2b. It is proposed the same financial arrangements as to the Størbelt will apply. User charges for rail freight alone will amount to DKK 150m p.a.

(iii)Femer Belt. Studies and investigations are being carried out in collaboration with the Deutsche Bundesbahn concerning a fixed link between Rødby and Puttgarden. However, it will be the turn of the century before such a link can be established.

(iv)High Speed Services. In 1993 services between Copenhagen and Aarhus will be increased from 150 km/hr to 180 km/hr, with an eventual increase of up to 200 km/hr possible. Investment of DKK 4.3b will be made on tracks, signalling, level crossings and IC3 rolling stock. Automatic Train Control (ATC) will account for DKK 700m.

(v)Electrification. By the end of 1992, the rail network from Elsinore to Odense will be electrified at a cost of DKK 1.7 trillion.

(vi)Rolling Stock. A rolling stock replacement programme is underway at a cost of DKK 3.2b. This programme includes 85 diesel Inter City IC3 train sets, 17 electrical regional IR4 train sets and 12 electrical multiple units. S-train rolling stock is being renovated but consideration is also being made of wide bodied trains.

(vii)Remote Control. In May 1990 a new control centre was inaugurated at Copenhagen, covering the area between Klampenborg and Roskilde. Four systems are integrated in one location: remote control of driving current, remote control of signalling equipment, automatic train number system and electronic public announcement system. The remote control system will be continued across Zealand via the Størbelt to Fredericia.

As part of the four year political agreement, DSB must sell land and buildings at a value of DKK 690m. DSB owns around 5,500 properties and a number of major projects are planned but none have yet been realized due to the general fall-off in the property market.

C.FREIGHT MARKET

1.Services

Rail services concentrate on container and unit load traffic at ten main depots, with mega-terminals being developed at Taulov, in Jutland, and Høje Taastrup, near Copenhagen. Parcels are handled by eleven terminals. International traffic accounts for 69% of tons lifted, 64% of ton-kms and 41% of freight revenue (1990 figures).

2.Pricing

Railway rates are published, but most traffic is subject to discounts. Tariffs are based on weight and distance, but wagonload traffic is also distinguished by commodity.

3.Competition

Rail carried 8 million tons in 1990 (1787m ton-kms). Although road transport is licensed, entry is relatively free.

D.PASSENGER MARKET

1.Services

Services are split between Inter-City (including international services), Regional and S-Trains. The Inter City and Regional network consists of 2174 route km and 205 stations. Copenhagen's S-train network consists of 170 route km and 79 stations. Inter City frequencies are generally hourly, S-trains operate every 10 minutes in the peak, 20 minutes off-peak. Regional frequencies vary. The Inter City and Regional network carried 54m passengers (3.6b passenger-km)in 1990; the S-train network carried 97m passengers (1.3b passenger-km). 13 private passenger railways exist, carrying 11m passengers and 200m pass-km in 1990. Market shares within the rail market are therefore:

	Passengers	Passenger-kms
Regional/InterCity	33%	71%
S-train	60%	25%
Private	7%	4%

2.Pricing

There is a fixed price per km up to a certain distance, after which a taper applies. An exception is Copenhagen where a zonal fare system operates. Reductions apply to season tickets and old-age pensioners.

3.Competition

Inter City services face competition on three long distance express bus routes (two established in 1983) and from three air companies (SAS, Maerskair and Cimber). Expansion of the long distance express bus network has been blocked by regulation as has development of DSB bus services to act as contractors in the Greater Copenhagen area.

The Størbelt fixed link is thought to enable rail to capture most non-interlining air traffic but will increase car competition.

5.FRANCE - Societe Nationale de Chemin de Fer (SNCF)

A.OBJECTIVES and MANAGEMENT

1.Ownership and Organisation

SNCF was founded as a public service enterprise, initally as a 50 year franchise, in 1937 following the merger and nationalisation of the six companies operating the French rail network at the time. This role was reconfirmed when the official SNCF remit was renewed on 30 December 1982. This confirmed SNCF as an `epic' organisation (establissment publique industrielle et commercialle), a public company that must, after subsidy, cover costs. Three sets of documents are particularly relevant to SNCF:

(i)Loi d'orientation des transports interieurs (LOTI)
(ii)Cahiers des Charges and
(iii)Contrat du Plan

Management is rested in the Council of Administration which consists of members of Government and of SNCF. The President of SNCF must be a member of Government and it is this, combined with the strong government representation on the Council of Administration which ensures the close link between Government and SNCF policy.

Management remains centralised but there has been some decentralisation of responsibility to the 23 Regions in that responsibility for regional passenger services has been devolved. Recent organisational changes have concentrated on re-structuring central activities and introducing business sectors. The current organisational structure is given by Figure 6.1.

2.Objectives and Controls

The financial relationship between SNCF is stipulated in five yearly Contrat du Plan, with the current plan covering the period 1990-1994 for national services. A separate Contrat du Plan between SNCF and the Ile de France region for the period 1989-1993 covers services in the Paris conurbation. These plans:

(i)Authorise SNCF to proceed with both service development and investment plans.
(ii)Undertake that Government will provide or ensure the necessary grant aid and investment support for the period and
(iii)Commit SNCF to achieve the objectives of the Business Plan, indicating service quality targets.

Investment for the current national plan is estimated at FF 100b (compared with 70b 1985-89). In turn the French government has agreed to make available the necessary funds, through direct provision or support for access to capital markets. This support is aimed to provide annually (at 1990 prices) about

-FF 2bfor revenue support for fare levels
-FF 3.5bfor revenue support for regional services
-FF 14bfor SNCF pension funds
-FF 10bfor infrastructure investment support

The plan stipulates that an overall minimum of 34% of all investment should be self financed, with the remainder supplied by local and central government. Specific projects may be as little as 20% self financed as long as the annual average is not below 34%. SNCF is authorised to borrow on the international financial markets.

SNCF prices are tightly controlled by Government, as the Council of Administration determines published tariffs and rates (Cahiers des Charges). The Ministry of Transport has powers to delay proposed closures, especially in the Paris region, but after a fixed time period (usually six months) must pay subsidy. Regions may specify services, provided they also finance them under arrangements set up by LOTI.

3.Subsidiary Activity

Through its SCETA group holding SNCF is involved in some 247 subsidiary companies divided into 8 groups:
•Combined Transport
•Specialist Transport
•Zusti Ambrosetti Group
•Road Transport
•Tourism and Passengers
•Finance
•Location
•Diverse
In addition, SNCF has three groups of direct subsidiaries; housing, ferries and a variety of other businesses, including for example a 12% share in Air Inter, a domestic airline company. Total turnover of subsidiaries in 1990 was FF 19b, approximately 20% of total turnover.

B.FINANCE

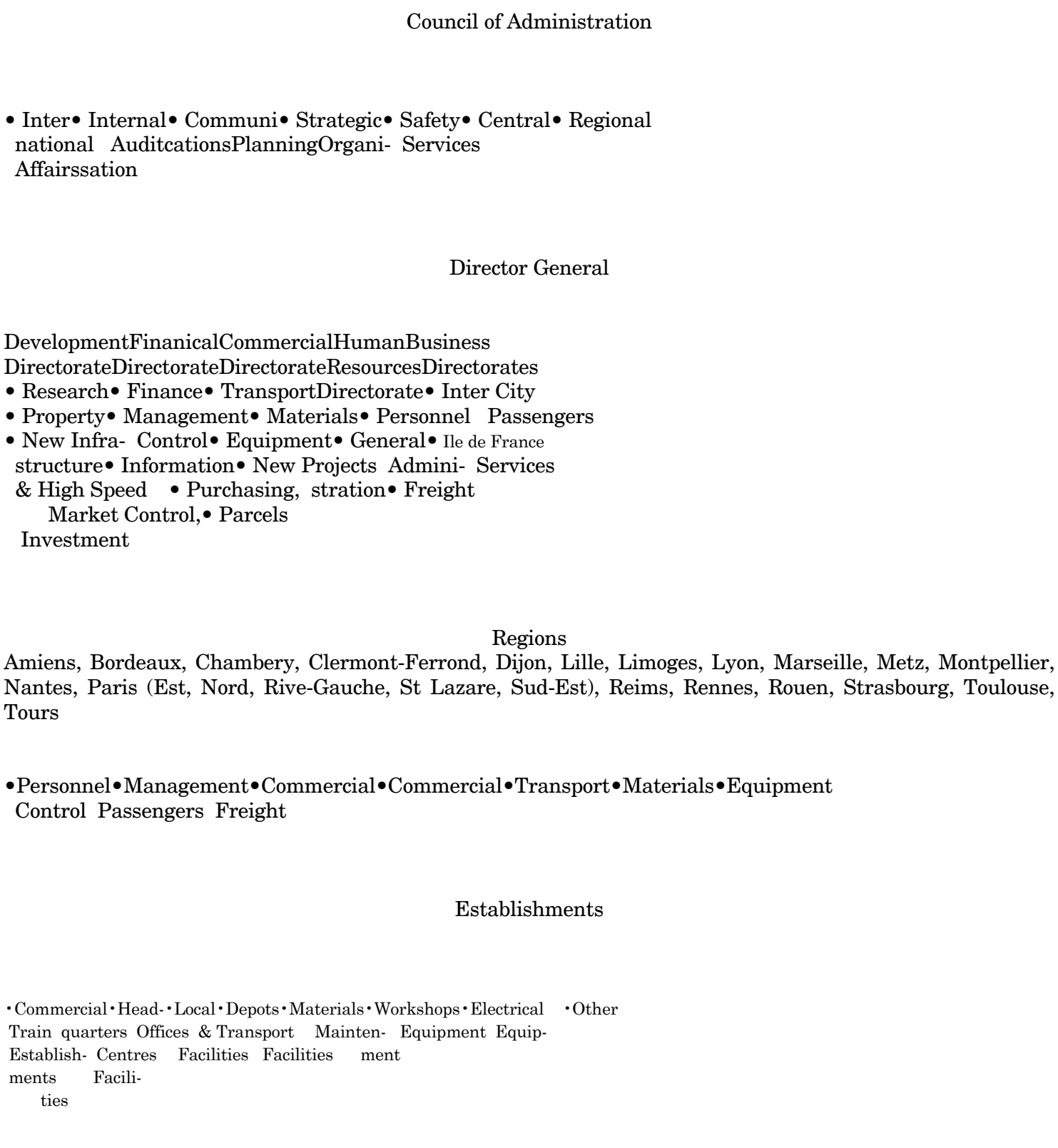
1.Government Support

The budget, including Government support (`versements contractuels de l'Etat et des Collectives Publiques') is determined annually, but can be revised if required. Government support excluding pension contributions, in 1990 stood at FF 15,379b, approximately 16% of total group turnover. Surpluses (earned in the years 1988 to 1990) are carried to a special reserve fund. Deficits (expected for 1991) are firstly charged to the special reserve, then carried forward to be serviced by loan finance.

2.Investment

Investment reached FF 17b in 1990 of which 51% was on the principal network, 39% was on new lines and 10% was on the Parisian network. Around 14% of investment

Figure 6.1: Organisational Chart for SNCF



was on rolling stock. The main element of the investment plan is for a major high speed network approved by the National Transport Council, the Regional Councils and the Regional Transport Councils under LOTI legislation. The Master Plan includes 4,700 km of new lines (including the 500 km already in service and the 560 km under construction) but the network of TGV services will total 11,000 km in all if account is also taken of existing lines, upgraded to different degrees for higher speeds. The proposals are as follows: (see Figure 6.2)

(i)Two lines are in operation TGV Sud-Est (Paris - Lyons) and TGV Atlantique (Paris - Tours/Le Mans)
(ii)Three lines are under construction: TGV Nord (Paris - Channel Tunnel), extending TGV Sud-Est to Valence and Eastern interconnection around Paris.
(iii)Sixteen TGV schemes have been proposed:
-Aquitaine(Tours - Bordeaux - Langon/Dax)
-Auvergne(Paris - Clermont-Ferrand)
-Brittany(Le Mans - Rennes)
-Est(Paris - Strasbourg)
-Southern Interconnection
-Alpine(Lyons - Montmelian - Turin)
-Limousin(Paris - Limoges)
-Provence(Valence - Marseilles)
-Riviera(Aix-en-Provence - Frijus-St Raphael)
-Languedoc-Rousillon(Avignon - Perpignon - Barcelona)
-Midi Pyrenees(Bordeaux - Toulouse)
-Normandy(Paris - Rouen/Caen)
-Loire(Le Mans - Angers)
-Picardy(Compiegne - Channel Tunnel)
-Rhine-Rhone(Dijon - Mulhouse)

Overall, the various projects covered by the Master Plan represent an investment of FF 180b for infrastructure and 30b for TGV trainsets. Table 6.1 shows the main features of the different projects in terms of financial and socio-economic rate of return is calculated from a combination of the financial benefits for the SNCF, the value of time saved by passengers and the general benefits of reductions in congestion and in accidents on the roads.

C.FREIGHT MARKET

1.Services

Freight services are divided between combined transport (14% of tonne-km moved in 1990), `train entiers' (47%) and other (wagonload or groupage) traffic. The breakdown of traffic by product type is given by Table 6.2. The two most important commodity groups are metals and ores (16% of ton-kms in 1990) and foodstuffs (also 16%).

Parcels are handled through a special subsidiary SERNAM (Service National des Messagereies de la SNCF).

Figure 6.2: Map of TGV Proposals

Table 6.1: Evaluation of TGV Lines

The 16 projects selected (of which first possible phases)	km of new line	Traffic in millions off passengers			return on investment (1)	
		before	after		financial	socio -economic
AQUATAINE	480	14,7	20,1	5,4	7,5	10
of which Tours-Bordeaux	361	(14,7)	(19,7)	(5,0)	9,5	12,3
AUVERGNE	130	2,9	3,9	1,0	3,1	6,7
BRITTANY	156	9,1	12,2	3,1	7,4	13,6
EAST	460	8,4	14,5	6,1	4,3	8,8
"GRAND SUD"	70	3,7	5,3	1,6	5	12
SOUTHERN INTERCONNECTION	49	12,6	13,4	0,8	8,2	9,6
ALPINE LINK	251	11,4	19,1	7,7	5	10
of which Avignon-Montemelian	107	(8,2)	(11,8)	(3,6)	8,5	14,7
LIMOUSIN	174	3,3	4,0	0,7	2,4	4,4
PROVENCE	219	16,6	20,9	4,3	9,8	13
RIVIERA (COTE D'AZUR)	132	5,1	7,8	2,7	8,4	11
LANGUEDOC-ROUSSILLION	290	5,8	9,5	3,7	6,1	9
of which Avignon-Montpellier	75	(5,8)	(7,1)	(1,3)	7,8	10,5
MIDI-PYRENEES	184	2,3	3,3	1	5,5	6,5
NORMANDY	169	5,5	7,1	1,6	0,1	3
LOIRE	78	7,5	8,4	0,9	5,4	7,7
PICARDY	165	13,5	14,4	0,9	4,8	5
RHINE-RHONE	425	9,5	15,3	5,8	5,9	10,7
of which Mulhouse-Dole	190	(9,6)	(13,8)	(4,2)	8,4	13,9

(1)These values have been obtained from initial calculations and will have to be corrected once the final layout has been decided.

Table 6.2: SNCF Freight Products (b tonne-km)

	1988	1989	1990
Combined Transport	7.17	7.43	7.29
Metallurgy Products	6.38	6.57	6.40
Cereals, Animal Fodder	5.60	5.64	5.53
Construction Materials	5.55	5.61	5.33
Chemical Products	4.01	4.02	3.86
Petroleum Products	3.34	3.44	3.53
Beverages	3.31	3.42	3.60
Fertilizers	2.94	2.96	3.62
Solid Fuels	2.34	2.49	2.11
Vehicles	2.14	2.22	2.10
Minerals/Ores	1.62	1.77	1.67
Timber	1.32	1.29	1.33
Grocery Products	1.06	1.06	1.99
Perishable Commodities	0.90	0.72	0.49
Paper	0.86	0.93	0.92
Other Products	2.13	2.00	1.87
TOTAL	50.67	51.57	50.64

2.Pricing

SNCF is constrained by an obligation to carry and publish rates but since 1971 has been free to offer discounts for competitive reasons or to enter into contractual arrangements for bulk or regular traffics. Over 95% of traffic is moved at such special rates.

3.Competition

SNCF had a 32% share of the freight market in 1990, compared to road, 60% (exclusive of short haul traffic), waterways 5% and pipelines 4%. Obligatory tariffs for road haulage were removed in 1990 whilst licensing restrictions have been relaxed. As a result, competition from road is intensifying and rail is losing market share.

D.PASSENGER MARKET

1.Services

Passenger services consists of four groups:

(i)TGV services-14.92 b pass/km in 1990
(ii)InterCity services-33.24 b pass/km
(iii)Ile de France services-8.99 b pass/km
(iv)Services Regionaux-6.80 b pass/km

This tends to understate the importance of Paris services. 842m passengers used SNCF services in 1990, of these 530m (63%) used Ile de France services.

2.Pricing

The basic passenger fare structure consists of a boarding charge plus mileage charge, with supplements on express and TGV services. These supplements vary by route, time of day, day of week and season. This allows price discrimination and the development of revenue yield techniques. Abonnements (season tickets) are an important option and there are reduced fares for school children, students, pensioners and families. Maximum tariffs are fixed by Government.

3.Competition

Bus and Coaches are regulated and perform a complementary rather than competitive role. Domestic airline competition has increased in terms of price but the main competition has been the car which has been aided by a large autoroute development plan and harmonisation of VAT which has lowered purchasing costs.

6. ITALY - Ente Ferrovie Dello Stato (FS)

A.OBJECTIVES AND MANAGEMENT

1.Ownership and Organisation

FS is formally an independent company, through which the State runs the national network. In practice, it is controlled by the Minister of Transport who has wide ranging responsibilities. In arriving at his decisions the Minister consults the Board of Directors ("Amministratore Straordinairo"), of which he is Chairman, and is composed of the Civil Service, FS employees, members of the judiciary and FS customers. Members of the Board are appointed by decrees of the President of the Republic on the proposal of the Minister, except representatives of FS staff who are elected by the staff themselves. Board members remain in office for three years and can be re-appointed. The Board is sub-composed into an Advisory Board, a Legal Committee and a Management Committee, whilst members also sit on the Committee that revises the accounts.

FS is managed by a Director General who, while adhering to the directives of the Minister, is responsible for the direction and supervision of the whole network. A major internal re-organisation was enacted in 1990 in an attempt to commercialise the organisation and stimulate efficiency. Central functions are divided into ten departments to support nine

operating divisions that are managed by 15 regional divisions ("Compartimenti"). The organisation chart is given by Figure 8.1. The key division is the Business division which co-ordinates the activities of all other divisions.

Figure 8.1: Organisational Chart for FS

Amministratore Straordinario

Director General

Central Functions	Operating Divisions	Compartimenti		Safety
•Administration & Control	•Business	•Ancona	•Roma	
	•Freight	•Bori	•Torino	
•Finance	•Passengers	•Bologna	•Trieste	
•Organisation	•Local Transport (Buses)	•Cagliari	•Venezio	
•Quality	•Property	•Firenze	•Verona	
•External Relations	•Information	•Genova		
•Industrial Relations	•Navigation (Ferries)	•Milano		
•Legal Affairs	•Construction	•Napoli		
•Strategy	•Technology &	•Palermo		
•Internal Studies	System Development	•Reggio Cal		
•Training School				

2.Objectives and Control

FS is entrusted with the management of the railway network nationwide. Regional railways, covering around 4,000 route kms (FS covers around 16,000 route kms), are run by private companies under the supervision of ministerial authority. The largest regional railways are Ferrovie del Sud-Est and Ferrovie Nord Milano Esercizio.

Fares are fixed by the State; restructuring and increases of a generalised nature are approved by Ministerial decree. The FS capital budget is part of the Central Government budgetary process. FS investment plans are approved by law. Level of service is politically determined; there have been few withdrawals of passenger services but there has been some rationalisation of freight services. Remuneration of FS personnel is also fixed by law.

3.Subsidiary Activities

FS has two main non-rail activities. It runs bus services which are closely integrated into the rail network and appear on rail timetables and it operates a fleet of train ferries to Sicily and Sardinia. These activities are financed and priced in the same way as the railways.

FS is permitted to take an interest in enterprises engaged in the growth and provision of rail services and the development of complementary services. Wholly owned subsidiaries include:

(i)INT (Istituto Nazionale Trasporti) which provides freight collection and delivery services

(ii)CIT (Compagnia Italiana Turismo)
(iii)BNC (Banca Nazionale delle Communicazioni)
(iv)ITAL PER, a railway development institute.

Partially owned subsidiaries include Sigma, a telematics company, Eurofima, a finance house, the Straits of Messina fixed link development company, nine "interporti" (road/rail interchanges), two freight companies (INTER CONTAINER and INTERFRIGO), as have many rail companies and the Banco Nazionale del Lavaro.

B.FINANCE

1.Government Support

The FS budget must be approved by Parliament as part of the Ministry of Transport's budget. In accordance with EC regulations receipts are received from the Treasury for public service obligations, infrastructure grants, concessionary fares and repayment of capital contributions. The residual deficit is covered by grants from the Treasury to which, in principle, any surplus would go. Table 8.1 shows that FS is heavily reliant on government support; in 1990 revenue only covered 31% of operating costs (defined so as not to include capital costs), despite re-classification of the accountancy system.

Table 8.1: Reclassified FS Accounts, 1990, 1991 (milliardi lire)

	1990	1991
Operating Revenue	4031.48	4320.46
Operating Costs	12544.62	13574.47
- Labour Costs	10254.46	10739.08
- Materials and Services	2519.16	2835.39
Operating Result	-8513.14	-9254.01
State Intervention		
- Public Service Obligation	4300.00	4300.00
- Infrastructure Grant	2360.00	1500.00
- Concessionary Fares	730.00	730.00
- Internal Capital Costs	334.00	375.22
Revised Operating Result	-789.14	-2348.79
Depreciation	0.0	0.0
Property Receipts	55.41	307.31
Pension Obligations	872.00	700.20
Interest	133.43	85.58
Tax Obligations	143.34	132.07
Business Result	-1882.50	-2959.51
Losses covered by		
Equilibrating Subsidy	658.40	438.80
Residual Deficit	1224.10	2520.71

2.Investment

As FS is an integral part of the Ministry of Transport, its investment funding comes

through the annual Government budgetary procedures. As a result investment plans may be subject to unpredictable cuts. By 1990, the cumulative investment plan stood at 49,535 milliardi L, of which 54% had been paid for, 12% had contracts awarded and 10% had Government approval (the remaining 22% had not yet received approval). Between 1989 to 1990 actual investment increased by 3,323 milliardi L. The main scheme is to develop a T-shaped high speed network Nuova Rete ad Alta Velocita) between Milan-Florence-Rome-Naples and Turin-Milan-Venice. Development is to be by a separate company TAV (Treno Alta Velocita) in which FS will have a 40% stake, with the remainder held by banks and insurance companies. A further high speed line is being considered to link with the Swiss Transalpine proposals (Linee di Valico) whilst major track upgrades are in progress on four key sections (Genoa-Ventimiglia, Pescara-Foggia, Bologna-Padua and Rome-Pescara) and seventeen major schemes are on the books.

C.FREIGHT MARKET

1.Services

FS has been attempting to develop full train load and container traffic as well as multi-modal transport. 43% of tonne-km in 1990 were domestic based, 39% were for imports and 18% were for exports. 20% of tonne/km were accounted for by containers and 5% by combined traffic. Postal services are an important revenue source, accounting for 5% of FS' revenue in 1990, compared to freight's 34%.

2.Pricing

There is a general obligation to carry at the published tariffs (which were established by law in 1940) but there is legislation (dating back to 1970) which allows the Minister to grant discounts on the total level of traffic consigned by one customer. Freight tariffs are distinguished in three ways: by length of haul, size of consignment and type of goods.

Table 8.2: Indices of Freight Tariffs 1990 (FS = 100)

	CECA Products	Non-CECA Products
Switzerland - CFF		216.0
Austria - OBB		150.2
Holland - NS	195.5	188.0
Belgium - SNCB	167.5	186.0
Luxemburg - CFL	311.0	150.0
Germany - DB	148.6	164.0
France - SNCF	118.4	204.2

Source: FS Annual Report and Accounts 1990

Table 8.2 shows that as a result of Government intervention FS has some of the lowest freight tariffs in western Europe.

3.Competition

In 1990 rail was estimated to have a 12% share of the goods market compared to road 63%, sea 19% and pipeline 5% (for distances above 50km). Although hire and reward road haulage is controlled by a quota system, this is ineffective as own-account operations are not restricted. Road haulage rates are controlled only for scheduled (linea) operations which constitute a very small part of the sector. For the rest, free market rates prevail.

D.PASSENGER MARKET

1.Services

A distinction is made between main line services (linee commerciali), regional services (linee integrative) and local services (linee locali), whilst further distinctions are made on the basis of speed (rapido, espresso, diretto, locale).

The network on which services are provided is determined by law, though the level of service is set by FS. FS requests the closure of low traffic lines each year but these requests are usually rejected and compensation has to be awarded.

2.Pricing

The basic structure of fares was determined by a law of 1935, with there being three broad tariffs; ordinary, concessionary and commuter (pendolare). Fares have failed to keep up with inflation and a low fare level exists (see Table 8.3).
Commuter fares are even lower.

Table 8.3: Indices of Rail Fares(Ordinary tariff for 100km journey)

	1st Class	2nd Class
Austria-OBB	21.3	14.2
Holland-NS	23.8	15.9
Belgium-SNB	16.6	11.1
Luxemburg-CFL	18.5	12.4
Switzerland-CFF	34.8	21.4
Germany-DB	23.8	15.9
France-SNCF	19.8	13.2
Italy-FS	10.8	6.3

Source: FS Annual Report and Accounts 1990

3.Competition

FS and other railways accounted for 12% of the passenger market in 1990 compared to road 86% and air 2%. Road-based passenger transport is regulated and heavily subsidised but domestic airlines are allowed some pricing freedom in order to compensate for their lack of subsidy.

7.NETHERLANDS - Nederlandse Spoorwegen (NS)

A. OBJECTIVES and MANAGEMENT

1. Ownership and Organisation

NS is a public corporation wholly owned by the state. It was reorganised in 1988 into Headquarters, Business Units for freight and passenger sectors and Service Units for operating, rolling stock and infrastructure. Each business unit has a contract with each service unit for the provision of services. These contracts are in essence very simple. For instance, the rolling stock unit is required to supply vehicles at a charge (in 1990 prices) of 120000 NLG per coach per annum. For infrastructure the price is 100000 per km per annum and for operation 2.9 per train km, 0.94 per coach km (mainly to cover fuel) and 0.016 per passenger km (mainly to cover ticketing and inspection). The latter figures are based on 30% of kilometres being in the peak, a higher figure would be paid if this changed substantially. All these figures reduce by 2% per annum in real terms; if units better this, they are allowed to retain the surplus and plough it back into additional investment, enhanced salaries etc.

The Wijffels Commission, which reported on 5/6/92, recommended further changes to establish a more arms-length relationship between NS and the government. Under this, the government would take over responsibility for the infrastructure and NS would have complete commercial freedom regarding operations. Initially support would be paid for the operation of passenger services, but it was suggested that in the long run this might be phased out. NS would then be permitted to borrow from the private market without government control or guarantee.

2. Objectives and Controls

Under the latest contract between NS and the government, NS is promised a constant real level of support. Minimum service frequencies are stipulated, but in fact NS currently far exceeds these. Maximum passenger fares are also set. In freight traffic, NS has complete commercial freedom, although currently some subsidy is paid.

However, the real objective comes from the growing concern with the congestion and environmental problems from the growth of road traffic. In 1988, NS put forward a plan (RAIL 21) to contribute towards solution of these by doubling its passenger carryings by the year 2005 with no increase in subsidy (ie. a 100% increase in traffic for a 50% increase in real costs, or a 25% cut in cost per passenger kilometre). In October, 1988, this plan was accepted by the government, as part of a package of measures (including inter-urban road pricing) designed to achieve a cut in the growth of car traffic to 5% per annum. So far NS has achieved a 40% growth in passenger traffic. However, the failure by the government to implement effective measures to restrain the car is making it difficult for NS to achieve its targeted growth; it can only go on increasing traffic by holding fares down.

A similar plan for a vast increase in freight traffic (RAIL 21 CARGO), dependent on providing a new freight route between Rotterdam and Germany, and the major development of international inter-modal services, was submitted late in 1990. The new freight route has now been approved.

3. Subsidiary Activity

NS no longer owns subsidiary companies in road transport; its subsidiaries are now closely aligned with its main business - eg. a travel agency, telecommunications, containers.

B. FINANCE

1. Government Support

In 1990, NS received 1394m NLG in support for passenger services and 29m in support for freight, a total of 41% of turnover (for passenger services, support amounts to around 50% of income). As commented above, currently a constant real level of support is promised by the state.

2. Investment

Up until 1988, investment in NS was running at around 700m NLG per annum. The plan to double rail traffic by the year 2005 requires a vast increase in investment to the level of some 2500m per annum. This breaks down as follows:

Rolling stock		replacement		300
		expansion		400
Infrastructure	existing lines	renewals	400	
		expansion		200
	new lines	passenger		800
		freight	400	

Regarding infrastructure the main intercity network will be expanded from 2 to 4 tracks to enable a frequent pattern of inter city, interregional and stopping services to be accommodated. In terms of rolling stock, the fleet will be expanded from 2250 passenger carrying vehicles in 1988 to 3375 in 2000/2005. Since by then half of the fleet will comprise double deck vehicles this will increase the number of seats by 90%, and - with a small increase in vehicle utilisation, will suffice to carry twice the traffic volume with no increase in standing. The plan is then to achieve a doubling of passenger kilometres with an increase in track kilometres of 15%, an increase in rolling stock of 50%, an increase in train kilometres of 25% and consequently an increase in passengers per train of 60%.

The current position is that new infrastructure is financed by the government, but NS has to finance replacement of assets and all rolling stock. It has access to the private capital market, with government permission and government guarantee; as commented above, the Wijffells Commission recommends that both the government guarantee and the need for government permission be removed as part of a further reorganisation. Private financing of new high speed and freight lines on the basis of risk capital has been considered, but is very problematic, these lines are not very profitable, being at the extremities of the European network, and involve mainly international traffic, where cooperation with other railways is essential.

C. FREIGHT MARKET

1. Services

In 1990, NS carried 18.4m tonnes of freight, of which 13.4m was international.

By method of operation, freight traffic in tonnes breaks down as follows:

	DOMESTIC	INTERNATIONAL	TOTAL
Trainload	1.7	6.7	8.4
Wagonload	1.2	3.6	4.8
Combined transport	1.3	3.1	4.4
Other	0.8	0	0.8
Total	5.0	13.4	18.4

2. Pricing

NS has complete commercial freedom in pricing freight traffic. Although it publishes a tariff, it carries most of its freight at a discount on specially negotiated tariffs.

3. Competition

NS has a small share of the domestic market, as a result of short distances and the wide availability of water transport for bulk commodities. NS also argues that neither water nor truck transport pays its infrastructure costs.

D. PASSENGER MARKET

1. Services

Passenger services operate mainly on a regular interval basis, and are marketed as Inter City (Including Eurocity international trains), Inter regional and stopping services. However, in reality the three are intimately intertwined both in terms of operations and traffic; thus for instance much commuting takes place on inter regional and inter city trains.

2. Pricing

Pricing is based on mileage, with supplements for international trains. There is a growing pattern of off-peak discount fares and of season tickets, including a national card giving unlimited travel for students.

3. Competition

Buses and coaches are regulated and perform a complementary role, generally connecting with rail services. The principal competition is seen as being the private car.

8.NORWAY - Norges Statsbaner (NSB)

A.OBJECTIVES AND MANAGEMENT

1.Ownership and Organisation

The NSB Board is appointed by the Government and is responsible to the Ministry of Communications. It comprises the Director General and six part-time members representing the major interest groups. The delineation of boundaries of the fields of responsibility of NSB and the Ministry of Communications are to be revised under the Government Enterprise Act (Statsforetaksloven), with a trend towards greater managerial autonomy. NSB accounts are part of the National Accounts but there is a move towards preparing commercial accounts (to be fully operational in 1993).

Internally, NSB is organised at three levels. Headquarter functions are divided between seven directors. There are also seven operational divisions: passenger services, freight services, road transport, travel agencies, property, rolling stock and production and (since January 1991) permanent way. Passenger services are further subdivided into two sub-divisions (short/medium distance and long distance) whilst freight services are split into sixteen units, on a geographic basis. Overall, NSB is moving towards becoming a free standing public enterprise.

2.Objectives and Constraints

NSB's Railway Plans, approved by Parliament, form part of the National Transport Plan. The plan for the period 1994-1997 is awaiting approval. Particular concerns are reducing transport costs and improving the environment.

Passenger fares, maximum freight charges, passenger service levels and investment budgets all require Government approval. Fare increases have tended to be below inflation. Fares are based on distance; this can lead to anomalies. The construction of the Drammen tunnel reduced the distance to Oslo and hence fares had to be reduced even though service quality had been improved and there was scope for pricing up. Freight rates are based on volume rather than weight or value and can result in under-charging.

The objective of passenger services is a break-even outcome. By contrast, freight services are operated on a commercial basis with an aim of breaking even by 1994. There has been abandonments of passenger services in the 1980s, whilst more recently some freight services have been withdrawn (e.g. the Hardanger line).

3.Subsidiary Activities

NSB Biltraffikk is the largest bus operator in the country. Buses are operated as separate regional companies and receive direct county subsidy on a kilometre basis. NSB operates three subsidiaries in the freight market, Linjegoods A/S (the parcels carrier - 40% state owned), Transportinvest A/S and KombiFrakt. The latter operation which provided a freightliner type service was wound-up in 1991 although some services were taken over by a consortium of Swedish freight operators. NSB also has a 41% share in Narvesen A/S, the catering and bookstall organisation and train catering franchise.

B.FINANCE

1.Government Support

Although Government contributions are determined in advance at the global level, a balanced budget principle is adhered to: in practice any surplus/shortfall is absorbed by adjustments to Government contributions. The special fares policy (including travelcards) that effects NSB's suburban services in Oslo (Lokaltrafikk) receives local government support. In 1990 receipts from the passenger and freight railway businesses were NOK 3,813m compared to expenditure of 4,584m. Figure 10.1 shows that Central Government support for NSB has increased approximately threefold during the 1980s (and it should be noted that these figures have not been adjusted for inflation).

Figure 10.1: Costs and Revenue of NSB's Rail Activities

Source: Norges Offisielle Statistikk (1992) "Transport and Communication Statistics 1990"

p39.

2.Investment

Passenger investments are funded 100% by Government loans. Specific investments for freight services and subsidiaries are based on borrowings from Government at specified interest rates. However, at the end of 1991, application of commercial principles meant that NSB was re-defined as being wholly financed by loans with the debt to Government being estimated at NOK 3.5 billion. By the end of the 1990s interest costs on new loans alone will be around NOK 100 million. A re-financing package is being considered. Recent trends in capital investment in the railways are shown in Table 10.1.

Table 10.1: Capital Investment in State Railways. Million kroner

Year	1987	1988	1989	1990	1991
Expenditure	1108	1146	1205	803	1116 (Planned) 1237 (Outturn)*

Scource:Transport and Communications Statistics, 1990, p64 except * NSB Annual Report and Accounts, 1991.

Around 45% of expenditure in 1991 was on Permanent Way with the main investment items being:

(i)Doubling of track between Ski and Moss (1991-1995)
(ii)The Finse tunnel (1991-1993),

whilst the next major investment will be:

(iii)The Oslo Airport (Gardermoen) link (1992-1999)

Capital expenditure in the Traffic Sector is concentrated on fleet renewal, with a major upgrading of the Oslo-Lillehammer service being undertaken by 1993, whilst there are plans to replace the type 68 electric multiple units.

Since 1990 property development has made a small contribution to the railways finances, raising NOK 41 million in 1990 and 67 million in 1991. The NSB's former head offices at Storgaten were sold to property group Investa (but the sale will not figure in the accounts until 1992) and the Railway School premises at Blindernveien were sold to the University of Oslo.

Particular concern lies in the fact that NSB investment is lagging behind that of its Nordic neighbours, who are estimated to be investing NOK 100 billion in the next 10-15 years, whereas the upper investment level for NSB is estimated to be 25 billion (see Annexe 1). Main priorities are reducing the age of the locomotive fleet and upgrading track, particularly along the Bergen-Oslo-Goteborg axis.

C.FREIGHT MARKET

1.Services

The major trainload flow is the 5,000 tonne ore trains from Kiruna to Narvik, accounting

for 63% of tonnes carried but only 6% of net tonne km in 1990. Inland wagonload traffic accounts for around 31% of tonnes carried and 89% of tonne-km. Foreign traffic makes up the balance. In 1990 the main wagonload traffics were (based on tonnes carried - excluding special transactions):

Crude minerals other than ore:30%
Miscellaneous manufactured items24%
Wood and cork23%

The main origins and destinations for wagonload traffic are (based on tonnes carried):

Origins:Destinations:
Nordland - 28%Nordland -29%
Telemark -13%Telemark - 12%
Hedmark -12%Buskerud -9%
Abroad -8%Abroad -8%
Oslo -7%Oslo -5%

2.Price

Although maximum rates are published, over 90% of traffic is subject to specially negotiated discounts. Pricing policy is based on contribution maximisation, subject to covering variable costs.

3.Competition

In 1990 the mode split (based on tonne-km) was coastal shipping 48%, road 43% and rail 9%. This compares to the figures of 60%, 29% and 11% reported in the late 1970's. The growth of road-based goods transport relates to deregulation in the mid 1980's which led to fierce competition but mainly abstracted traffic from coastal shipping. Competition has now quietened down. It should be noted that scheduled local services by sea are often provided and subsidised by local authorities.

D.PASSENGER MARKET

1.Services

Rail services are classed as Day trains (Dagtog) and Night trains (Nattog) and between InterCity, Regional, Local (Naertrafikktog) and Suburban (Localtog). A number of small branch lines in Southern Norway were closed in the 1980s (eg. Kragero, Flekkefjord) and replaced by bus services, but others survived (eg Arendal, Notodden).

2.Pricing

Fares are based on a standard charge per km (see above), tapering by distance. Around 22% of passengers (16% of revenue) used monthly and half monthly season tickets in 1990, whilst reduced ordinary ticket fares are available for pensioners, students, families and members of the armed services.

3.Competition

Around 79% of passenger km in Norway were made by car, with 11% made by bus, 5% made by plane, 4% by train and 1% by boat in 1990. By contrast, in 1980 the

corresponding percentages were 76%, 12%, 3%, 6% and 2% respectively. In the 1980s there has been some relaxation of the licensing system for express coach services, whilst all road-based forms of transport have benefitted from a large scale road building programme. Air is a serious contender for business traffic with there being one publicly owned national company (SAS), one privately owned (Braathen) and a series of regional operators. Services remain licenced but as the market has grown the burden of cross subsidy on the main trunk routes has reduced.

Rail journeys are relatively short, with 47.5% being under 30km, representing the dominance of Oslo based commuting. This is also borne out by an analysis of origins and destinations (based on passengers in 1990):

	Origin	Destination
Oslo	22%	22%
Hordaland	14%	14%
Buskerud	12%	12%
Ostfold	10%	10%
Rogaland	8%	8%

Oslo and its adjacent counties (Buskerund, Vestold, Ostfold, Akerhus and Oppland) accounts for 58% of travel. The main city in Hordaland is Bergen and the main city in Rogaland is Stavanger.

9.SWEDEN-Banverket (BV) -Statens Järnvägar (SJ)

A.OBJECTIVES AND MANAGEMENT

1.Ownership and Organisation

Swedish railways were dominantly under state control by 1939, although a distinction was maintained between the national and the regional networks. The national network operated without subsidy until 1979. Despite being one of the most cost-effective operators in Europe a crisis of confidence emerged by the mid 1980s due to falling market shares, rising deficits (and forecasts of worse to come) and unclear/inconsistent objectives. The solution was the 1988 Transportation Act which proposed a "road model" for the railway sector. The main features were:

(i)The rail network was divided into a trunk system of main arteries and county lines.
(ii)Rail infrastructure became the responsibility of a new state administration, Banverket (BV).
(iii)Statens Järnvägar (SJ) became a train operator and marketing organisation keeping ownership of terminals, freight wagons, passenger cars and locomotives.
(iv)SJ would maintain a monopoly of passenger services on trunk lines and freight services on trunk and county lines (excluding the Iron Ore line).
(v)The 24 county public transport authorities would decide the level of passenger service to be operated on county lines and were free to choose other contractors for the local and regional passenger services.
(vi)If SJ or the County did not wish to exploit their transportation rights, BV was given the right to grant other interested operators the equivalent rights and responsibilities.

(vii)Infrastructure charges would be paid by train operators on the basis of marginal social cost. This would be consistent with the pricing regime employed by the Roads Authority.
(viii)The state would provide for a substantial improvement of the major network.

A study is being undertaken (to report in January 1993) that will examine measures to increase competition on the rail network and, in particular, the removal of SJ's monopoly by January 1995.

BV has a board of 10 members, including the Director General, appointed by Government. BV is highly decentralised, being split into five regions and 21 districts (see Figure 12.1). In addition, there is an Industrial Division having commercial responsibility for purchasing, production and storage of material. Within BV, there is an independent Railway Inspectorate responsible for safety check and accident investigations.

SJ has a board of 13 members, including the Director General and representative members of Government, business and trade unions. Its organisation has moved from a regional basis to a product basis with four main divisions: passenger, freight, mechanical and real-estate. The company's organisational chart is given by Figure 12.2.

2.Objectives and Constraints

Responsibilities are divided between BV and SJ as follows:

BV is responsible for:

-Railway lines; substructure, superstructure and track, signals and other safety installations, overhead electric equipment.
-Terminals; all through tracks, certain storage tracks and sidings, passenger platforms, lighting and some major marshalling yards.
-Fixed installations for traffic supervision and safety.

SJ is responsible for:

-Locomotives, wagons and coaches.
-Terminal buildings and stations, including surrounding public services.
-Goods terminals (except for major marshalling yards and combined road/rail transfer terminals.
-Industry tracks.
-Workshops for rolling stock.

The boundaries are not always clear cut; particular concerns include timetable planning (currently done by SJ), traffic control (operated by SJ, infrastructure owned by BV) and telecommunications. The problem with the latter is one of joint use; the same cables can carry ordinary telephone connections (mainly SJ use), data transmission (SJ for ticketing, BV for safety installations), passenger information (SJ) and signalling information (BV). It was decided to have exchange installations and interconnecting cables assigned to the infrastructure (BV) while cables and facilities to portable equipment for direct use were taken by the user (SJ or BV). The right to exploit new cable capacity installations (e.g. glassfibre optics) along the tracks was included in the infrastructure.

Figure 12.1 BV's Organisational Chart

Figure 12.2 SJ's Organisational Chart

BV is responsible directly under the Swedish Government (Ministry of Transport) for the overall planning of the national railway network and the correct and efficient realization of the railway development plans established by the state. As a government agency it must plan for a neutral treatment of different transport companies. BV's goals are to ensure that rail travel is safe and efficient and to act in the most beneficial way for society as a whole.

By contrast, SJ is to act as a business company and turn deficit to a fair profit to cover costs for improved terminals and rolling stock. SJ is free to raise capital on the open market but cannot create new subsidiaries without Government permission. Some Government control regarding maximum tariffs and closure procedures remain.

3.Subsidiary Activity

SJ operates a number of subsidiary companies as part of the parent company Swedcarrier AB. These include:

(i)ASG AB concerned with the transportation, forwarding and warehousing of goods. SJ holds 45% of the capital stock of the company which (in 1990) had 5,171 employees and a turnover of SEK 7,312m.

(ii)Swedbusgruppen AB operates bus services under its own auspices and in collaboration with the County Traffic Authorities. It has 4,779 employees and a turnover of SEK 4,779m.

(iii)AB Svelast is a road haulage business with 700 vehicles providing feeder services to railway freight traffic. It has 814 employees and an annual turnover of SEK 378m.

(iv)AB Trafikrestuaranger provides on-board and off-board catering facilities. It owns 81 restaurant cars and four conference cars. It employs 1,551 and has a turnover SEK 654m.

(v)SFL AB operates SJ's ferry businesses under the name SweFerry AB. It operates five routes to Germany and Denmark with 14 ships. It employs 574 and has a turnover of SEK 979M.

(vi)TGOJ AB operates some freight and passenger traffic by rail together with a workshop operation for railbourne rolling stock. It employs 301 and has a turnover of SEK 155m. During 1991, SJ's maintenance workshops were brought under the management of TGOJ.

(vii)SJ Invest AB is administered by SJ's financial sector and handles certain internal financial services for the group.

(viii)SwedeRail Consulting AB operates as a consultancy, marketing SJ and BV's combined competence internationally and to major railway projects.

Some subsidiaries have been privatised, such as SJ Travel Agencies. SJ also has a 50% holding in Combitrans Sweden AB (which markets international wagon-load traffic) and Nordwaggon AB (a "private" wagon company.) SJ also jointly owns with ABB Traction AGEVE Maintenance AB, responsible for heavy maintenance of freight wagons. This subsidiary was restructured in 1991 with activities concentrated in Gothenburg and Gävle. Since July 1992, SJ has a 100% holding of Rail Combi AB, which is responsible for

marketing and production of national and international combined transport.

All subsidiaries are intended to be (and are) profitable, although bus services are responsible for a share of the SEK 3554m paid in 1990 by the County Traffic Authorities and the Swedish Board of Transport for bus and rail services. (The Swedish Board of Transport has subsequently been abolished). In order to concentrate on profitable activities Swebusgruppen has pulled out of the tourist and private hire markets but has moved into the taxi market. Overall, subsidiaries account for 59% of the SJ Group's revenue.

B.FINANCE

1.Government Support

SJ is expected to be profit making, once subsidies for passenger services (outlined above) and for certain freight services are taken into account. In 1990 the SJ Group earned profits of SEK 681m, of which the rail businesses accounted for 372m. The results for the rail business were forecast to be a profit of SEK 200m. This target was exceeded but still falls short of the SEK 600m p.a. profit SJ believes is necessary to support forthcoming investments in locomotives, coaches, freight cars, stations, workshops and personnel premises. In 1990 SJ made a payment to BV of up to SEK 665m based on a two-part tariff designed to reflect marginal social costs (or, as a proxy, short run variable social costs).

Aside from infrastructure fees, BV is funded by an annual appropriation from central government which has increased as follows (SEK, M):

19883275
19894035
19904300
19915250
19926500

These increases are due to increased investment (see below).

2.Investment

BV investment levels have increased from SEK 600m in 1988/89 to 2500m in 1991/2 and are expected to be at 3000-4000 per year for the rest of the century. In addition, expenditure of around 2000m will be made on maintenance per annum (see Figure 12.3). Around 18% of investment is currently financed by non-Government loans. Investments form part of a ten year plan (1991-2000) to upgrade the railway and includes the following projects:

(i)West Main line upgrading (1986-1992) at an initial cost of SEK 425m to allow operation of the high speed X2000 service between Stockholm and Gothenburg. A further 500m is to be spent replacing level crossings with road tunnels or bridges.

(ii)Grödinge line (1989-1995) a new 30km line south of Stockholm, allowing faster InterCity trains to Gothenburg and Malmö and commuter services on the Svealand line. The total budget is around SEK 3000m, of which two-thirds will be contracted out.

(iii)South Main line upgrading (1991-1996) to allow operation of X2000 trains between

Stockholm and Malmö, reducing journey times from 6 hours 15 minutes to 4 hours 30 minutes (down 28%). The cost of this project is estimated at SEK 2000m.

(iv)Hallandsas tunnel (1992-1996) and associated improvements on the West Coast line. The tunnel and 15km of double track has been costed at SEK 1000m whilst other improvements have included:

-Double tracking Gothenburg-Kungsbacka (25km at a cost of SEK 400m). One third of costs were covered by Local Government.
-Double tracking and re-alignment Varberg-Falkenberg (20km at a cost of 300m).
-Remodelling of Helsingborg station at a cost of 500m.
-Complete double track between Gothenburg and Malmö would require a further 3000m and would be only possible with Local Government support.

(v)The North link to Oslo.
Improvements to this service involve the option of a westerly alignment (partially using the run-down Bohus line) or an easterly alignment (partially using the existing Gothenburg-Oslo line). BV favour the easterly alignment and have costed a scheme at SEK 9500 which, using X2000 technology, could reduce journey times from 4 hours 30 minutes to 2 hours (down 55%).

(vi)Rail connection to Stockholm airport (Arlanda) (1991-1996). This scheme involves quadrupling the existing double track between Stockholm and Roserberg and then providing new double track to the terminal, rejoining the main line at Odensala. Some 120km of new tracks would be provided at a cost of SEK 3500m, whilst an additional 1500m would be required for the terminal buildings.

In most instances, the rail services are not expected to contribute to the capital costs of the schemes. An exception is the Arlanda scheme. It is proposed that this service will be franchised in such a way that a significant share of the investment costs can be captured ex-post. BV and the Airport authority will specify train type, minimum frequencies and service quality. The franchisee will be able to specify fares and check-in and baggage handling arrangements which will be evaluated as part of the bid. Guarantees for SJ to operate on the new line will be included but SJ will have to pay a fee per passenger using the Arlanda terminal to the franchisee. This, it is hoped, will maximise the share which does not need state funding.

A similar concept is envisaged for the proposed Öresund fixed link between Sweden and Denmark. Although tolls on motorists will pay for the bulk of construction costs, on the Swedish side, rail access to the fixed connection will cost SEK 1500m. It is believed that a share of this could be covered by charges to prospective train operators.

The other alternative source of investment funds is that of Local Government. In addition to the one-third funding in the Gothenburg region, two-thirds funding from Local Authorities is available in the Stockholm region, and up to one-quarter funding has been secured for the Lake Mälar schemes. Funding for part of this last scheme is on the condition that a major share of construction is carried out by local private contractors.

BV assesses investments using social cost-benefit analysis in the same way as the Roads Authority. The Study Alternative is compared with a Comparison Alternative, usually a do-nothing scenario. Sufficient funds appear to be available for the projects listed above and extensions of the X2000 network and 200km/hr operations as follows:

(i)Stockholm-Eskilstuna/Västerås-Örebro known as the Lake Mälar scheme (1991-1998).
(ii)Stockholm-Arlanda-Uppsala-Gävle (by 1994).
(iii) Uppsala-Borlange-Falun (by 1995).
(iv)Laxå-Karlstad (by 1996).
(v)Gävle-Sundsvall.

More problematic appear to be:

(vi)The Bothnia line connection Sundsvall-Umeå.
(vii)The Götaland line which would involve new track between Linköping-Jönköping-Borås to provide a second high speed link to Gothenburg.

A more important budget constraint for BV is emerging with respect to maintenance work. Figure 12.3 shows that maintenance costs are increasing at a rate greater than inflation which is leading to budgetary control problems.

In 1990 the SJ Group's total investments were SEK 2040m (1989 1485m), whilst SJ's investments were 880m (866m). This capital was mainly spent on vehicles and fixed assets, with a fleet of 20 X2000 units ordered. Investments are self-financed with a number of sources of private finance:

(i)Capital was raised by ASG AB being given a stock exchange listing in 1990. AB Transportförvaltning was a major investor.
(ii)SJ signed a so-called partnership finance deal in 1990, selling buildings in Stockholm and Solna to a consortium led by Svenskt Fastighetskapital AB for SEK 1800m. Following the sale SJ is leasing the premises back with rent and option price re-distributed over time so as to give an acceptable pay-back on capital. The re-distribution of interest also entails positive effects on SJ's income statement, since the annual market rental cost is less than the yield on the capital released. The sale resulted in a capital gain of 1.755m. SJ has an option to repurchase these properties after 15 years and once every five years until 2015.
(iii)The Real-Estates division raised SEK 225m in 1990 and promotes external renting out of premises and leasing out of land areas.

C.FREIGHT MARKET

1.Services

The main block train-load flow is iron-ore (43% of tons carried, 17% of ton-kms), with domestic wagon load being the other main traffic source (40% of tons carried, 49% of ton-kms). Foreign wagon-load traffic and a small amount of parcels traffic (Expressgods) make up the balance. The main traffic groups by product type are: (% of tons carried):

Ores and Metal Waste Products:46%
Manufactured Products:18%
Agricultural Products (including timber):13%
Metal Products:11%
Chemicals:6%

98.7% of ton-kilometres are operated by SJ, its subsidiaries (TGOJ) and its agents (other

Figure 12.3

national railways). There are, though, some private operations including Nordmark Klarälvens Järnvägar (NKJ) and the recently formed Österlentåg which has a foothold in the market in the Tomelilla area.

2.Pricing

Rates are based on direct costs plus what the market will bear, subject to a maximum. Over 90% of traffic is subject to confidential specially negotiated rates.

3.Competition

For hauls of over 100km, rail had, in 1990, a 28% market share, compared to coastal shipping and roads 30% each and inland waterways 12%. Road freight transport has been deregulated since 1963. SJ's road based freight services have been re-organised so as to be complementary to rail services rather than competing with them, as occurred in the past.

D.PASSENGER MARKET

1.Services

As noted above a distinction is made between national (main line) services, generally operated on hourly or two hourly regular interval timetables, and regional (county line) services, where timetables are broadly specified by the County Passenger Transport Boards. The inland line (Mora-Gällivare) is treated as a special case. There have been few recent cases of service withdrawls; of 24 county line services recently reviewed only 3 were discontinued for a "trial period".

2.Pricing

Fares maintain a relation to distance but include a taper and reductions for travel in non-peak periods (any day except Friday and Sunday). 40% reductions are available for students, pensioners and families.

3.Competition

Long haul trips (over 100km) accounted for over 70% of passenger kms on SJ's rail services in 1990. It was estimated that of trips over 100km, rail has a 13% share compared to car 74%, air 11% and bus 2%.

Tendering has allowed competition within the rail market. Four firms other than SJ have registered to receive tender documents, with one company, BK Tåg, being successful and another company, Linjetåg, having a number of "near misses". The competitive pressure has led to SJ reducing tender prices by 20-30%. Local services operated on the main line in the Stockholm, Malmö, Gothenburg and Västerås areas have been contracted out, although in these cases SJ is the only permissible bidder. These contracts tend to be of long duration (up to 20 years), whilst the competitive tenders are of much shorter duration (typically 3 years).

Local bus services were deregulated in 1989 and SJ faces stiff competition, particularly from Linjebuss and Waseatraeik. Express buses remain partially regulated but competing services do exist. Air services were deregulated in 1992 and SAS's monopoly ended. A number of new entrants have emerged (Malmö Aviation, TransSweden) and fares have fallen by up to 25%, on average.

10. SWITZERLANDChemins de fer féderaux Suisses (CFF) a.k.a.Schweizerische Bundesbahnen (SBB) a.k.a.Ferrovie federali Suizzere (FSS)

A.OBJECTIVES AND MANAGEMENT

1.Ownership and Organisation

CFF was created in 1902 through the merger and nationalisation of several privately owned railway companies. CFF is a semi-autonomous public corporation. It has 17 board members (Conseil d'Administration) consisting of politicians, industrialists and trade unionists to which the Directors report to. CFF's internal organisation is based on a matrix of functions, regions and products and is outlined by Figure 13.1.

Figure 13.1:CFF Organisational Chart

Board
(Conseil d'Administrations)

Directors
(Direction générale)

Corporate Functions (Département de la Présidence)		Transport Functions	Infrastructure Functions
•General Secretariat •Finance •Personnel •Information •Organisation •Planning	•Arrondissement I Laussane •Arrondissement II Lucerne •Arrondissement III Zurich	•Passengers •Freight •Operations •Traction & Workshops	•Works •Property •Electricity generators •Purchasing & supplies

2.Objectives and Constraints

CFF's objectives are set by the 1987 Service Mandate which will operate until a co-ordinated transport policy comes into force or until 1994, whichever is the earliest date. A distinction (first made in 1982) is made between commercial and social sectors. The commercial sector covers long distance passenger traffic, wagonload and sundries traffic. CFF were given full commercial freedom in these sectors. The social sector covers regional passenger transport and, for a limited start-up period, piggyback traffic. Social services are only provided by CFF if ordered by the service mandate and corresponding compensationis offered. Government accepts the financial responsibility for infrastructure. CFF have to pay a contribution towards these expenses, earned by the

commercial sector. This contribution is fixed in advance by Government. Should CFF not be able to earn the contribution towards infrastructure costs, they have to show the deficit in their balance sheet and carry it forward to the new account, if they cannot cover it by reserves from previous years. The level of contributions was fixed annually in 1987 and 1988 and for three year periods from 1990 onwards. In defining infrastructure, the main problem area was that of power generation. CFF maintains financial responsibility for power plants, frequency converters and power transmission lines to sub-stations but Government has responsibility for sub stations and power lines from sub-stations. Government also has responsibility for all administrative buildings, houses, warehouses and commercial facilities (station restaurants etc).

It should be noted that the Government has assumed the financial, but not the physical, responsibility for CFF structure. The main change is an accountancy one with a corporate profit and loss account and an infrastructure profit and loss account being produced. The latter, for 1989 and 1990, is shown by Table 13.1. It can be seen that infrastructure charges only cover a small percentage of costs (11% in 1989, 3% in 1990).

Table 13.1: Infrastructure Profit and Loss Account (SFr Mio)

	1989	1990
Expenditure	949.9	1089.5
Depreciation	281.2	289.1
Interest Charges	197.5	269.7
Maintenance	394.8	444.6
Other	76.4	86.1
Revenue	949.9	1089.5
CFF Contribution	102.0	37.0
Government Contribution	847.9	1052.5

Although Government has financial responsibility, CFF continues responsibility for infrastructure design. Government's influence is restricted to a review and approval of the investment budget for submission to parliament. The 1987 Service Mandate does provide for the Government to approve the long-term planning of CFF and to check, in particular, its agreement with the over riding objectives of the Confederation; to judge the medium term-corporate and investment plans derived from the long term planning; and to review the annual budget.

CFF is free to set fares at commercial levels for Inter City and Direct services in order to cover operating costs. Fares on Regional services are determined by Local Government (i.e. the 25 Cantons). Rail services may be withdrawn if they are not covering operating costs and Government support is not forthcoming, although bus substitution will normally be required. There is a trend towards decentralising the transport budget from the Federal government to the Canton governments, whilst for regional services tendering is being considered.

B.FINANCE

1.Government Support

In addition to Government support for infrastructure, Government supported regional and piggy-back services to the tune of SFr 550m in 1990 (523m in 1989). Given total expenditure of 5364m in 1990 (4975m in 1989), Government covers around 31% of costs (30% in 1989).

2.Investment

CFF's gross investments in 1990 were SFr 1932m (1631m in 1989). Net investment, given property sales and grants, was SFr 1775m (1509m in 1989). Investment has been planned in the Rail and Bus 2000 programme, which was supported by a plebisate held in December 1987. This programmed has the following elements:

(i)Improve passenger services by increasing frequency of Inter City and Express services from hourly to half hourly, reducing journey times on key O-D pairs (e.g. Berne-Zurich) to under an hour and co-ordinating services with Regional bus and train services, so as to reduce interchange. It is hoped that public journey times will be reduced by up to 48%. This will require 120km of new lines (equivalent to 2.4% of existing rail tracks) in four main schemes, 26 track improvement schemes and modernisation of layout at nine key stations.

(ii)Improve passenger services by introducing new rolling stock. For long distance services orders in 1990 included 24 Rolling Stock Locomotives, 60 EWIV coaches and 70 Eurocity coaches, whilst for regional services this included 84 Kolibiri trains, 120 S-bahn locomotives and 390 double decker coaches. The piggyback transit corridor (see below) will require an additional 90 engines. Total orders for Rail 2000 are expected to be 340 engines and 1700 coaches.

(iii)Improve freight services by developing a network for liner trains running at regular intervals and two Transalpine Piggyback Corridors. This will require two new tunnels

(a)the Gotthard base tunnel (49km) to be completed by 2010
(b)the Lötschberg base tunnel (28km)

as well as a new Golthard transalpine service between Arth-Goldau and Altdorf. piggyback services will be capable of carrying 40 tonne lorries, semi-trailers and swap bodies.

In developing piggyback services, CFF has formed a partnership with Hupac AG. They plan, organise and sell the piggyback services of the railways. Hupac operate the terminals and manage around 800 purpose-built wagons. By 1994, it is expected that Hupac will require 1000 additional wagons.

C.FREIGHT MARKET

1.Services

CFF transports freight as part-loads (Cargo Domicile), wagon loads and block trains (Cargo Rail) and containers and combined transport (Cargo Combi). These services are offered for inland, import, export and transit traffic. In 1990 tonnes lifted were as follows (million):

Cargo Rail	41.4	80%
of which Inland Traffic	18.1	35%
Export	2.1	4%
Import	11.3	22%
Transit	9.9	19%
Cargo Combi	8.9	17%
of which Piggy Back 4.7	9%	
Containers	4.2	8%
Cargo Domicile	0.9	2%
Postal	0.6	1%
TOTAL	51.8	

2.Competition

In 1988 rail had a 40% market share (based on tonne km) of freight movements compared to 54% for road and 6% for pipelines. Despite a gross weight limit of 28 tonnes and bans on lorry use at night and on Sundays, road transport has grown rapidly, particularly for domestic traffic (for example, in 1970 road had a 38% market share compared to rail's 53%). However, rail is important for international traffic. Of Transalpine traffic through Switzerland, in 1987, 64% went by rail, 29% by pipeline and only 6% by road. However, Transalpine traffic via Switzerland has not increased at the same rate as elsewhere. In 1987, Switzerland only accounted for 22% of land based movements, compared to Austria 40% and France 37%. This is due to the less stringent regulations concerning road-based transport in these two countries.

D.PASSENGER MARKET

1.Services

Passenger services are divided into three main groups; Inter City (approximately 19% of train kms in 1990), Direct or Express (29% of train miles) and Regional (52% of train kms). Regional services include S-bahn services in the main cities and, in Zurich, an RER style service.

2.Competition

In 1988 rail had a 12% share of passenger traffic (in passenger-km) compared to car 83%, bus 4% and air 1%. There are around 60 so-called private railways, although in most cases the local Canton is the largest share-holder and they are heavily subsidised. The largest of these "private" companies is the Berne-Lotschberg-Simplon (BLS) railway. Both bus and domestic air services are regulated on a concession basis. Concessions are unlikely to be granted for services competing with train services.

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