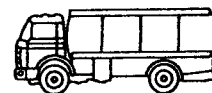


EUROPEAN COMMUNITIES

# EUROPA TRANSPORT



OBSERVATION OF TRANSPORT MARKETS

## ANNUAL REPORT 1988

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ANNUAL REPORT

INTRODUCTORY NOTE

The Introduction of the Single Administrative (Customs) Document on 1st January 1988 has, indirectly, lead to considerable delays in the preparation of the 1988 Annual Report. These delays are due to the fact that, for road transport, "miscellaneous" sources have previously been used for the most recent year in the Annual Report so as to avoid waiting for the Road Statistics Directive data (usually about 15 months after the end of the reference period). With the arrival of the Single Administrative Document the "miscellaneous" sources previously used were themselves either delayed or disappeared. It was thus necessary to wait for the 1988 Directive data (April 1990) before this report could be finalised.

It is planned to complete the manuscript of the 1989 Annual Report at the usual date, i.e. late 1990.



## PRESENTATION OF THE 1988 ANNUAL REPORT

The "Europa Transport" publications present a substantial part of the statistical information on the international Intra-Community transport of goods collected under the "Market Observation System".

Three reports are published :

- Analysis and Forecasts
- Annual Report
- Market Developments

The contents of the following "Annual Report 1988" are as follows :

Chapter 1 : General Market Assessment - All 3 Modes

Chapter 2 : Road

- 2.1. Development of International Intra EUR-12 transport by nationality of vehicle, 1986-1988, in t-km
- 2.2. International Intra EUR-12 matrices, 1986-1988, in t-km
- 2.3. National transport, 1986-1988, in t-km
- 2.4. Total Intra EUR-12 transport, 1986-1988, in t-km
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## CHAPTER 1

### GENERAL MARKET ASSESSMENT - ALL 3 MODES

#### 1.1. Economic background

After several years of steady economic growth with gdp growing at about 2.5% per annum, Community gdp growth accelerated to 3.8% in 1988 ; it is estimated to have been 3.4% in 1989 and is forecast to be 3.1% in 1990.

Correspondingly there has been a similar pattern of growth of industrial production with growth of just over 2% in 1986 and 1987 followed by 4.3% in 1988.

#### 1.2. Development of Intra-Community transport, 1986-1988, t-km

The development of total Intra-Community transport, national + international, is best shown in tonne-kilometres (t-km). Table 1.1 shows this development from 1986 to 1988. The increase of 7.2% in t-km for the total of all 3 modes in 1988 was quite exceptional and is linked to the high growth of gdp and industrial production. The increase for road haulage (8.6%) was even higher than the previous year, but rail (up 0.8%) and inland waterways (up 6.2%) reversed the declines of the previous year ; consequently the shift in the modal split towards road slowed slightly in 1988.

Table 1.1. Total Intra-Eur-12 t-km.(x 10.<sup>9</sup>)

	Road	Rail	Inland Waterways	Total 3 modes
1986	651	147.6	92.1	891
1987	696	146.1	89.2	931
1988 (prov.)	756	147.3	94.7	998

#### Annual growth rates

1986-1987	+6.9%	-1.0%	-3.1%	+4.5%
1987-1988	+8.6%	+0.8%	+6.2%	+7.2%

#### Modal Split

1986	73.1	16.6	10.3	100
1987	74.7	15.7	9.6	100
1988	75.7	14.8	9.5	100



### 1.3. Development of national transport, 1986-1988. In t-km

Despite the growth of international transport with Community Integration, national transport still accounts for some 75% of total Intra-Community transport (as measured in t-km - much higher still if measured in tonnes), but this varies considerably according to mode (road, 81% ; rail, 74% ; inland waterways, 28%). Table 1.2 sets out the summary figures for national transport in the Community.

Table 1.2. National Eur-12 t-km (x 10.<sup>9</sup>)

	Road	Rail	Inland Waterways	Total 3 modes
1986	538	110.8	26.5	675
1987	571	109.3	25.7	706
1988	615	108.3	26.5	750

#### Annual growth rates

1986-1987	+6.2%	-1.4%	-3.0%	+4.6%
1987-1988	+7.8%	-0.9%	+3.1%	+6.2%

#### Modal Split

1986	79.7	16.4	3.9	100
1987	80.9	15.5	3.6	100
1988	82.0	14.5	3.5	100

The figures show the dominance of road transport and the very limited impact of inland waterways on national transport ; these tendencies are even intensifying.

### 1.4. Development of international Intra-Community transport 1986-1988. In t-km.

Comparisons for international movements may be made in tonnes or t-km. T-km are examined in this section following the t-km tables for national transport in Section 1.3. Table 1.3 gives the summary figures for international intra-Community transport. It should be noted that the figures for road only relate to Community registered vehicles (which account for a very high proportion of Intra-Community journeys) and that the figures given are the sum of the bilateral journeys (as reported in Directive 78/546) and the cross-trade journeys under Community Quota authorizations (as reported in Regulation 3164/76).

**Table 1.3. International Intra-Eur-12 t-km (x 10.<sup>9</sup>)**

	Road	Rail	Inland Waterways	Total 3 modes
1986	114.1	36.8	65.6	216.5
1987	125.5	36.8	63.5	225.8
1988	141.0	39.0	68.2	248.2

**Annual growth rates**

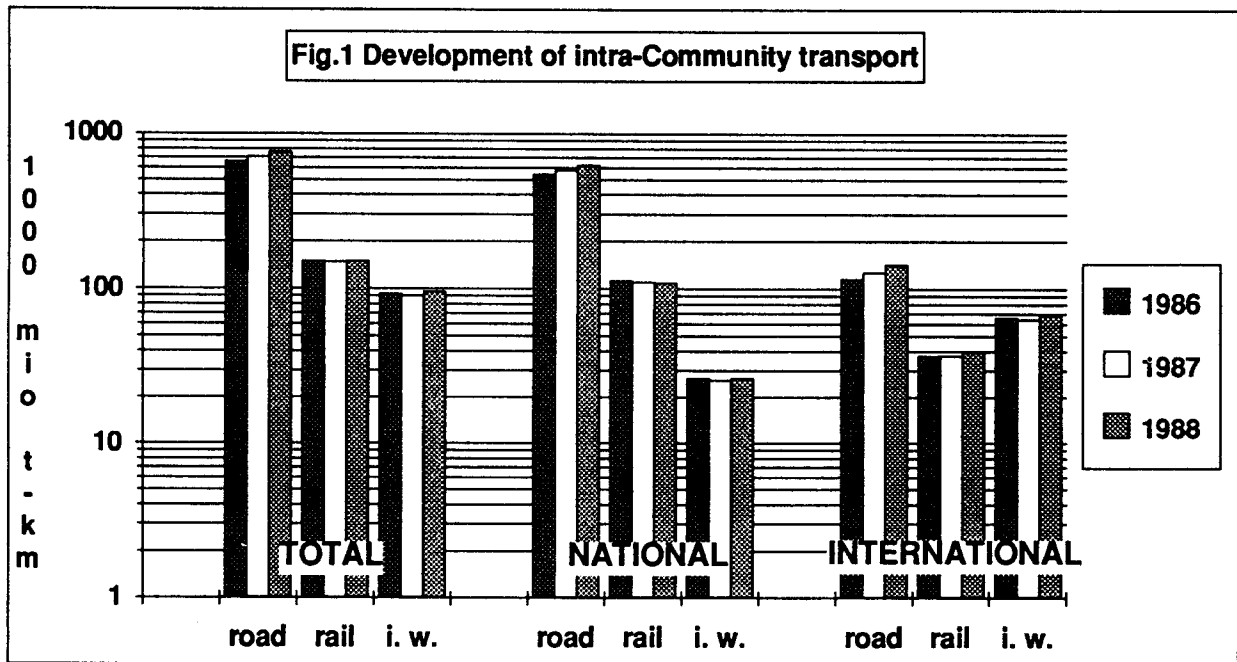
1986-1987	+10.0%	+0 %	-3.2%	+4.3%
1987-1988	+12.3%	+6.0%	+7.4%	+9.9%

**Modal Split**

1986	52.7	17.0	30.3	100
1987	55.6	16.3	28.1	100
1988	56.8	15.7	27.5	100

The results show an impressive overall increase of almost 10% in 1988 with each mode showing a substantial increase. As road haulage showed the highest increase in 1988 the modal split moved a further one per cent in favour of road. Growth of international road and inland waterway transport was about 4% higher than the corresponding national transport, while rail was 7% higher.

Fig. 1. Summarizes the main issues of tables 1.1, 1.2 and 1.3.



1.5. Development of International Intra-Community transport, 1986-1988, In tonnes

Although the emphasis of this chapter has been changed to t-km, the "traditional" tonnage figures are also given in this section. In order to retain consistency with Section 1.4, the tonnages for road are also based on the Directive 78/546 (for bilateral journeys) and Regulation 3164/76 (for cross-trades) ; this is different from recent years when the road tonnages were based on the sum of quarterly figures (themselves often based on trade data) published in the Market Developments Report.

Table 1.4. International Intra-Eur-12 tonnages (millions)

	Road	Rail	Inland Waterways	Total 3 modes
1986	205.0	65.3	191.9	462.2
1987	222.3	64.1	186.0	472.4
1988	250.7	68.4	199.8	518.9

Annual growth rates

1986-1987	+ 8.4%	-1.8%	-3.1%	+ 2.2%
1987-1988	+12.8%	+6.7%	+7.4%	+ 9.8%

Modal Split

1986	44.4	14.1	41.5	100
1987	47.0	13.6	39.4	100
1988	48.3	13.2	38.5	100

The annual increases in tonnes are very similar to those for t-km given in Table 1.3. The modal split figures necessarily show a similar evolution to t-km, but in tonnes the share of Inland Waterways is about 11% higher and that of road about 8% lower.

1.6. Preliminary assessment of International transport activity in 1989

While only partial information is yet available for 1989, the indications are that the strong growth observed in 1988 has continued in 1989.

For road haulage, traffic across the D border in 1989 increased by 10% while powered vehicles across the Channel increased by 12%. Information from statistics relating to Intra-Community trade for the first half of 1989 indicates an increase of 8.8% in road tonnages. The increase of international road haulage 1986-89 is about 30% (in tonnes or t-km) and the absolute increase is similar

to the total absolute value for rail ; two conclusions can be drawn from this: firstly that rail seems to have no realistic chance to absorb the current increase of road transport, and secondly that the continued increase of road transport will soon have serious environmental consequences unless improvements such as the "clean lorry" are introduced.

In 1989, international traffic on the Community rail network (Intra + extra) rose by 6.2% in t-km (4.2% in tonnes) while the total traffic on the Community rail network (Intra + extra + national) rose by 2.9% in t-km (2.6% in tonnes).

For inland waterways, the Central Rhine Commission reported an increase of 4.5% in t-km for traditional Rhine shipping in 1989 (1.9% in tonnes).

Intra-Community trade statistics show a decrease of 6.5% in maritime tonnage in the first half of 1989, due to a 23% fall in tonnage from the UK.

1.7. Importance of extra-Community transport for Community operators, 1988. In tonnes

Some summary figures for extra-Community transport reflecting the growing political interest are given in this Section. The figures for 1988, based on the "3 Directives", are the tonnages for Community operators and thus do not represent the total extra-Community transport market (i.e. non-Community operators for road and inland waterways are excluded). The figures given do, however, indicate the relative importance of the extra-Community market to Community operators ; the figures of 46% for rail is particularly impressive and reflects the importance of rail in Central and Eastern Europe (see Section 1.8 below).

Table 1.5 International Intra- and Extra-Community tonnages by Community operators (millions), 1988

	Road*	Rail	Inland Waterways	Total 3 modes
Intra	245.0	68.4	191.3	504.7
Extra	32.1**	57.7	7.4	97.2
Total	277.1	126.1	198.7	601.9
% Extra	12%	46%	3.7%	16%

\* excludes cross-trades

\*\* data for I and L vehicles relates to 1986

1.8. Relative importance of the principal modes of inland freight transport - Eastern Europe

The relative importance of the different modes of transport in Eastern Europe is quite different from that in the Community (given

In Section 1.2). In Eastern Europe, rail is the predominant mode for freight transport with about 70% of the t-km (15% in the Community), whereas road has less than 22% (except in Hungary, 32%) and the share of inland waterways is less than 5%. Details for individual Eastern European countries are given in Table 1.6 (source UN (Geneva)) which also includes pipelines.

Table 1.6

Relative importance of the principal modes of  
inland freight transport - Eastern Europe

(in t-km)

		ROAD	RAIL	INLAND WATERWAYS	PIPELINES
Soviet Union	1980	8.1	64.5	4.6	22.8
	1986	8.2	64.1	4.3	23.4
	1987	-	-	-	-
GDR	1980	-	-	-	-
	1986	18.9	72.7	3.1	5.3
	1987	19.2	72.5	2.9	5.4
Poland	1980	22.6	67.6	1.2	8.6
	1986	21.1	68.1	0.9	9.9
	1987	21.3	67.6	0.8	10.3
Czechoslovakia	1980	19.9	67.8	3.2	9.1
	1986	20.0	67.5	4.2	8.2
	1987	20.8	66.5	4.5	8.3
Hungary	1980	25.0	64.4	4.1	6.5
	1986	30.8	57.2	4.8	7.2
	1987	32.1	54.7	5.1	8.0
Romania	1980	12.4	79.7	2.5	5.5
	1986	-	-	-	-
	1987	-	-	-	-
Bulgaria	1980	-	-	-	-
	1986	-	-	-	-
	1987	-	-	-	-
Albania	1980	-	-	-	-
	1986	-	-	-	-
	1987	-	-	-	-

## CHAPTER 2

### ROAD

#### Contents

The contents of Chapter 2 can be summarized as follows :

- 2.1 Development of International Intra EUR-12 transport by nationality of vehicle, 1986-1988, in t-km
- 2.2 International Intra EUR-12 matrices, 1986-1988, in t-km
- 2.3 National transport, 1986-1988, in t-km
- 2.4 Total Intra EUR-12 transport, 1986-1988, in t-km
- 2.5 International Intra and Extra EUR-12 transport by Community hauliers, 1986-1988, in tonnes
- 2.6 Transport through the "Transit" countries, Austria and Switzerland
- 2.7 Supply and utilisation
- 2.8 Cost and Price Indices
- 2.9 Transport Inquiry Survey

2.1. Development of International Intra EUR-12 transport by nationality of vehicle, 1986-1988, in t-km

2.1.1. Introduction

In the 1987 Annual Report (as earlier Reports) the structure of the "Road Chapter" was quite different from other modes, as detailed data from the Road Directive (78/546) for 1987 was not available at the time of writing the Report. Consequently, a preliminary analysis for 1987 was based on data from the quarterly Market Developments Report (not broken down by nationality of vehicle) and the detailed analysis was confined to 1986.

It was not possible to retain this format for the 1988 Annual Report since, with the advent of the Single Administrative (Customs) Document on 1.1.1988, many of the traditional sources for road data for the Market Developments Report were, temporarily, delayed. While it is hoped to use the Customs Data for road for the Market Developments Report for 1989 and 1990 (while awaiting the introduction of quarterly statistics in the Road Directive in 1990 under Directive 89/462), the Customs data for 1988 is of limited use for the 1988 Annual Report as 1987 data is generally not available in the same form.

The 1988 Annual Report itself having been somewhat delayed, data for 1988 is available from the Statistics Directive or, as in the case of Italy and Luxembourg, has to be estimated since no data is expected for these two Member States for 1988. The 1988 Annual Report thus contains Directive figures for two "new" years, 1987 and 1988.

Another general point is that, in line with Chapter 1, it has been decided to give a much higher profile, at least for intra-Community transport, to t-km as opposed to tonnes.

2.1.2. Total International Intra EUR-12 transport by Community vehicles, 1986-1988, in t-km

The development of total international intra EUR-12 transport by Community road hauliers has been very strong during the period 1986-1988 (see final row of Table 2.1). The average growth was 10.1 % for 1987 (as compared to a preliminary figure of 6.4 % in tonnes, given in the 1987 Annual Report), and as high as 12.3% in 1988.

These figures are subject to a certain number of caveats due to changes in time series in certain Member States, especially Italy, United Kingdom and Denmark and "unusual" figures for Belgium for cross-trades in 1987; further details are given in the following section 2.1.3.

Total International Intra EUR-12 road transport is defined as the sum of "bilateral traffic" as reported in the Statistical Directive (78/546) and "cross-trade traffic" as (partially) reported in the Community Quota Statistics (Regulation 3164/76). Complete information on cross-trades is to be covered in the Directive (78/546 as modified by 89/462) as from 1990.

Tab. 2.1 International intra-EUR-12 t-km (mio)

Nationality of vehicle	TOTAL			% change		Share of EUR-12 total (%)		
	1986	1987	1988	87/86	88/87	1986	1987	1988
D	19996	20728	23087	+3.7%	+11.4%	17.5%	16.5%	16.4%
F	18249	20530	25414	+12.5%	+23.8%	16.0%	16.4%	18.0%
I	13950	13339	15367	-4.4%	+15.2%	12.2%	10.6%	10.9%
NL	20758	22937	25788	+10.5%	+12.4%	18.2%	18.3%	18.3%
B	13352	15504	17125	+16.1%	+10.5%	11.7%	12.4%	12.1%
L	1023	1214	1647	+18.7%	+35.6%	0.9%	1.0%	1.2%
UK	4522	6862	7426	+51.8%	+8.2%	4.0%	5.5%	5.3%
IRL	836	889	966	+6.3%	+8.7%	0.7%	0.7%	0.7%
DK	4454	4702	4618	+5.6%	-1.8%	3.9%	3.7%	3.3%
GR	1973	2009	2592	+1.8%	+29.0%	1.7%	1.6%	1.8%
E	13208	14709	14802	+11.4%	+0.6%	11.6%	11.7%	10.5%
P	1751	2113	2194	+20.7%	+3.8%	1.5%	1.7%	1.6%
EUR-12	114072	125537	141026	+10.1%	+12.3%	100.0%	100.0%	100.0%

### 2.1.3 Total International Intra EUR-12 transport by nationality of vehicles, 1986-1988, in t-km

Before examining the detailed figures in Table 2.1 it is necessary to take account of the following caveats (which also apply to the more detailed tables that follow in subsequent sections) :

- (a) For 1986, Italian data is based on information supplied under the Directive, but not published by SOEC as incomplete. For 1987, the increases in tonnes and tonne-kilometres have been taken pro-rata to the tonnages carried by Italian vehicles reported in the Italian foreign trade data. For 1988, the very large increase reported for Italian vehicles (over 50%) in the foreign trade statistics is thought to be unrealistic and has been replaced by the increase for all vehicles (1988 data is from the new "Single Administrative Document").



- (b) Luxembourg has not supplied data under the Directive for 1987 or 1988 and estimates for bilateral traffic have been made by the Commission's Services, + 6% for 1987 and + 20% for 1988, taking into account German data.
- (c) United Kingdom changed its survey methodology in 1987 and figures for 1986 and 1987 are not comparable.
- (d) Denmark changed its survey methodology in 1988 for traffic with the United Kingdom which now excludes unaccompanied semi-trailers.
- (e) Portuguese figures for 1987 and 1988 are by different survey methods.
- (f) Belgian figures for cross-trades for 1987, 1879 mio t-km, are almost certainly much too high, but have been retained since the likely value (about 1100 mio) cannot be allocated by relation.

After allowing for these caveats, the most outstanding results in Table 2.1. are :

- F : has an exceptional growth, up nearly 40% in 2 years.
- B : has a high growth, up 28% in 2 years, but the increase would be about 10% in 1987 and about 16% in 1988 if the adjusted figures for cross-trades were to be used.
- GR : the large increase for 1988 (+29%) despite continued difficulty for GR to obtain YU transit authorizations is due, at least partially, to GR policy of restricting YU transit authorizations to those with full loads; it brings the t-km by GR vehicles up to a level last recorded in 1984.
- E : the very small increase (+ 0.6%) in 1988, indicating that E is coming under an increasingly competitive situation.

The main changes in the market shares are :

- F : up from 16.0 % (1986) to 18.0 % (1988)
- L : up from 0.9 % (1986) to 1.2 % (1988)
- D : down from 17.5 % (1986) to 16.4 % (1988)
- E : down from 11.6 % (1986) to 10.5 % (1988).

2.1.4. Structure of total t-km (out/in/cross-trade) by nationality of vehicle, 1986-1988

Table 2.2 shows the total International Intra EUR-12 t-km subdivided by out ("exports"), in ("imports") and cross-trades by nationality of vehicle for 1986-1988. Data for "out" and "in" are derived from Directive 78/546, data for "cross-trades" from Regulation 3164/76 on Community Quota Statistics.

Table 2.2 shows that the overall Community average for "out/in" rose from 1.15 in 1986 to 1.17 in 1987 and 1.18 in 1988. This ratio is somewhat higher than that for tonnes quoted in previous Annual Reports (about 1.10) indicating that return "in" journeys tend to be slightly shorter than the outward journeys. The ratio varies considerably according to the nationality of vehicle being about 1.3 or over for NL, B, L, GR and E ; this implies a considerable amount of "empty, or partially loaded running" ; the oscillations in the E ratio (1.31 for 1986, 1.49 for 1987 and 1.33 for 1988 are rather surprising).

Finally, Table 2.2 shows the percentage of cross-trades in total t-km, but since cross-trades data is only currently (partially) available for hire and reward vehicles, comments on cross-trades will be made in that Section (2.1.6.).

2.1.5. Structure of total t-km (hire and reward/own account) by nationality of vehicle, 1986-1988

The percentage of own account in International Intra EUR-12 t-km is about 10% and has remained fairly stable (see Table 2.3) ; the percentage of own account is somewhat higher if measured in tonnes since average trip lengths are shorter.

Because of changes of survey methodology in UK and P, the overall figures for EUR-12 need careful interpretation ; with UK and P excluded, the percentage of own account is 10.6% in 1986, 10.1% in 1987 and 10.3% in 1988 ; i.e. rather more stable than the (crude) EUR-12 figures. The following points should also be noted.

I and L :

the share of own account was 'observed' in 1986 and estimated for 1987 and 1988 ;

The main results from Table 2.3 are the very high "own account" t-km for B (about 36% of the EUR-12 total) and a correspondingly very high share of total B traffic; about 30%, although this is declining slowly. "Own account" vehicles also account for just over 10% of the t-km in D, F and L and between 5 and 10% in NL, IRL, DK and P (a discontinuity of survey coverage should be noted between 1987 and 1988) ; for the remaining Member States (I, UK, GR and E) the share held by "own account" is very low.

Tab. 2.2 Structure of total t-km (mio)

Nationality of vehicle		OUT	IN	Cross-Trade	TOTAL	Ratio out/in	% cross-trade
D	86	10026	9864	106	19996	1.02	0.5%
	87	10369	10270	89	20728	1.01	0.4%
	88	11332	11630	125	23087	0.97	0.5%
F	86	9423	8210	616	18249	1.15	3.4%
	87	10373	9357	800	20530	1.11	3.9%
	88	12939	11322	1153	25414	1.14	4.5%
I	86	7021	6889	40	13950	1.02	0.3%
	87	6885	6419	35	13339	1.07	0.3%
	88	8312	7007	48	15367	1.19	0.3%
NL	86	11033	8561	1164	20758	1.29	5.6%
	87	11985	9365	1587	22937	1.28	6.9%
	88	13394	10475	1919	25788	1.28	7.4%
B	86	7080	5395	877	13352	1.31	6.6%
	87	7875	5750	1879	15504	1.37	12.1%
	88	9189	6621	1315	17125	1.39	7.7%
L	86	411	274	338	1023	1.50	33.0%
	87	438	292	484	1214	1.50	39.9%
	88	525	349	773	1647	1.50	46.9%
UK	86	2110	2324	88	4522	0.91	1.9%
	87	3255	3514	93	6862	0.93	1.4%
	88	3582	3709	135	7426	0.97	1.8%
IRL	86	377	406	53	836	0.93	6.4%
	87	393	397	99	889	0.99	11.1%
	88	420	424	122	966	0.99	12.6%
DK	86	2359	2005	90	4454	1.18	2.0%
	87	2441	2127	134	4702	1.15	2.8%
	88	2449	1974	195	4618	1.24	4.2%
GR	86	1154	819	0	1973	1.41	0.0%
	87	1152	855	2	2009	1.35	0.1%
	88	1411	1177	4	2592	1.20	0.2%
E	86	7470	5713	25	13208	1.31	0.2%
	87	8789	5882	38	14709	1.49	0.3%
	88	8417	6330	55	14802	1.33	0.4%
P	86	841	906	4	1751	0.93	0.2%
	87	1006	1092	15	2113	0.92	0.7%
	88	1065	1098	31	2194	0.97	1.4%
EUR-12	86	59305	51366	3401	114072	1.15	3.0%
	87	64961	55320	5256	125537	1.17	4.2%
	88	73035	62116	5875	141026	1.18	4.2%

Tab. 2.3 Structure of total t-km (mio)

nationality of vehicle		Hire & Reward	Own Account	TOTAL	Share Own Account
D	86	17802	2194	19996	11.0%
	87	<b>18468</b>	<b>2260</b>	<b>20728</b>	<b>10.9%</b>
	88	20535	2552	23087	11.1%
F	86	16060	2189	18249	12.0%
	87	<b>18283</b>	<b>2247</b>	<b>20530</b>	<b>10.9%</b>
	88	22607	2807	25414	11.0%
I	86	13639	311	13950	2.2%
	87	<b>13032</b>	<b>307</b>	<b>13339</b>	<b>2.3%</b>
	88	15013	354	15367	2.3%
NL	86	18962	1796	20758	8.7%
	87	<b>21299</b>	<b>1638</b>	<b>22937</b>	<b>7.1%</b>
	88	23781	2007	25788	7.8%
B	86	9078	4274	13352	32.0%
	87	<b>10987</b>	<b>4517</b>	<b>15504</b>	<b>29.1%</b>
	88	12080	5045	17125	29.5%
L	86	884	139	1023	13.6%
	87	<b>1064</b>	<b>150</b>	<b>1214</b>	<b>12.4%</b>
	88	1469	178	1647	10.8%
UK	86	4051	471	4522	10.4%
	87	<b>6708</b>	<b>154</b>	<b>6862</b>	<b>2.2%</b>
	88	7165	261	7426	3.5%
IRL	86	778	58	836	6.9%
	87	<b>809</b>	<b>80</b>	<b>889</b>	<b>9.0%</b>
	88	871	95	966	9.8%
DK	86	4071	383	4454	8.6%
	87	<b>4274</b>	<b>428</b>	<b>4702</b>	<b>9.1%</b>
	88	4243	375	4618	8.1%
GR	86	1973	0	1973	0.0%
	87	<b>2009</b>	<b>0</b>	<b>2009</b>	<b>0.0%</b>
	88	2592	0	2592	0.0%
E	86	13124	84	13208	0.6%
	87	<b>14614</b>	<b>95</b>	<b>14709</b>	<b>0.6%</b>
	88	14647	155	14802	1.0%
P	86	1751	0	1751	0.0%
	87	<b>2111</b>	<b>2</b>	<b>2113</b>	<b>0.1%</b>
	88	2068	126	2194	5.7%
EUR-12	86	102173	11899	114072	10.4%
	87	<b>113659</b>	<b>11878</b>	<b>125537</b>	<b>9.5%</b>
	88	127071	13955	141026	9.9%

#### 2.1.6. Structure of "Hire and Reward" t-km, 1986-1988

For "hire and reward" the available data can be split into bilateral traffic (from Directive 78/546) and (partial) cross-trade traffic (from Regulation 3164/76); this is shown in Table 2.4. The cross-trade traffic has already been shown in Table 2.2 (as information is not yet available at Community level on cross-trades by "own account") and the total "hire and reward" was also given in table 2.3.

As "hire and reward" accounts for about 90% (in t-km) of total international intra-EUR-12 traffic, the overall results for "hire and reward" are very similar to "total". Thus the increases in "hire and reward" t-km were 11.2% for 1987 and 11.8% for 1988 (this compares with 10.1% for 1987 and 12.3% for 1988 for total traffic - see Table 2.1).

Table 2.4 shows that the percentage of cross-trades in total "hire and reward" t-km has risen from 3.3% in 1986 to 4.6% in 1988 (the 4.6% shown for 1987 would be reduced to 4.0% if the cross-trades for B vehicles in 1987 were adjusted - see 2.1.3 (f)).

The percentage of cross-trades varies considerably according to the nationality of the vehicle with a very high percentage for L, but care should be taken in interpreting the trend because the 1987 and 1988 figures for 'bilateral' traffic are estimates, see 2.1.3.(b). The high proportion of cross-trades is due partly to the small geographical size of Luxembourg (which means that a haulier needs to do cross-trades to "survive") and partly due to the relative ease of obtaining Community Quota authorizations (which has encouraged hauliers from other countries to establish themselves in Luxembourg).

Vehicles from three other Member States have a percentage of cross-trades above the Community average, NL, B and IRL ; again these are all "small" Member States so that the "geographical" factor, mentioned for L is important ; i.e. a return load can easily be dropped off in a neighbouring Member State (B for NL ; NL for B ; UK for IRL) creating a cross-trade. The same is not true for GR (which has no land boundary with another Member State), while in the case of P, the percentage of cross-trades is rising rapidly from a very low level.

For the "large" Member States, only F vehicles have substantial cross-trades (perhaps due to its central position in EUR-12) while D, I, UK and E all have a very low percentage of cross-trades. These results may partially explain the attitudes of the different Member States to the "liberalisation" of the market.

Tab. 2.4 Structure of Hire & Reward t-km (mio)

Nationality of vehicle		Bilateral	Cross-Trade	TOTAL	%	% Share of EUR-12 total
				Hire & Reward		
D	86	17696	106	17802	0.6%	17.4%
	87	18379	89	18468	0.5%	16.2%
	88	20410	125	20535	0.6%	16.2%
F	86	15444	616	16060	3.8%	15.7%
	87	17483	800	18283	4.4%	16.1%
	88	21454	1153	22607	5.1%	17.8%
I	86	13599	40	13639	0.3%	13.3%
	87	12997	35	13032	0.3%	11.5%
	88	14965	48	15013	0.3%	11.8%
NL	86	17798	1164	18962	6.1%	18.6%
	87	19712	1587	21299	7.5%	18.7%
	88	21862	1919	23781	8.1%	18.7%
B	86	8201	877	9078	9.7%	8.9%
	87	9108	1879	10987	17.1%	9.7%
	88	10765	1315	12080	10.9%	9.5%
L	86	546	338	884	38.2%	0.9%
	87	580	484	1064	45.5%	0.9%
	88	696	773	1469	52.6%	1.2%
UK	86	3963	88	4051	2.2%	4.0%
	87	6615	93	6708	1.4%	5.9%
	88	7030	135	7165	1.9%	5.6%
IRL	86	725	53	778	6.8%	0.8%
	87	710	99	809	12.2%	0.7%
	88	749	122	871	14.0%	0.7%
DK	86	3981	90	4071	2.2%	4.0%
	87	4140	134	4274	3.1%	3.8%
	88	4048	195	4243	4.6%	3.3%
GR	86	1973	0	1973	0.0%	1.9%
	87	2007	2	2009	0.1%	1.8%
	88	2588	4	2592	0.2%	2.0%
E	86	13099	25	13124	0.2%	12.8%
	87	14576	38	14614	0.3%	12.9%
	88	14592	55	14647	0.4%	11.5%
P	86	1747	4	1751	0.2%	1.7%
	87	2096	15	2111	0.7%	1.9%
	88	2037	31	2068	1.5%	1.6%
EUR-12	86	98772	3401	102173	3.3%	100%
	87	108403	5256	113659	4.6%	100%
	88	121196	5875	127071	4.6%	100%

## 2.2. International Intra EUR-12 matrices, 1986-1988, in t-km

### 2.2.1. Introduction

In contrast to Section 2.1. (which presents results subdivided by "nationality of vehicle", this Section treats the results on a relation or 'origin and destination' basis. The overall t-km figures, given in Table 2.5., are presented in a matrix form with the diagonal (representing national traffic) left blank. Table 2.5. is also divided into 3 sub-matrices representing t-km made by vehicles registered in the 'origin' Member State (Table 2.6.), 'destination' Member State (Table 2.7) or any other Member State i.e. cross-trades, (Table 2.8.).

There is a cross-relationship between certain figures in Tables 2.5-2.8 and Table 2.2, thus the EUR-12 column in Table 2.6, the EUR-12 row in Table 2.7 and the grand total in Tables 2.8 and 2.5 can be found in the successive columns of Table 2.2.

The caveats mentioned at the beginning of Section 2.1.3. apply in Section 2.2 and even more care is required since "errors" for a given "nationality of vehicle" - the way the data is collected - spread like a computer 'virus' in certain tables, particularly for cross-trades.

### 2.2.2. Analysis

The quantity of information in the four matrices, Tables 2.5 - 2.8, is quite extensive and it is necessary to be selective in the analysis ; readers with an interest in a particular relation or traffic with a particular Member State can extract much more detailed information than can be analysed here.

In Table 2.9, the 10 largest flows (as measured by total t-km) are shown. All of these 10 largest flows involve D or F, and while D/NL provides the top two flows (NL - D, D - NL), there is relatively little difference between the top flow and the 9th largest flow. The final column of Table 2.9 gives the ratio 1988/1986 and it can be seen that on most relations growth has been similar to the overall average, 1.24. ; in fact the most discrepant results are for I - D (1.12) and D - I (1.13), a very low growth due no doubt to the restrictive policy of the 'transit' countries, Austria and Switzerland.

Tab. 2.5 Total international intra-EUR-12 traffic in tonne-kilometres (inward + outward + cross-trades) (mio t-km)

from	to	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
86	D	4970	5374	5819	2765	204	643	54	1428	579	2333	434	24603	
87	D	5594	5701	6137	2797	227	966	102	1414	613	2554	479	26584	
88	D	5947	6050	6807	3210	296	1011	54	1475	840	2552	512	28754	
86	F	5270	4881	1746	3600	104	1378	75	360	165	2661	348	20588	
87	F	5850	4787	1826	3690	85	1707	43	405	142	2914	548	21997	
88	F	6494	5896	2064	4153	166	1759	73	406	237	3820	644	25712	
86	I	5935	4352	1711	1688	61	1340	78	393	102	1146	333	17139	
87	I	6081	4427	2100	1674	67	1879	51	373	109	1406	487	18654	
88	I	6625	5841	2228	1929	54	2019	98	355	141	2128	621	22039	
86	NL	6262	2648	3037	1705	34	458	71	496	195	1077	127	16110	
87	NL	6590	2825	3147	1864	39	549	27	550	193	1221	151	17156	
88	NL	7373	3268	3690	2042	42	638	42	585	295	1301	218	19494	
86	B	3200	4358	2020	2042	232	182	19	213	58	744	101	13210	
87	B	3348	4749	2273	2159	242	403	21	250	61	823	125	14454	
88	B	3738	5720	2326	286	286	405	30	275	91	1162	88	16674	
86	L	348	157	52	170	14	14	0	1	3	14	1	835	
87	L	355	184	65	194	17	17	0	0	2	17	2	913	
88	L	410	205	61	226	23	23	0	1	3	3	2	1021	
86	UK	553	827	1105	219	118	7	187	168	47	821	67	4119	
87	UK	902	1063	1453	272	199	6	191	240	82	1046	127	5581	
88	UK	1092	1071	1445	319	179	4	235	67	123	999	134	5668	
86	IRL	63	117	53	18	15	0	198	12	0	11	3	490	
87	IRL	63	104	43	9	26	0	221	13	1	20	0	500	
88	IRL	83	128	41	20	10	0	205	6	1	18	5	517	
86	DK	1142	325	547	103	0	473	24	24	95	127	37	3138	
87	DK	1173	377	539	117	0	490	24	24	93	135	53	3295	
88	DK	1594	451	501	130	0	103	11	97	97	139	51	3403	
86	GR	767	135	80	178	44	68	0	39	0	55	0	1367	
87	GR	774	172	83	45	1	109	0	36	0	64	1	1443	
88	GR	958	157	72	59	0	109	0	44	0	9	0	1634	
86	E	2277	3690	1357	813	562	5	1344	33	163	1	717	10962	
87	E	2709	4335	1430	688	688	11	1723	54	188	4	911	13062	
88	E	3228	4667	1394	1075	912	5	1580	29	197	13	758	13658	
86	P	262	376	200	87	62	3	55	0	29	0	437	1511	
87	P	303	497	228	103	84	3	98	0	51	0	531	1898	
88	P	329	533	292	143	56	5	134	0	76	0	684	2252	
86	EUR-12	26079	21955	18769	10832	651	6153	541	3302	1245	9426	2168	114072	
87	EUR-12	28148	24327	19749	11378	681	8162	513	3520	1300	10731	2884	125537	
88	EUR-12	31924	27988	21995	15621	858	7986	572	3487	1841	12815	3033	141026	



Tab. 2.6 International intra-EUR-12 traffic by relation by hauliers registered in Member State of loading (OUTWARD traffic) (mio t-km)

to	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
86	2720	2738	1441	1237	97	202	15	564	111	763	138	10026	
87	2781	2903	1382	1242	112	202	9	514	138	915	171	10369	
88	3007	3122	1533	1350	161	235	9	565	174	990	186	11332	
86	2299	3179	514	1281	58	811	2	84	108	910	177	9423	
87	2782	3123	521	1239	36	1033	9	109	68	1093	360	10373	
88	2989	4240	590	1449	107	1141	3	95	178	1737	410	12939	
86	2710	1802	475	582	18	446	19	86	44	648	191	7021	
87	2539	1654	592	492	15	417	14	77	40	800	245	6885	
88	2759	2124	657	533	11	470	16	74	86	1225	357	8312	
86	4998	1823	1814	1327	27	277	4	332	44	314	73	11033	
87	5341	2018	1960	1447	31	304	7	368	38	373	98	11985	
88	5972	2290	2112	1606	33	359	8	391	35	452	136	13994	
86	1779	2693	1176	809	138	32	3	38	1	375	36	7080	
87	1879	3005	1275	798	142	225	1	65	4	421	60	7875	
88	2057	3630	1564	823	165	219	5	89	0	611	26	9189	
86	146	75	33	46	100	11	0	0	0	0	0	411	
87	155	80	35	49	107	12	0	0	0	0	0	438	
88	186	96	42	59	128	14	0	0	0	0	0	525	
86	378	510	777	80	99	6	53	3	30	155	19	2110	
87	710	611	1152	133	5	5	32	5	63	352	75	3255	
88	803	607	1198	147	3	3	68	9	90	455	86	3582	
86	40	101	30	15	0	169	0	0	0	3	3	377	
87	45	78	29	24	0	202	0	0	0	9	0	393	
88	66	109	27	16	0	183	0	0	0	7	4	420	
86	827	289	398	84	71	469	24	80	80	85	32	2359	
87	859	314	395	81	70	489	23	81	81	89	40	2441	
88	1236	346	372	91	75	93	11	77	99	99	49	2449	
86	691	104	77	160	43	60	0	12	6	6	0	1154	
87	693	99	79	146	44	59	0	17	13	13	1	1152	
88	874	95	67	217	58	75	0	19	6	6	0	1411	
86	1286	2990	749	506	3	1083	6	68	0	523	523	7470	
87	1513	3517	891	595	3	1274	8	81	0	616	616	8789	
88	1704	3460	718	592	0	998	13	76	9	486	486	8417	
86	180	238	98	25	40	45	0	13	0	199	199	841	
87	197	253	150	32	3	38	0	23	0	283	283	1006	
88	206	233	191	56	4	69	0	40	0	240	240	1065	
86	1534	13345	11069	4156	5051	3605	126	1200	418	3458	1192	59305	
87	16713	14410	11982	4314	5131	4255	103	1259	432	4348	1666	64961	
88	18852	15997	13653	4781	5710	3856	133	1358	649	5822	1740	73035	

Tab. 2.7 International intra-EUR-12 traffic by relation by hauliers registered in Member State of unloading (INWARD traffic) (mio t-km)

to	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
from													
D	86	2080	2484	4321	1434	100	405	35	847	463	1420	268	13857
	87	2587	2531	4673	1433	107	714	88	879	470	1462	267	15211
	88	2672	2605	5201	1709	128	711	43	872	659	1293	265	16156
F	86	2798	1643	1201	2256	42	550	71	248	56	1743	165	10773
	87	2838	1574	1264	2371	45	644	33	259	73	1795	181	11077
	88	3236	1574	1441	2606	54	593	68	276	57	2048	223	12176
I	86	2471		1131	916	28	750	57	286	58	463	125	9203
	87	2650		1278	963	30	1199	34	276	69	476	199	10261
	88	3357		1415	1174	36	1306	78	261	54	747	204	12226
NL	86	1225	1063		376	7	178	67	160	150	736	46	4806
	87	1198	873		415	7	239	19	173	151	758	40	4640
	88	1349	1341		434	8	269	33	186	258	761	62	5635
B	86	1316	581	1210		94	142	16	157	56	348	58	5583
	87	1355	589	1359		100	167	20	163	55	358	53	5886
	88	1541	578	1507		120	169	24	158	90	484	39	6688
L	86	193	16	29	69		3	0	0	3	13	1	406
	87	194	17	28	87		5	0	0	2	14	2	451
	88	217	11	28	97		9	0	0	3	0	2	473
UK	86	153	258	135	10	1		134	164	17	656	47	1874
	87	162	158	150	52	1		159	234	19	675	50	2085
	88	255	150	170	50	1		167	57	33	517	46	1882
IRL	86	13	6	2	0	0	29		12	0	8	0	87
	87	10	15	3	1	0	19		11	0	8	0	76
	88	11	9	4	2	0	22		4	0	6	0	60
DK	86	288	138	179	26	0	4	0		15	41	4	716
	87	282	124	208	39	0	1	0		12	42	12	761
	88	317	103	229	44	0	9	0		20	35	0	928
GR	86	70	31	18	0	0	8	0	27		49	0	203
	87	74	72	11	0	0	49	0	19		51	0	276
	88	80	61	8	0	0	34	0	25		3	0	211
E	86	814	689	279	291	2	247	26	89	1		192	3221
	87	991	474	325	349	2	418	44	92	4		288	3777
	88	1168	1173	400	486	2	524	11	105	3		257	4672
P	86	76	131	56	17	0	8	0	15	0	236		637
	87	87	233	66	40	0	59	0	21	0	243		819
	88	99	289	78	19	0	63	0	30	0	436		1107
EUR-12	86	9864	6889	8561	5395	274	2324	406	2005	819	5713	906	51366
	87	10270	6419	9365	5750	292	3514	397	2127	855	5882	1092	55320
	88	11630	7007	10475	6621	349	3709	424	1974	1177	6330	1098	62116

Tab. 2.8 Intra-EUR-12 CROSS-TRADES by EUR-12 hauliers (mio t-km)

to	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
from													
D	170	152	57	94	7	36	4	17	5	150	28	720	
F	226	267	82	122	8	50	5	21	5	177	41	1004	
I	268	323	73	151	7	65	2	38	7	269	61	1264	
NL	173	59	31	63	4	17	2	28	1	8	6	392	
B	230	90	41	90	4	30	1	37	1	26	7	547	
L	269	82	33	98	5	25	2	35	2	35	11	597	
UK	307	79	105	190	15	144	2	21	0	35	17	915	
IRL	463	115	230	219	22	263	3	20	0	130	43	1508	
DK	509	123	156	222	7	243	4	20	1	156	60	1507	
GR	39	27	160	2	0	3	0	4	1	27	8	271	
E	51	40	314	2	1	6	1	9	4	90	13	531	
P	52	44	237	2	1	10	1	8	2	88	20	465	
EUR-12	105	60	326	1	0	8	0	18	1	21	7	547	
D	114	77	409	2	0	11	0	22	2	44	12	693	
F	140	106	411	2	1	17	1	28	1	67	23	797	
I	9	3	0	1	0	0	0	1	0	1	0	18	
NL	6	2	13	0	0	0	0	0	0	3	0	24	
B	7	3	8	1	0	0	0	1	0	3	0	23	
L	22	18	70	9	0	0	0	1	1	10	1	135	
UK	30	27	143	14	0	14	0	1	1	19	2	241	
IRL	34	28	97	13	0	17	0	28	1	27	2	204	
DK	10	6	0	0	0	0	0	0	0	0	0	26	
GR	8	5	0	1	0	0	0	2	1	3	0	31	
E	6	5	0	0	0	0	0	2	1	5	1	37	
P	17	11	5	0	0	0	0	2	1	5	1	63	
EUR-12	27	15	2	6	0	0	0	0	0	1	1	93	
D	32	20	5	8	0	0	0	1	1	4	1	126	
F	41	26	6	11	0	1	0	0	0	5	2	10	
I	34	20	6	11	0	0	0	0	0	0	0	15	
NL	6	3	0	1	0	0	0	0	0	0	0	10	
B	7	4	1	1	0	1	0	0	0	0	0	31	
L	4	1	5	1	0	0	0	0	0	0	0	15	
UK	177	11	17	15	0	14	1	6	0	0	0	12	
IRL	205	28	75	38	6	31	2	15	0	0	2	271	
DK	356	34	133	65	3	58	5	16	1	2	7	496	
GR	6	7	4	5	0	2	0	1	0	2	15	769	
E	19	11	8	12	0	1	0	7	0	5	33	33	
P	24	11	8	11	1	2	0	7	0	8	73	73	
EUR-12	881	400	811	386	26	224	9	97	8	255	70	3401	
D	1165	560	1348	497	41	393	13	134	13	501	126	5256	
F	1442	669	1335	575	25	421	15	155	15	663	195	5875	

Table 2.9

## Largest International Intra EUR-12 t-km

Rank ('88)	Relation	1986	1987	1988	Ratio 1988/1986
1	NL - D	6262	6590	7373	1.18
2	D - NL	5819	6137	6807	1.17
3	I - D	5935	6081	6625	1.12
4	F - D	5270	5850	6494	1.23
5	D - I	5374	5701	6050	1.13
6	D - F	4970	5594	5947	1.20
7	F - I	4881	4787	5896	1.21
8	I - F	4352	4427	5841	1.32
9	B - F	4358	4749	5720	1.31
10	E - F	3690	4335	4667	1.26
	All	114072	125537	141026	1.24

An alternative method of analysis is given in table 2.10, it shows the shares of t-km performed on journeys from each origin Member State (an analysis can also be carried out by each destination Member State, but this gives similar results - and is not shown here). The first four columns are derived from the right-hand column of Table 2.6, 2.7, 2.8 and 2.5 respectively ; the last 2 columns give the "share of the origin Member State" and "share of cross-trades" (the "share of the Partner Member States" is not shown, this is not directly of interest since the 'partner' changes for each of the 11 relations which have been aggregated together in the basic matrix, Table 2.7).

The most interesting results from Table 2.10 are

- the increasing share held by F vehicles for journeys originating in F
- the declining share held by E vehicles for journeys originating in E
- the rapidly increasing share of cross-trades for journeys originating in E.

Due to changes in survey methodology, the changing shares held by UK, DK and P for journeys originating in UK, DK and P respectively, cannot be easily interpreted ; because of the very high reporting of cross-trades by B hauliers in 1987, the share of cross-trades for journeys originating in all Member States (except B) in 1987 cannot be easily interpreted - these figures have been put in brackets.

Table 2.10

Origin Member State	Vehicles registered in			Total	Share of origin M.S.	Share of cross-trade	
	Origin M.S.	Partner M.S.	Other M.S. (cross-trade)				
D	86	10026	13857	720	24603	40.8	2.9
	87	10369	15211	(1004)	26584	39.0	(3.8)
	88	11332	16158	1264	28754	39.4	4.4
F	86	9423	10773	392	20588	45.8	1.9
	87	10373	11077	(547)	21997	47.2	(2.5)
	88	12939	12176	597	25712	50.3	2.3
I	86	7021	9203	915	17139	41.0	5.3
	87	6885	10261	(1508)	18654	36.9	(8.1)
	88	8312	12226	1501	22039	37.7	6.8
NL	86	11033	4806	271	16110	68.5	1.7
	87	11985	4640	(531)	17156	69.9	(3.1)
	88	13394	5635	465	19494	68.7	2.4
B	86	7080	5583	547	13210	53.6	4.1
	87	7875	5886	693	14454	54.5	4.8
	88	9189	6688	797	16674	55.1	4.8
L	86	411	406	18	835	49.2	2.2
	87	438	451	(24)	913	48.0	(2.6)
	88	525	473	23	1021	51.4	2.3
UK	86	<u>2110</u>	1874	135	<u>4119</u>	<u>51.2</u>	3.2
	87	3255	2085	(241)	5581	58.3	(4.3)
	88	3582	1882	204	5668	63.2	3.6
IRL	86	377	87	26	490	76.9	5.3
	87	393	76	(31)	500	78.6	(6.2)
	88	420	60	37	517	81.2	7.2
DK	86	2359	716	63	3138	75.2	2.0
	87	<u>2441</u>	761	(93)	<u>3295</u>	<u>74.1</u>	(2.8)
	88	2449	828	126	3403	72.0	3.7
GR	86	1154	203	10	1367	84.4	0.7
	87	1152	276	(15)	1443	79.8	(1.0)
	88	1411	211	12	1634	86.4	0.7
E	86	7470	3221	271	10962	68.1	2.5
	87	8789	3777	(496)	13062	67.3	(3.8)
	88	8417	4672	769	13858	60.7	5.5
P	86	841	637	33	1511	55.7	2.2
	87	<u>1006</u>	819	(73)	<u>1898</u>	<u>53.0</u>	(3.8)
	88	1065	1107	80	2252	47.3	3.6
EUR-12	86	59305	51366	3401	114072	52.2	3.0
	87	64961	55320	(5256)	125537	51.7	(4.2)
	88	73035	62116	5875	141026	51.8	4.2

### 2.3. National transport 1986-1988, in t-km

While the development in national transport in t-km from 1986 to 1988 has not been quite as dramatic as International Intra EUR-12 traffic, there have been substantial increases, + 6.2% in 1987 and + 7.7% in 1988. The increases for different Member States are shown in Table 2.11. Particularly large increases occurred in F, UK and E, while DK and GR remained stable; only IRL showed a decline.

Table 2.12 gives the market share of national transport in each Member State held by "hire and reward" vehicles; this varies enormously from 14% in L to 82% in E. The share of "hire and reward" is increasing in F, B and IRL. There appears to have been a considerable decline in "hire and reward" share in GR in 1988, but a more detailed examination of the Directive data reveals a 50 x increase of tonnage by own account for Community Group 23 (leather, textile, clothing, other manufactured articles) in the 150-499 km distance band; this "extraordinary" result leads to the apparent change in "hire and reward" share in 1988.

The actual t-km performed by "hire and reward" vehicles in national transport is given in Table 2.13; these figures are given for their own interest as well as a base against which the potential for cabotage operations (approved as from 1.7.90) can be judged.

Tab. 2.11 T-km achieved in national transport (mio t-km)

nationality of vehicle	1986	1987	1988	% change 87/86	% change 88/87
D	103089	104880	110847	+1.7%	+5.7%
F	82610	88259	97570	+6.8%	+10.5%
I	111271	117444e	121012e	+5.5%	+3.0%
NL	18981	19935	21856	+5.0%	+9.6%
B	10834	10958	12375	+1.1%	+12.9%
L	239	250e	270e	+4.6%	+8.0%
UK	102582	109899	126682	+7.1%	+15.3%
IRL	4200	3986	3948	-5.1%	-1.0%
DK	8825	8808	9057	-0.2%	+2.8%
GR	12539	13064	12354	+4.2%	-5.4%
E	74144	84751	89661	+14.3%	+5.8%
P	8225e	8636	9462	+5.0%	+9.6%
EUR-12	537539	570870	615094	+6.2%	+7.7%

Tab. 2.12 National traffic : market share by Hire & Reward hauliers

nationality of vehicle	1986	1987	1988
D	56.7%	57.0%	56.9%
F	58.8%	60.4%	62.6%
I	80.6%	80.6%e	80.6%e
NL	66.6%	67.2%	65.7%
B	46.9%	48.2%	49.9%
L	14.2%	14.2%e	14.2%e
UK	67.5%	70.7%	70.0%
IRL	38.4%	40.4%	42.2%
DK	74.1%	74.3%	74.0%
GR	69.7%	66.0%	56.0%
E	82.7%	82.4%	82.5%
P	28.5%e	28.5%	29.5%
EUR-12	67.8%	68.9%	68.8%

Tab. 2.13 National transport : t-km achieved by Hire & Reward hauliers (mio)

nationality of vehicle	1986	1987	1988	% change 87/86	% change 88/87
D	58432	59779	63096	+2.3%	+5.5%
F	48603	53345	61077	+9.8%	+14.5%
I	89727	94705e	97582e	+5.5%	+3.0%
NL	12650	13404	14365	+6.0%	+7.2%
B	5078	5286	6169	+4.1%	+16.7%
L	34	36e	38e	+5.9%	+5.6%
UK	69246	77665	88673	+12.2%	+14.2%
IRL	1613	1610	1665	-0.2%	+3.4%
DK	6535	6540	6701	+0.1%	+2.5%
GR	8740	8624	6913	-1.3%	-19.8%
E	61295	69825	74001	+13.9%	+6.0%
P	2345e	2462	2790	+5.0%	+13.3%
EUR-12	364298	393281	423070	+8.0%	+7.6%

2.4. Total Intra EUR-12 transport, 1986-1988. In t-km

Combining the results from Table 2.1 for international transport (bilateral + cross-trades) with Table 2.11 for national transport gives the total Intra EUR-12 transport; this is given in Table 2.14.

The overall increases for Intra EUR-12 transport of 6.9% in 1987 and 8.6% in 1988 are very high as compared to increases in other recent years (see Annual Report 1987). The increases generally, reflect the increase in national transport as this dominates the market, especially in the "large" Member States (D, F, I, UK and E). Very substantial increases in activity have been observed for vehicles registered in F, NL, B, L, UK and E between 1986 and 1988 (although it should be noted that the increase for L is an estimate by the Commission Services).

The relative importance of international transport for vehicles registered in different Member States is shown in Table 2.15. The importance of international transport is gradually increasing within the Community (17.5% of t-km in 1986, 18.7% in 1988) and this is generally true for vehicles registered in each Member State except E.

Tab. 2.14 T-km achieved in total intra-Community transport (national + bilateral intra-EUR-12 + cross-trades) for each nationality of vehicle (mio t-km)

nationality of vehicle	1984	1985	1986	1987	1988	% change 87/86	% change 88/87
D	114551	116280	123085	125609	133934	+2.1%	+6.6%
F	93921	94775	100859	108788	122984	+7.9%	+13.0%
I	115809e	118800e	125221	130783e	136379e	+4.4%	+4.3%
NL	35104	36432	39476	42872	47644	+8.6%	+11.1%
B	21176	21621	24186	26462	29500	+9.4%	+11.5%
L	824	1044	1264	1464e	1917e	+15.8%	+30.9%
UK	102495	104027	107104	116761	134108	+9.0%	+14.9%
IRL	4495	4354	5036	4877	4914	-3.2%	+0.8%
DK	11672	12340	13279	13510	13675	+1.7%	+1.2%
GR	12056	12617	14512	15072	14946	+3.9%	-0.8%
E			87350	99456	104463	+13.9%	+5.0%
P			9976e	10741e	11656e	+7.7%	+8.5%
EUR-12	512103	522290	651348	696395	756120	+6.9%	+8.6%

Tab. 2.15 Importance of international intra-Community transport in total transport for each nationality of vehicle - (t-km)

nationality of vehicle	1984	1985	1986	1987	1988
D	14.7%	15.2%	16.2%	16.5%	17.2%
F	16.3%	16.5%	18.1%	18.9%	20.7%
I	12.0% <sup>e</sup>	11.3% <sup>e</sup>	11.1%	10.2% <sup>e</sup>	11.3% <sup>e</sup>
NL	48.4%	50.1%	51.9%	53.5%	54.1%
B	49.5%	52.0%	55.2%	58.6%	58.1%
L	68.1%	80.3%	81.1%	82.9% <sup>e</sup>	85.9% <sup>e</sup>
UK	3.5%	3.4%	4.2%	5.9%	5.5%
IRL	11.7%	14.4%	16.6%	18.3%	19.7%
DK	34.0%	32.4%	33.5%	34.8%	33.8%
GR	20.9%	18.0%	13.6%	13.3%	17.3%
E			15.1%	14.8%	14.2%
P			17.6% <sup>e</sup>	19.6% <sup>e</sup>	18.8% <sup>e</sup>
EUR-12	16.5%	16.8%	17.5%	18.0%	18.7%

## 2.5. International Intra and Extra eur-12 transport by Community hauliers, 1980-1988, in tonnes

### 2.5.1. Introduction

Because of the concentration in this Annual Report on analysis of t-km, the analysis on the basis of tonnages will be rather brief. While awaiting data from the Single Administrative (customs) Document - which will give data for all hauliers including non-Community hauliers, from 1988 onwards although there are some difficulties due to the large proportion of "unknown nationality" for some reporting Member States - and from the extension of the Directive which will give data on cross-trades by Community hauliers from 1990 onwards, it has been decided to limit the analysis here to bilateral transport by Community hauliers as reported in Directive 78/546. With regard to Intra EUR-12 transport this follows the approach adopted in Section 2.2. of the 1987 Annual Report (but adds data for 1987 and 1988), but with regard to Extra EUR-12 transport widens the scope of Section 2.6 of the 1987 Annual Report from EFTA countries to all European countries (but only covers Community hauliers).

It is intended to examine the data from the Single Administrative Document in the next "Analysis and Forecast" Report.

### 2.5.2. Bilateral International Intra EUR-12 transport, 1986-1988, in tonnes

Table 2.16. shows that the increase in (bilateral) tonnages was 7.9% from 1986 to 1987 and 12.7% from 1987 to 1988 (this compares with 9.7% and 11.8% respectively from t-km - see Table 2.4) bringing the total (bilateral) international Intra EUR-12 tonnage to 245.0 million tonnes in 1988. Readers may note that while the addition of the (partial) cross-trades reported in the Community Quota Statistics added 4.6% to the bilateral t-km (Table 2.4), the same source would only add about 2% to the bilateral tonnages.

Table 2.16. gives the tonnages transported by vehicles registered in both the origin and destination Member State for each relation. The tonnages transported by vehicles registered in the origin Member State and vehicles registered in the destination Member State are shown separately in Tables 2.17 and 2.18 respectively.



Tab. 2.16 Total intra-EUR-12 traffic by relation - '1000 tonnes

from	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
86		9796	5292	20573	8058	956	768	40	2586	248	1182	168	49667
87		11343	5510	21378	8116	1069	1068	72	2592	263	1301	181	52893
88		11607	5841	23512	9222	1414	1123	39	2696	360	1269	194	57277
86		11300	5546	2814	10900	375	1973	68	286	73	3496	232	37063
87		11549	5362	3026	11456	315	2292	42	303	60	3809	327	38541
88		13495	6644	3358	12657	664	2353	85	309	143	4970	384	45062
86		5401	4665	1138	1111	50	705	40	236	141	792	153	14432
87		5426	4714	1325	1122	49	974	29	223	154	918	214	15148
88		5919	6231	1474	1340	56	1049	42	211	184	1417	270	18194
86		18145	4450	2008	10566	107	858	68	674	71	569	52	37568
87		18730	4743	1981	11650	104	950	31	731	70	611	61	39662
88		20876	5305	2446	13050	118	1065	43	782	109	646	91	44531
86		8689	14010	1359	12491	1153	378	22	225	23	433	44	38815
87		9427	15980	1488	13794	1223	956	22	251	22	477	54	43694
88		10436	19775	1742	15593	1549	989	33	271	34	675	35	51132
86		1659	684	56	900	27	27	0	0	1	11	1	3579
87		1680	699	58	1006	29	29	0	0	1	11	1	3728
88		1919	891	65	1171	39	39	0	0	1	0	1	4356
86		670	1181	661	228	12	228	808	153	14	385	30	4559
87		1024	1531	825	492	8	355	935	216	30	521	55	5992
88		1240	1450	843	574	7	313	964	59	42	507	59	6056
86		43	113	29	17	0	732	7	7	0	4	1	958
87		42	101	25	23	0	769	7	7	0	7	0	987
88		62	106	20	13	0	749	2	2	0	7	2	981
86		2603	263	357	105	0	433	14	2	33	51	12	4236
87		2465	297	343	118	0	445	13	153	32	52	17	4181
88		2860	350	441	129	0	93	7	59	34	54	16	4296
86		329	49	120	17	0	21	0	14	0	17	0	634
87		333	72	123	17	0	37	0	13	0	20	0	674
88		413	75	85	22	0	37	0	15	0	3	0	755
86		1161	4499	851	317	3	598	18	63	0	853	853	8754
87		1386	5316	849	384	4	817	29	70	1	1084	1084	10400
88		1583	5537	794	503	1	727	13	72	4	903	903	10626
86		105	241	92	28	1	23	0	9	0	609	0	1144
87		119	327	98	42	1	46	0	14	0	759	0	1442
88		137	347	129	26	2	55	0	20	0	983	0	1763
86		50105	39951	16371	38549	2657	6516	1078	4241	604	7549	1546	201409
87		52181	45123	16662	41231	2773	8383	1173	4420	633	8486	1994	217342
88		58940	51674	18941	45880	3811	8279	1226	4437	911	10531	1955	245030

Tab. 2.17 Intra-EUR-12 traffic by relation by hauliers registered in the Member State of loading (OUTWARD traffic) - '1000 tonnes

from	to	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
	86		5581	2947	5683	3935	429	291	13	1174	47	497	61	20658
D	87		5859	3120	5472	3881	505	296	8	1127	59	596	75	20998
	88		6336	3382	6079	4201	737	341	8	1243	74	645	81	23127
F	86	4548		3678	749	3643	204	1213	6	79	53	1288	139	15600
	87	4772		3573	890	3541	132	1518	13	88	35	1536	220	16318
	88	5787		4854	892	4249	444	1609	14	79	123	2378	250	20679
I	86	2393	1873		347	443	20	236	9	68	50	502	100	6041
	87	2242	1719		432	375	17	221	7	61	46	619	129	5868
	88	2436	2208		479	400	18	249	7	58	99	950	187	7091
NL	86	13644	3171	1215		8063	88	526	4	446	15	192	32	27396
	87	14417	3472	1330		8570	85	557	9	483	13	223	43	29202
	88	16007	3931	1446		9617	95	647	9	516	12	266	59	32605
B	86	4712	9319	877	4825		614	65	2	38	1	245	17	20715
	87	5361	10775	999	5284		650	638	1	70	1	284	29	24092
	88	5828	13342	1269	5449		861	677	6	96	0	409	15	27952
L	86	603	273	36	142	528		21	0	0	0	0	0	1603
	87	640	291	38	151	565		23	0	0	0	0	0	1708
	88	768	349	46	181	678		28	0	0	0	0	0	2050
UK	86	446	641	472	153	206	10		127	4	9	85	11	2164
	87	787	722	709	210	229	6		78	4	24	212	34	3015
	88	877	718	733	244	190	5		149	7	31	270	38	3262
IRL	86	31	102	17	15	12	0	668		0	0	1	1	847
	87	33	68	18	10	22	0	730		0	0	4	0	885
	88	52	104	13	16	11	0	708		0	0	5	2	911
DK	86	1749	241	234	121	79	0	426	14		27	35	11	2937
	87	1618	262	232	116	77	0	444	13		27	36	13	2838
	88	1902	288	219	130	83	0	85	7		26	41	16	2797
GR	86	300	36	120	60	17	0	19	0	5		2	0	559
	87	301	35	123	55	17	0	19	0	7		5	0	562
	88	379	33	105	82	22	0	24	0	7		2	0	654
E	86	638	3638	445	235	140	2	497	3	27	0		592	6217
	87	751	4279	524	277	164	3	585	3	32	0		697	7315
	88	832	4112	421	271	193	0	448	5	29	3		571	6885
P	86	72	140	43	11	19	1	19	0	4	0	266		575
	87	80	160	64	12	16	1	17	0	7	0	406		763
	88	93	148	83	29	17	2	26	0	10	0	361		769
EUR-12	86	29136	25015	10084	12341	17085	1368	3981	178	1845	202	3113	964	105312
	87	31002	27642	10730	12909	17457	1399	5048	132	1879	205	3921	1240	113564
	88	34961	31569	12571	13853	19661	2162	4842	205	2045	368	5327	1219	128782

Tab. 2.18 Intra-EUR-12 traffic by relation by hauliers registered in the Member State of unloading (INWARD traffic) - '1000 tonnes

from	to	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
	86		4215	2345	14890	4123	527	477	27	1412	201	685	107	29009
D	87		5484	2390	15906	4235	564	772	64	1465	204	705	106	31895
	88		5271	2459	17433	5021	677	782	31	1453	286	624	113	34150
F	86		6752	1868	2065	7257	171	760	62	207	20	2208	93	21463
	87		6777	1789	2136	7915	183	774	29	215	25	2273	107	22223
	88		7708	1790	2466	8408	220	744	71	230	20	2592	134	24363
I	86		3008		791	668	30	469	31	168	91	290	53	8391
	87		3184		893	747	32	753	22	162	108	299	85	9280
	88		3483		995	940	38	800	35	153	85	467	83	11102
NL	86		4501		793	2503	19	332	64	228	56	377	20	10172
	87		4313		651	3080	19	393	22	248	57	388	18	10460
	88		4869		1000	3433	23	418	34	266	97	380	32	11926
B	86		3977		7666		539	313	20	175	22	188	27	18100
	87		4066		8510		573	318	21	181	21	193	25	19602
	88		4608		10144		688	312	27	175	34	266	20	23180
L	86		1056		98	372		6	0	0	1	11	1	1976
	87		1040		92	441		6	0	0	1	11	1	2020
	88		1151		88	493		11	0	0	1	0	1	2307
UK	86		224		264	22	2		681	149	5	300	19	2395
	87		237		282	126	2		857	212	6	309	21	2977
	88		363		330	123	2		815	52	11	237	21	2796
IRL	86		12		2	0	0		64	7	0	3	0	111
	87		9		3	1	0		39	7	0	3	0	102
	88		10		4	2	0		41	2	0	2	0	70
DK	86		854		244	26	0		7		6	16	1	1299
	87		847		283	41	0		1		5	16	4	1343
	88		958		311	46	0		8		8	13	0	1499
GR	86		29		7	0	0		2		9	15	0	75
	87		32		4	0	0		18		6	15	0	112
	88		34		3	0	0		13		8	1	0	101
E	86		523		156	177	1		101	36	0		261	2537
	87		635		183	220	1		232	38	1		387	3085
	88		751		218	310	1		279	43	1		332	3741
P	86		33		25	9	0		4	5	0	343		569
	87		39		30	20	0		29	7	0	353		679
	88		44		35	9	0		29	10	0	622		994
EUR-12	86		20969		6287	15157	1289		2535	2396	402	4436	582	96097
	87		21179		5932	16826	1374		3335	2541	428	4565	754	103778
	88		23979		6370	18785	1649		3437	2392	543	5204	736	116248

In this Report, analysis of the detailed information will be restricted to an analysis of total tonnage transported by Member State of registration as shown in Table 2.19 (this corresponds to Table 2.5B in the 1987 Annual Report).

Tab. 2.19 Share of the market held by EUR-12-hauliers on intra-EUR-12 international journeys ('1000 tonnes)

Member State	Total tonnages moved (IN + OUT)			Share (%)			% change	
	1986	1987	1988	1986	1987	1988	87 / 86	88 / 87
D	41627	42177	47106	20.7%	19.4%	19.2%	+1.3%	+11.7%
F	30536	33799	40784	15.2%	15.6%	16.6%	+10.7%	+20.7%
I	12328	11800	13461	6.1%	5.4%	5.5%	-4.3%	+14.1%
NL	53604	57524	64632	26.6%	26.5%	26.4%	+7.3%	+12.4%
B	35872	40918	46737	17.8%	18.8%	19.1%	+14.1%	+14.2%
L	2892	3082	3698	1.4%	1.4%	1.5%	+6.6%	+20.0%
UK	4699	6350	6699	2.3%	2.9%	2.7%	+35.1%	+5.5%
IRL	1747	1926	1932	0.9%	0.9%	0.8%	+10.2%	+0.3%
DK	5333	5379	5189	2.6%	2.5%	2.1%	+0.9%	-3.5%
GR	961	990	1197	0.5%	0.5%	0.5%	+3.0%	+20.9%
E	10653	11880	12089	5.3%	5.5%	4.9%	+11.5%	+1.8%
P	1157	1517	1505	0.6%	0.7%	0.6%	+31.1%	-0.8%
EUR-12.	201409	217342	245030	100.0%	100.0%	100.0%	+7.9%	+12.7%

In terms of percentage shares, the main differences between the results for tonnes and those for t-km (as given in Table 2.1 which include cross-trades and are thus not strictly comparable) are that the central Member States (Benelux) have a much higher share when measured in tonnes, while the peripheral Member States (I, DK, GR, E, P) have a much lower share when measured in tonnes. In terms of tonnages carried, B vehicles almost surpassed D vehicles in 1988 (and would have done so if cross-trades were included).

In terms of percentage change (87/86 and 86/85) the results are generally similar to t-km (Table 2.1.). The main differences are UK (87/86), but there was a radical change of survey method, and P (87/86) due to large changes in the traffic with E (which increases tonnages more than t-km) ; for GR vehicles, the weaker market with I in 1988 in contrast with other relations meant that tonnages increased much less than t-km.

### 2.5.3. International Extra EUR-12 transport by Community hauliers, 1986-1988 in tonnes

It should be noted in this Section that only data collected under the Road Statistics Directive (78/546) is presented. Thus there is no information on cross-trades (only available under the modified Directive (89/462) from 1990) by Community hauliers on extra EUR-12 transport nor, more importantly, by hauliers from non-Member States.

Further, because it is intended to examine in a later report the question of compatibility between trade and transport data, it was not considered appropriate to estimate the data for Italian hauliers from trade data as is done for intra EUR-12 transport elsewhere in this chapter. Similarly data for L for 1987 and 1988 has not been estimated. Totals are shown ignoring I and L throughout.

The results for 1986-1988 are given in Table 2.20 for outward transport from the Community and Table 2.21 for inward transport to the Community. It should be noted that no figures are given between D and DDR, this is not regarded as international transport by the D authorities; transport between D and DDR carried by D vehicles amounted to about 2 Mio tonnes in 1986.

It should be stressed that, for most Member States, the sampling fractions used in the data collection are quite small, generally 1 to 2%, so that the results given in Tables 2.20 and 2.21 may be subject to quite large sampling errors.

The results show that, excluding transport by I and L vehicles and by D vehicles with DDR, tonnages with the rest of Europe grew by 4.2% in 1987 and by 20.7% in 1988 (although these increases would be more similar if the unusual F/Switzerland figures were ignored - see below). This compares with 7.9% and 12.7% respectively for intra EUR-12 tonnages.

The results can be considered in four geographical groupings of non-Member States, Scandinavia (Norway, Sweden and Finland), transit countries (Switzerland, Austria and Yugoslavia), Eastern Europe (including Turkey), and Other Europe.

Transport with Sweden dominates transport with Scandinavia accounting for about 75% of tonnage. Because of its geographical situation, DK vehicles play a dominant role. Interpretation of data requires care because of possible inclusion of transport of unaccompanied semi-trailers across the Baltic.

Tab. 2.20 Traffic with third countries : EUR - OUTWARD tonnages

from	to	N	S	SF	CH	A	YU	TR	SU	DDR	PL	CS	H	RUM	BUL	OTHER EUROPE	TOTAL
	86	111	355	36	3227	1783	71	33	4	43	28	32	8	5	2	5738	
D	87	96	403	35	3650	1891	62	44	5	43	36	22	11	6	1	6305	
	88	142	536	72	4408	2267	72	55	11	73	45	30	15	7	1	7734	
F	86		67		1828	67	4									1979	
	87	12	68		1170	88	7	4	2	5	7	4	4	1	7	1376	
	88		127	4	1733	57	6	9	3	11	5	11	4		36	2009	
I	86																
	87																
	88																
NL	86	57	305	10	433	175	45	38		28	7				3	1101	
	87	61	366	18	496	215	34	35		38	13					1276	
	88	65	402	20	541	244	40	38		42	13				67	1472	
B	86				144	50	15			6	1					216	
	87				202	64	22			3	3					294	
	88				219	78	2			4	2					305	
L	86				5											5	
	87																
	88																
UK	86		4		94	20	7									11	
	87	21	3		140	22	10	5		1	1					7	
	88	1	6		100	23	2	11		1						14	
IRL	86		1													1	
	87		2			9	3									14	
	88				3											4	
DK	86	355	841	75	44	21	5	2		4	7	6	1	1	2	1365	
	87	334	960	70	50	25	3	3	1	5	5	7	1	1	2	1469	
	88	312	994	79	52	29	4	2		9	5	8	2	1	7	1516	
GR	86		2		4	20	9	16		4	1	9	1	15	2	97	
	87		2		3	16	8	22		3	9	9	1	5	11	81	
	88		3		3	21	10	9		3	2	20	2	4	14	94	
E	86		102		101	40	2									265	
	87	14	39	16	119	47	2	2	1	2	4	7	3	1	312	600	
	88				80	38	2			1	2				513	722	
P	86		3		9	3				1						16	
	87		2		5	7										14	
	88	6	4		13	11				4						38	
TOTAL (EUR-12 - I-L)	86	523	1680	121	5834	2179	158	89	4	43	51	51	34	23	20	299	11159
	87	524	1926	123	5835	2384	151	113	6	54	55	69	28	20	19	331	11638
	88	540	2111	192	7152	2768	138	126	14	67	95	101	48	23	24	653	14052

Tab. 2.21 Traffic with third countries : EUR - INWARD tonnages

to	from	N	S	SF	CH	A	YU	TR	SU	DDR	PL	CS	H	RUM	BUL	OTHER EUROPEAN	TOTAL
D	86	55	408	35	650	907	89	16	2	267	664	99	34	4	4	1	3231
	87	51	419	39	679	1058	95	26	3	289	609	120	38	4	4	1	3431
	88	68	508	59	778	1228	105	29	2	288	640	141	41	5	1	1	3893
F	86	8	46	96	478	66	10	4	4	7	9	4	1	1	23	2	1131
	87	8	46	96	478	66	10	4	4	7	9	4	1	1	2	2	635
	88	8	46	96	478	66	10	4	4	7	9	4	1	1	2	2	635
I	86																1144
	87																
	88																
NL	86	18	224	5	188	126	56	7	72	39						1	736
	87	17	264	8	208	140	48	6	80	43							814
	88	21	303	10	236	176	51	9	96	40						153	1095
B	86				69	43	10		11	1							134
	87				110	44	10		6	3							173
	88				129	76			4	3							212
L	86				2												2
	87																
	88																
UK	86	4	78		78	23	6										120
	87	6	3		122	24	15	1	1	1							185
	88	3	14		77	24	9	2		3							154
IRL	86																7
	87					7											4
	88					2											
DK	86	162	1388	91	30	18	6	1	20	62	9	9	1	1	1	1	1799
	87	152	1320	78	27	19	6	2	3	49	60	8	12	1	1	1	1739
	88	141	1279	78	28	24	7	1	3	103	69	8	10	1	1	2	1755
GR	86				3	10	28	2	1	1		1	7	2	15	1	71
	87				2	8	42	2				1	4	3	21	1	85
	88				2	12	62	1	1	1		2	7	7	22	1	119
E	86				38	23	3										47
	87	5	57	9	39	23	3	8	5	5	6	12	2	2	1	48	170
	88				25	40	7		8	5	6	12	2	2	1	93	290
P	86				5	4											12
	87				10	6											18
	88				9	21			6								41
TOTAL (EUR-12 (-I-L))	86	235	2131	131	2059	1215	198	26	2	105	329	714	115	37	20	83	7400
	87	234	2112	125	1675	1395	229	37	10	143	358	665	140	43	26	65	7257
	88	238	2278	158	2180	1675	279	50	11	222	378	708	167	56	29	278	8707

Bilateral transport with two of the transit countries (Switzerland and Austria) is considerable particularly from D and I (not shown in tables) and F (in case of Switzerland). The low flows between F and Switzerland in 1987 are principally due to low tonnages in Group 15 (crude and manufactured minerals) often moved short distances for construction purposes.

Transport with Eastern Europe appears modest, but the table excludes D/DDR transport, about 2 mio tonnes. It should also be noted that other sources (D border surveys ; Commission Reports to the Council) indicate that vehicles registered in Eastern Europe have about 60% of the market.

Transport with other Europe includes transport to a number of small countries - Andorra, etc. Geographical proximity to a Member State influences the results greatly. Thus Andorra (and Gibraltar ?) dominate the transport of E vehicles in extra EUR-12 movements. In 1986, it appears that "Other Europe" had a wider definition for some Member States - see F, UK, E (1987 as well). The NL results for 1988 baffled the author initially, but closer examination revealed that there appeared to have been a reclassification of transport from "Other Countries" (code 84) to "Other European Countries" (code 74) in 1988.

## 2.6. Transport through the transit countries, Switzerland and Austria

### 2.6.1. Introduction

The figures presented here are those published by BDF (the German Road Haulage Federation) and are based on more detailed figures provided by the Swiss and Austrian Statistical Offices. Unfortunately the Swiss and Austrian figures for 1988 are not yet available.

### 2.6.2. Transit through Switzerland

Table 2.22. shows the development of Swiss transit traffic from 1984 to 1987 according to border point of entry to border point of departure. Total transit increased by 14.8% in 1987.

Table 2.23. examines the transit traffic crossing Switzerland between the D and I borders by both road and rail again for the period 1984 to 1987. While road transit grew faster than rail (16.0% as opposed to 6.3% in 1987), rail continued to transport 90% of the transit tonnage through Switzerland.



Tab. 2.22 Road transit traffic through Switzerland 1984-87 ('000 tonnes)

to border from border		CH / D	CH / F	CH / I	CH / A	TOTAL
D / CH	1984	9	11	283	5	308
	1985	6	14	311	3	334
	1986	7	11	373	3	394
	1987	8	13	439	4	464
F / CH	1984	11	3	68	9	91
	1985	8	5	67	8	88
	1986	7	4	96	9	116
	1987	9	4	109	9	131
I / CH	1984	341	139	0	17	497
	1985	356	147	1	23	527
	1986	429	191	1	30	651
	1987	491	201	1	35	728
A / CH	1984	1	5	14	1	21
	1985	8	7	22	5	42
	1986	2	7	32	4	45
	1987	2	8	44	6	60
TOTAL	1984	362	158	365	32	917
	1985	378	173	401	39	991
	1986	445	213	502	46	1206
	1987	510	226	593	54	1383

Tab. 2.23 Total transit traffic through Switzerland between German and Italian borders by mode ('000 tonnes)

direction		mode	Road	Rail	TOTAL
D / CH / I	1984		283	4773	5056
	1985		311	5386	5697
	1986		373	5259	5632
	1987		439	5813	6252
I / CH / D	1984		341	2459	2800
	1985		356	2276	2632
	1986		429	2242	2671
	1987		491	2162	2653
TOTAL	1984		624	7232	7856
	1985		667	7662	8329
	1986		802	7501	8303
	1987		930	7975	8905

Difference 87/86	+16.0%	+6.3%	+7.3%
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Modal split 1987	10%	90%
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### 2.6.3. Transit through Austria

Whereas Swiss transit traffic is almost entirely "Intra EUR-12", Austria transit traffic has a considerable proportion of "Extra EUR-12" movements ; the details are shown in Table 2.24. Total transit increased by 7.2% in 1987.

Table 2.25. shows that road traffic between the D and I borders increased by 8.5% in 1987 (as compared to 2.9% by rail) so that road has almost an 80% share of the Austrian transit traffic ; a complete contrast with the Swiss situation.

Tab. 2.24 Road transit traffic through Austria 1984-87 ('000 tonnes)

to border from border		A / D	A / I	A / CH	A / YU + H + CS	TOTAL
D / A	1984	8	7375	425	1460	9268
	1985	2	7988	464	1460	9914
	1986	1	8319	596	1466	10382
	1987	1	8976	632	1356	10965
I / A	1984	6707	2	82	65	6856
	1985	6736	0	77	62	6875
	1986	7246	0	75	72	7393
	1987	7916	0	88	110	8114
CH / A	1984	127	10	5	25	167
	1985	132	8	8	24	172
	1986	165	9	8	22	204
	1987	185	11	0	22	218
YU + H + CS / A	1984	1643	155	35	189	2022
	1985	1734	128	29	172	2063
	1986	1693	147	40	297	2177
	1987	1720	204	41	337	2302
TOTAL	1984	8485	7542	547	1739	18313
	1985	8604	8124	578	1718	19024
	1986	9105	8475	719	1857	20156
	1987	9822	9191	761	1825	21599

Tab. 2.25 Total transit traffic through Austria between German and Italian borders by mode ('000 tonnes)

mode		Road	Rail	TOTAL
D / A / I	1984	7376	3058	10434
	1985	7988	3161	11149
	1986	8319	2886	11205
	1987	8976	3015	11991
I / A / D	1984	6707	1350	8057
	1985	6736	1327	8063
	1986	7246	1426	8672
	1987	7916	1423	9339
TOTAL	1984	14083	4408	18491
	1985	14724	4488	19212
	1986	15565	4312	19877
	1987	16892	4438	21330

Difference 87/86	+8.5%	+2.9%	+7.3%
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Modal split 1987	79%	21%
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## 2.7. Supply and Utilisation

### 2.7.1. Introduction

Information on supply in the road haulage sector has not been presented previously in the Annual Report, partly because earlier reports have concentrated on international transport where the concept of supply is even harder to define. However, as in other transport sectors, a balance between supply and demand is necessary for a "healthy" market.

### 2.7.2. Number of road goods vehicles

Information on the number of goods vehicles is published by a number of international organisations IRF (up to 1988), UN (up to 1987) ECMT (up to 1986) and SOEC (up to 1986) are published at the time of writing. The figures in these different publications differ considerably; this is mainly due to the difficulty of separating consistently (or separating at all) lorries and vans, and since the number of small vans in some Member States is very high, e.g. F. Uncritical use of this information can be extremely misleading –for this reason it is preferable to use loading capacity (see 2.7.3)– but here the information is less complete (and not published by IRF or ECMT at all). For the combined reasons of completeness and timeliness, the UN source is chosen here, the figures are from the 1988 publication which will appear shortly.

Table 26 shows the number of lorries, tractors, semi-trailers and trailers registered in each of the Member States, 1988 where possible, but 5 M.S. show only (up to) 1987 and 1 only (up to) 1985; it should also be noted that only 8 Member States have information on trailers and semi-trailers and, in the case of P, information on trailers and semi-trailers cannot be distinguished, and in the case of IRL, information on lorries, trailers and semi-trailers cannot be distinguished.

Table 26 Stock of goods vehicles  
numbers (000's)

Nationality of vehicle	Year	Lorries	Tractors	Semi-Trailers	Trailers
D	1988	1322	361	86	292
F	1988	3322	151	121	25
I	1985	1788	39	-	-
NL	1988	468	32	-	-
B	1988	270	23	45	43
L	1987	10	5	-	-
UK	1988	2004	218	-	-
IRL	1987	111	66	-*	-*
DK	1987	279	14	14	256
GR	1987	647	1	4	5
E	1988	1976	54	68	11
P	1987	366	7	-->	8

SOURCE UN (ABTS) Table 13.

\* Included with lorries

### 2.7.3 Carrying capacity of road goods vehicles

Carrying capacity is a more useful criterion of supply and overcomes the difficulties with large numbers of small vans (mentioned above). Unfortunately no information (from the UN source) is available for carrying capacity for I, NL, L, IRL, or E for 1987 or 1988, while the information for UK is limited to lorries; NL data is available for 1985 and E data for 1984, these are shown in brackets. The available data (from the UN Source) is shown in Table 27. In the final column the tonnage carrying capacity per person (in the population) has been calculated; this, of course, ignores the fact that the proportion of trailers/semi-trailers varies between Member States. However, with this proviso, it can be seen that Member States with data for 1987 or 1988 divide into 3 groups

Tonnage capacity per person	M.S.
0.20 - 0.21	B, DK
0.125 - 0.135	D, F, GR
0.09 - 0.10	P

indicating that B and DK have a much more substantial road haulage capacity than would be expected from the size of their population.

Table 27

Stock of goods vehicles  
carrying capacity (000 tonnes)

Nationality of vehicle	Year	Lorries	Semi-Trailers	Trailers	Total (per person)
D	1988	3921	1952	2072	7945 0.129
F	1988	4215	2889	309	7413 0.133
I	-	-	-	-	-
NL	(1985)	(885)	(784)	(335)	(2004)(0.139)
B	1988	770	1095	161	2025 0.205
L	-	-	-	-	-
UK	1988	3860	-	-	-
IRL	-	-	-	-	-
DK	1987	534	298	228	1060 0.207
GR	1987	1115	93	95	1303 0.130
E	(1984)	(3274)	(1114)	(84)	(4472)(0.117)
P	1987	866	-->	113	979 0.095

SOURCE UN (ABTS) Table 13, Figures prior to 1987 in ( )

#### 2.7.4 Utilisation

Finally, for those M.S. for which a carrying capacity can be calculated, as per Table 27, a comparison can be made between the total t-km performed (Intra-EEC) with the total carrying capacity -this ignores extra-EEC t-km, but this is relatively small. The results, shown in Table 28, indicate a range from 11.0 (P) to 16.9 (D) for M.S. with information for 1987 or 1988 in thousand t-km per tonne carrying capacity, and somewhat higher figures for NL for 1985 and E for 1984. It should be noted that this is not t-km per vehicle since it ignores both empty running and partial loads.

Table 28 : Utilisation

		(mio)	(000)	(000)
Nationality of vehicle	Year	Total t-km (intra-EEC)	Total carrying capacity	t-km per tonne carrying capacity
D	1988	133934	7945	16.9
F	1988	122984	7413	16.6
I	-	-	-	-
NL	(1985)	(36432)	(2004)	(18.2)
B	1988	29500	2025	14.6
L	-	-	-	-
UK	-	-	-	-
IRL	-	-	-	-
DK	1987	13510	1060	12.7
GR	1987	15072	1303	11.6
E	(1984)	(82809e)	(4472)	(18.5)
P	1987	10741e	979	11.0

Figures prior to 1987 in ( ).

## 2.8 Cost and price indices

### 2.8.1 Cost indices

In the following tables, the results are presented of the cost analysis in road haulage firms from D, F, NL, B/L, UK and DK. The tables show the evolution of the total costs and the two main elements of the total costs, namely fuel costs and wages. With a view to simplification, only the indices per January 1st of each year are shown. Half-yearly cost indices are also available, but for these we refer to our more detailed quarterly Market Development reports.

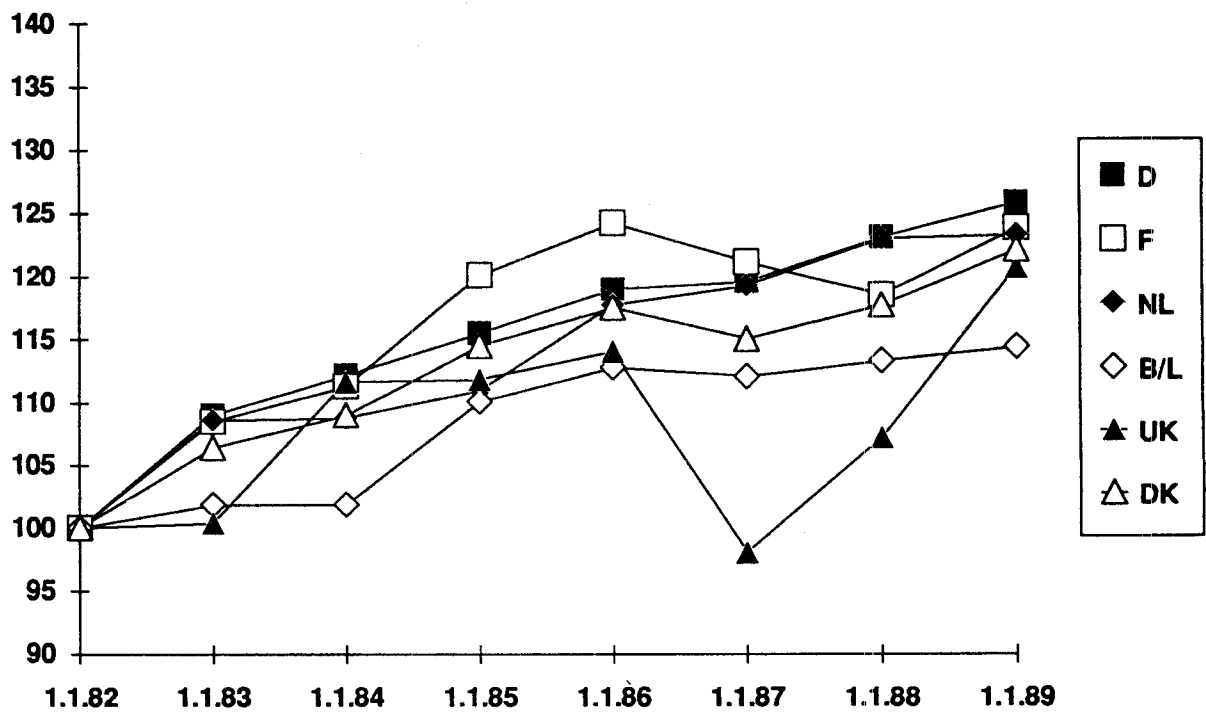
The total costs in ECU show an average yearly increase of 2.9% (from 1.1.1982 up to 1.1.1989, all above-mentioned countries combined); fuel costs, on average, show a yearly decrease of 2.1% and wages, on average, have risen by 4.6% per year. While labour costs have continuously increased during the period considered, fuel costs have first risen up to 1.1.1985, after which a very significant fall in fuel prices was observed (from 1.1.1985 up to 1.1.1988, fuel costs in ECU, in total, decreased by 27%). However, fuels costs have risen again between 1.1.1988 and 1989 (on average by 4,1%). The different evolution of labour costs and fuel costs (combined with the evolution of other cost factors) has resulted in a significant increase of the total costs from 1.1.1982 up to 1.1.1986 (yearly average: +4.1%), a decrease in 1986 (-2.1%) and again an increase in 1987 (+2.4%) and 1988 (+2,9%).

When comparing the figures per country in ECU with those based on DM, HFL, DKR, etc., we observe some important differences, due to the changing exchange rates of the currencies during the period considered. The total costs of D hauliers, for instance, has risen, on average, by 3.4% yearly in ECU, but only by 1.0% yearly in DM! In ECU, the total costs increases registered in D, DK, F,NL and UK are quite similar, between 3.1% and 3.4% per year ; B/L hauliers' costs have only increased, on average, by 2.0% yearly. In national currencies the most important increases are noted in F and in the UK (+4.9% and +4.8% on average, per year). On the contrary, D and NL hauliers' costs in national currencies have only increased by 1.0% and 1.1%. The DK and B/L hauliers' costs have, on average, risen by a percentage situated between these F-UK and D-NL extremes.

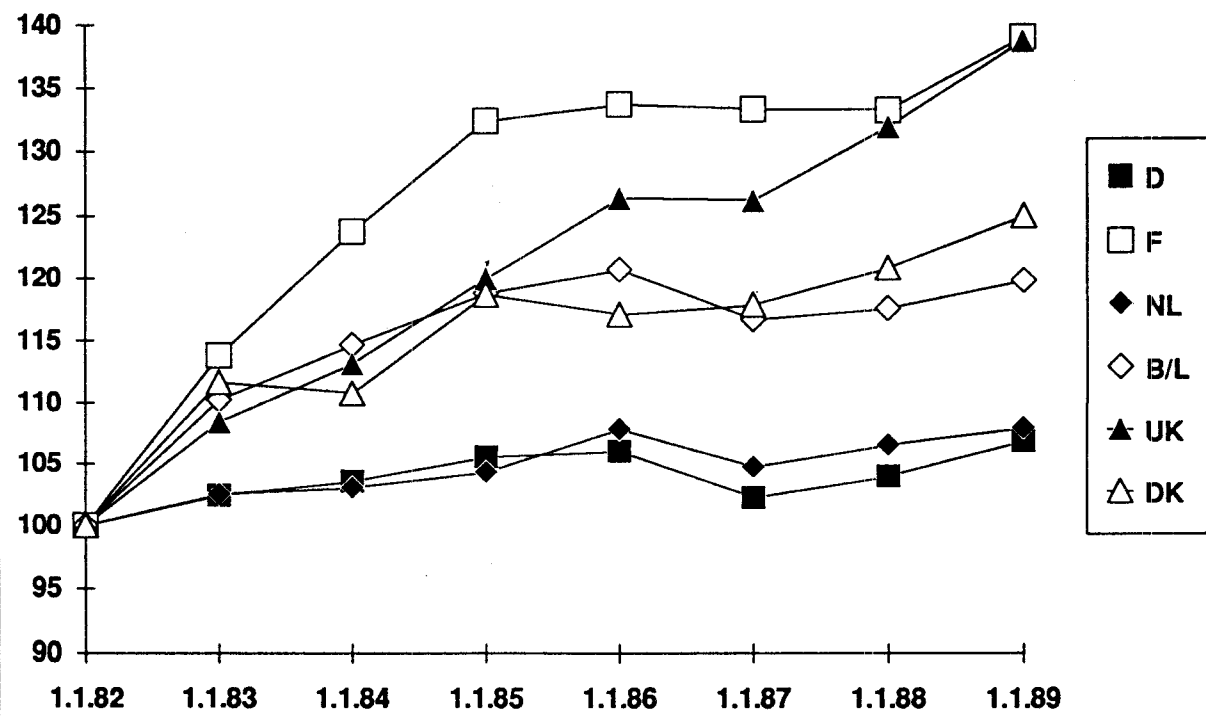
The comparative evolution of total costs is shown in graphs 2.1 and 2.2. For a detailed comparison between fuel costs and labour costs evolution, see tables 2.29 and 2.30.

The data on costs, collected until now through the market observation system, only allow for a study of the evolution of these costs, and are not meant to compare absolute cost levels in road haulage firms of different nationalities.

**Fig. 2.1 Evolution of total cost indices per nationality of haulier, in ECU**



**Fig. 2.2 Evolution of total cost indices in national currencies**



**Table 2. 29** Yearly evolution of total costs, fuel costs and wages per nationality of hauliers, in ECU

Total costs in ECU

	D	F	NL	B/L	UK	DK	All c.
1.1.1982	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1983	109.0	108.5	108.6	101.8	100.4	110.2	106.4
1.1.1984	112.2	111.3	108.8	101.8	111.7	108.2	109.0
1.1.1985	115.5	120.1	111.0	110.1	111.9	118.4	114.5
1.1.1986	119.0	124.2	117.7	112.8	114.1	117.1	117.5
1.1.1987	119.6	121.1	119.3	112.1	98.0	119.7	115.0
1.1.1988	123.1	118.5	123.0	113.3	107.2	121.3	117.7
1.1.1989	125.8	123.8	123.3	114.4	120.7	124.3	122.1
1.1.1988	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1989	102.2	104.5	100.2	101.0	112.6	102.5	103.7
Avg.	+3.4	+3.2	+3.1	+2.0	+3.1	+3.2	+2.9

Fuel costs in ECU

	D	F	NL	B/L	UK	DK	All c.
1.1.1982	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1983	105.5	111.8	105.3	104.6	103.3	116.6	107.9
1.1.1984	102.5	106.6	103.3	101.2	109.3	104.2	104.5
1.1.1985	109.7	118.7	99.5	105.5	114.8	111.5	110.0
1.1.1986	105.2	114.0	98.2	102.1	121.7	102.1	107.2
1.1.1987	77.7	101.3	74.8	73.8	107.2	86.0	86.8
1.1.1988	82.8	89.8	74.2	73.1	88.9	73.2	80.3
1.1.1989	81.5	97.9	75.7	73.0	96.0	77.5	83.6
1.1.1988	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1989	98.4	109.0	102.0	99.9	108.0	105.9	104.1
Avg.	-2.2	+0.2	-3.5	-3.8	-0.1	-2.9	-2.1

Wages in ECU

	D	F	NL	B/L	UK	DK	All c.
1.1.1982	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1983	111.0	110.0	111.8	99.7	98.7	109.0	106.7
1.1.1984	116.5	116.8	112.0	100.3	109.9	107.9	110.6
1.1.1985	121.0	124.3	115.3	111.7	109.2	117.9	116.6
1.1.1986	127.4	136.5	125.8	114.9	111.7	119.0	122.6
1.1.1987	137.6	137.1	135.6	121.5	101.5	123.9	126.2
1.1.1988	143.5	139.2	141.9	124.1	111.7	134.7	132.5
1.1.1989	147.1	143.6	140.9	125.0	126.1	138.3	136.8
1.1.1988	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1989	102.5	103.2	99.3	100.7	112.9	102.7	103.3
Avg.	+5.7	+5.4	+5.1	+3.3	+3.6	+4.8	+4.6

All c.= all countries combined (arithmetical average)  
 Avg.=average yearly evolution 1.1.1982-1.1.1989



**Table 2.30** Yearly evolution of total costs, fuel costs and wages per nationality of hauliers, in national currencies

Total costs in national currencies

	D	F	NL	B/L	UK	DK	All c.
1.1.1982	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1983	102.4	113.8	102.5	110.2	108.4	111.6	108.2
1.1.1984	103.5	123.7	103.0	114.6	113.1	110.7	111.4
1.1.1985	105.5	132.3	104.3	118.7	119.9	118.6	116.6
1.1.1986	106.0	133.6	107.8	120.6	126.3	117.0	118.6
1.1.1987	102.2	133.2	104.7	116.6	126.1	117.8	116.8
1.1.1988	103.9	133.1	106.5	117.5	131.8	120.7	118.9
1.1.1989	106.8	138.9	107.9	119.7	138.6	124.9	122.8
1.1.1988	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1989	102.8	104.4	101.3	101.9	105.2	103.5	103.3
Avg.	+1.0	+4.9	+1.1	+2.7	+4.8	+3.3	+3.0

Fuel costs in national currencies

	D	F	NL	B/L	UK	DK	All c.
1.1.1982	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1983	99.1	117.2	99.4	113.3	111.5	118.0	109.8
1.1.1984	94.6	118.5	97.8	113.9	110.7	106.6	107.0
1.1.1985	100.2	130.6	93.5	113.8	123.1	111.7	112.2
1.1.1986	93.7	122.6	90.0	109.2	134.7	102.0	108.7
1.1.1987	66.1	111.5	65.6	76.8	107.0	84.7	85.3
1.1.1988	69.9	100.9	64.2	75.8	109.2	72.8	82.1
1.1.1989	69.2	109.8	66.5	76.3	110.2	77.9	84.9
1.1.1988	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1989	99.0	108.8	103.1	100.7	100.9	107.0	103.4
Avg.	-4.4	+1.8	-5.2	-2.9	+2.0	-2.8	-1.8

Wages in national currencies

	D	F	NL	B/L	UK	DK	All c.
1.1.1982	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1983	104.3	115.3	105.5	107.9	106.6	110.3	108.3
1.1.1984	107.6	129.8	106.0	113.0	111.4	110.3	113.0
1.1.1985	110.5	136.8	108.4	120.4	117.0	118.1	118.5
1.1.1986	113.5	146.8	115.3	122.9	123.6	118.9	123.5
1.1.1987	117.1	150.8	119.0	126.4	130.6	122.0	127.7
1.1.1988	121.0	156.4	122.8	128.7	137.3	134.0	133.4
1.1.1989	125.0	161.1	123.2	130.8	144.9	138.9	137.3
1.1.1988	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1.1989	103.3	103.0	100.3	101.6	105.5	103.7	103.0
Avg.	+3.2	+7.1	+3.0	+3.9	+5.4	+4.9	+4.6

All c.= all countries combined (arithmetical average)  
 Avg.=average yearly evolution 1.1.1982-1.1.1989

## 2.8.2 Price Indices

The results of the quarterly price surveys, carried out in D, F, I, NL, B/L and GR cannot be discussed in detail in this annual report, due to the wealth of information that has been generated and for which we refer to the respective tables in the latest "Market Developments" report.

However, when considering all data collected since 1982 for D, F, I, NL and B/L, a general pattern of road price evolution can be obtained by calculating a series of yearly average price indices per country:

**Table 2.31:** Yearly evolution of average price indices per country and per nationality of hauliers, in ECU (transport to and from each country combined)

	D		F		I		NL		B/L		All c.
	own h.	for.h.	own h.	for.h.	own h.	for.h.	own h.	for.h.	own h.	for.h.	all h.
1982	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1983	105.5	101.0	103.2	104.3	97.7	105.3	103.1	102.9	106.7	102.6	103.2
1984	108.9	106.1	107.6	105.7	105.9	108.3	104.2	106.8	105.3	105.3	106.4
1985	111.2	107.2	112.5	108.1	105.8	111.7	105.1	109.7	109.4	108.2	108.9
1986	117.4	109.8	114.0	111.0	106.4	116.0	109.1	112.8	113.0	112.0	112.2
1987	122.7	110.6	112.6	113.7	106.3	118.3	110.3	111.0	114.3	113.2	113.3
1988	122.0	110.9	109.8	117.2	115.0	117.6	108.7	114.4	117.8	112.4	114.6
1987	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1988	99.5	100.3	97.5	103.1	108.2	99.4	98.6	103.1	103.1	99.2	101.1
Avg.	+3.4	+1.7	+1.6	+2.7	+2.4	+2.8	+1.4	+2.3	+2.8	+2.0	+2.3

N.B. - All figures obtained by comparing the available quarterly indices with the indices of the corresponding quarters of 1982, then averaged in order to obtain yearly figures and weighted according to the relative importance of all relations considered.

- Italy; for 1987, only two figures are available (third and fourth quarter), considered representative for the whole year.
- own h.= own hauliers (own nationality)
- for. h.= foreign hauliers (all other nationalities combined)
- all c.= all countries combined
- all h.= all hauliers combined
- Avg.= average yearly evolution 1982-1988

During the period 1982-1988, road transport prices in ECU have, on average, increased by 2.3% yearly. From 1982 to 1986 the average increase amounted to 2.9% per year; whereas the 1987 and 1988 figures showed only moderate increases of 1.3% and 1.1% in comparison with the previous year (1). Most probably, the limited increase of transport prices in 1987 and 1988 in comparison with the yearly increases observed during the preceding years, is related to the decrease of total costs in 1986 and the relatively moderate increase of the costs in 1987 and 1988 (see previous sub-section).

When comparing the price indices per nationality of hauliers (in ECU), it is clear that prices quoted by D hauliers have risen most during the period considered (1982-1988): the average increase amounts to 3.4% per year. The NL hauliers' prices have, on the contrary, risen much less: their average increase amounts to only 1.4% per year.

The other hauliers' prices have, on average, increased by a rate situated between these D and NL extremes.

It is interesting to compare the evolution of the prices in ECU quoted by own and foreign hauliers for transport to and from the respective countries. It is clear that D and B/L hauliers' prices have risen more than their competitors' prices for transport to and from their respective countries. On the opposite, NL, F and I hauliers' prices have risen less than those of their direct competitors.

The most significant deviation of the price evolution has taken place for transport to and from D, where the own hauliers' prices in ECU have, on average, risen twice as fast as their direct competitors' prices ! This could be an indication of the strong position the D hauliers had in the market, given the relative stability of the overall share of international traffic to and from D, held by D hauliers at least up till 1986.

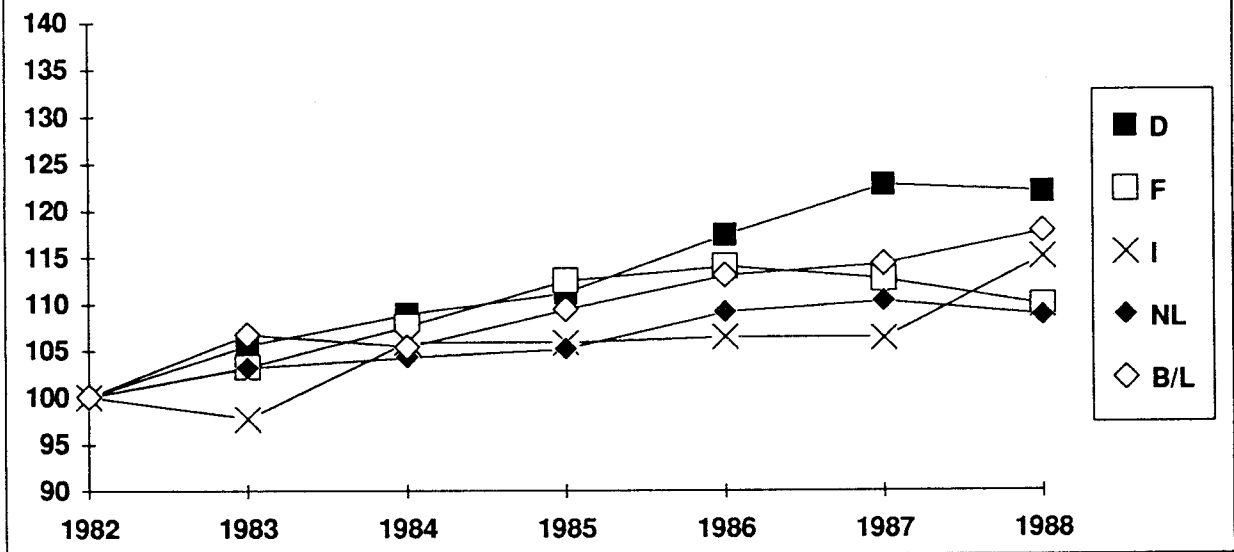
A comparison of the indices in ECU, shown above, with the indices based on prices in national currencies, as shown in table 2.32, can be clarifying. With regard to D hauliers, for example, we learn that they still succeed in raising their prices in DM on average by 1.1% per year during the period 1982-1988, notwithstanding the rising value of the DM. On the other hand, it is equally remarkable that NL hauliers have, on average, not increased their prices in HFL during the period concerned, possibly in order not to compromise their market position, taking account of the increasing value of the HFL. It should be noted that NL hauliers have, probably as a result, succeeded in increasing their already very large market share in international transport during the period considered.

The evolution of price indices, both in ECU and national currencies is shown in figs. 2.3 and 2.4 respectively.

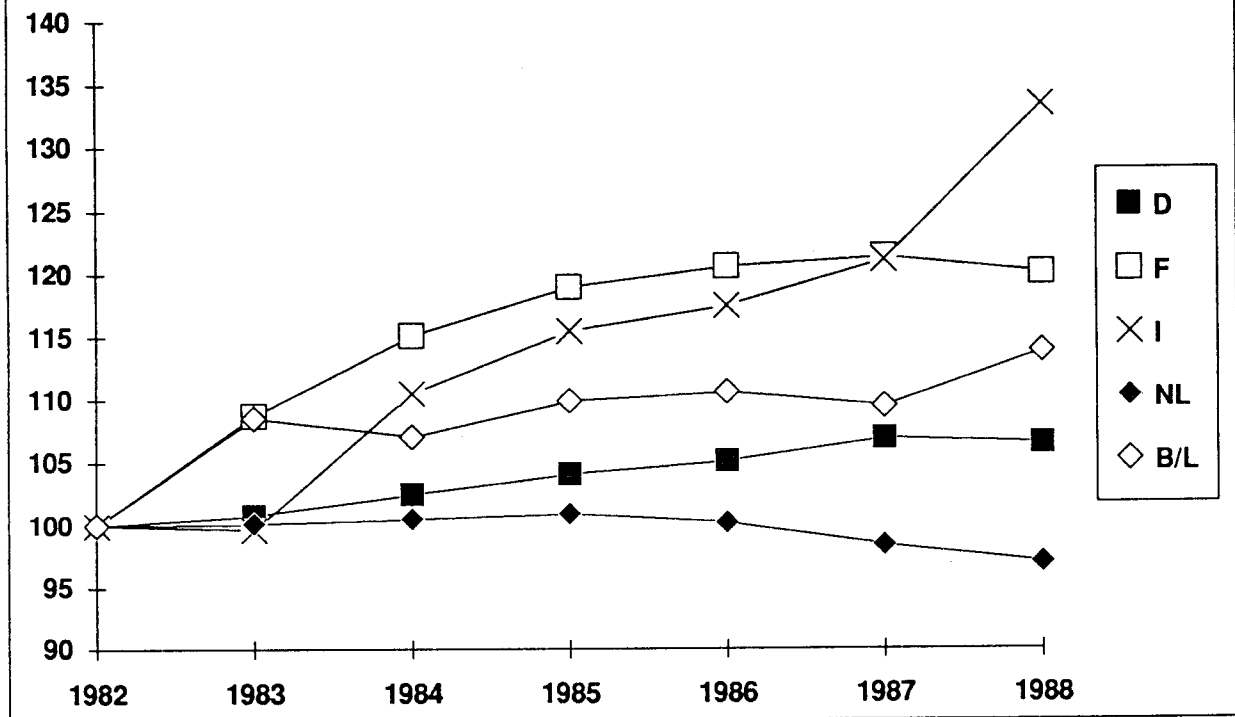
Note: it should be emphasized that the data on prices, collected until now through market observation system, only allow for a study of the evolution of the prices, and are not meant to compare absolute levels of prices quoted by road haulage firms of different nationalities.

(1) All general average figures are related only to transport to/from D, F, NL and B/L, performed by hauliers of all these countries.

**Fig.2.3 Evolution of average price indices per nationality of haulier, in ECU**



**Fig. 2.4 Evolution of average price indices in national currencies**



**Table 2.32** Yearly evolution of average price indices per nationality of hauliers, in national currencies (transport to and from each country combined)

	D	F	I	NL	B/L	all c.
	own h.	own h.	own h.	own h.	own h.	all h.
1982	100.0	100.0	100.0	100.0	100.0	100.0
1983	100.8	108.7	99.6	100.1	108.5	103.5
1984	102.5	115.1	110.5	100.5	107.0	107.1
1985	104.1	119.0	115.5	100.9	109.9	109.9
1986	105.1	120.6	117.5	100.2	110.6	110.8
1987	106.9	121.4	121.1	98.4	109.5	111.5
1988	106.5	120.1	133.4	97.0	113.9	114.2
1987	100.0	100.0	100.0	100.0	100.0	100.0
1988	99.6	98.9	110.1	98.6	104.0	102.4
Avg.	+1.1	+3.1	+5.0	-0.5	+2.2	+2.2

### 2.8.3 Comparison of cost and price evolution

For D, F, NL and B/L, both cost and price indices are available, so that a comparison of the two series of data is possible. For this we refer to figure 2.5.


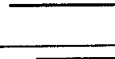
In ECU, hauliers from D have apparently succeeded in keeping the evolution of their prices more or less in line with the evolution of the total costs.

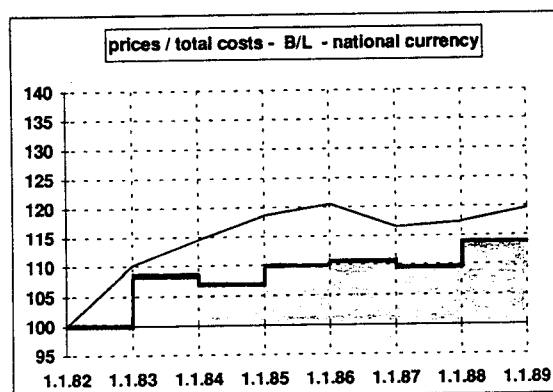
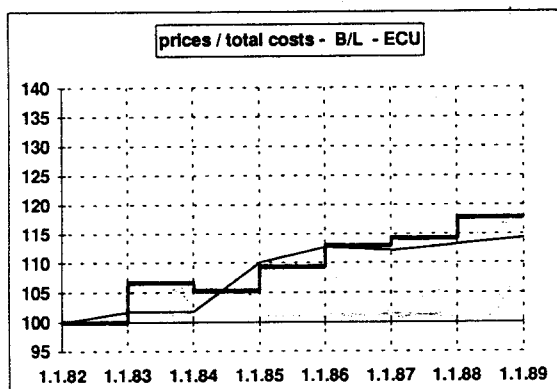
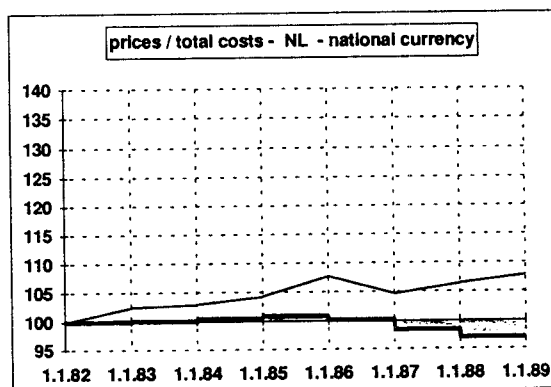
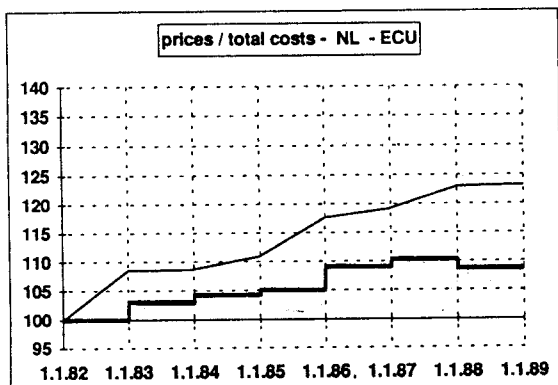
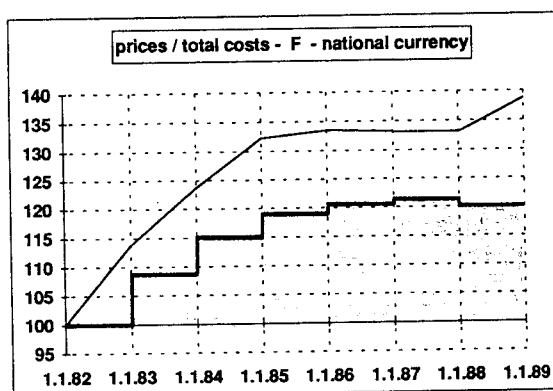
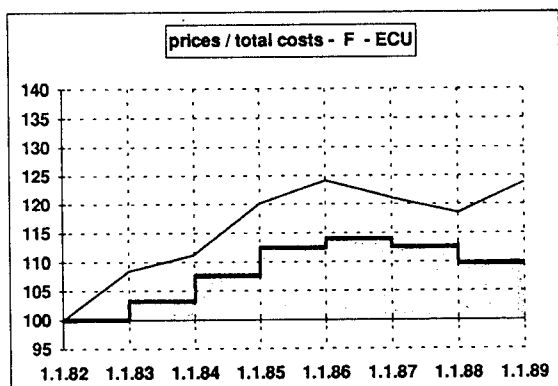
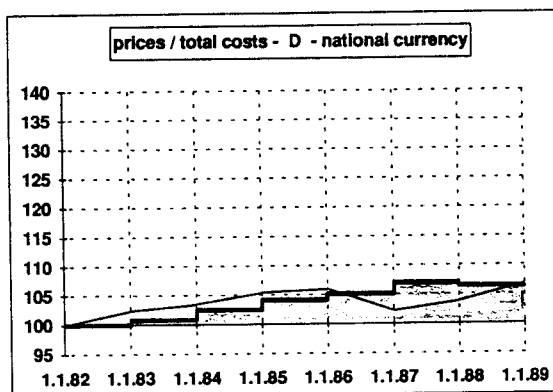
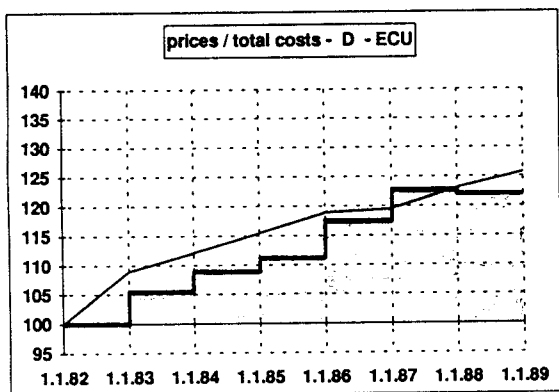
It may be more appropriate to study the graphs representing the indices in national currencies. Here we see that only D hauliers have succeeded to keep their price evolution in line with the total costs evolution. On the contrary, F, NL and B/L hauliers' prices have not followed the evolution of the total costs, which rose far more rapidly than prices from 1.1.1982 to 1.1.1986. The total costs decrease in 1986, followed by a moderate rise during 1987 and 1988 has, in general, been accompanied by a stagnation of the prices.

One wonders if F, NL and B/L hauliers have witnessed a serious decline of their overall profitability, because of the fact that prices have not evolved in the same way as total costs. It should be emphasized, however, that such a conclusion cannot be drawn as the Market Observation System does not provide us with detailed indications relative to the evolution of productivity in the road haulage industry (1). It falls outside the scope of this report to study the relative national transport statistics that are available in some countries and that could give an idea of productivity changes within the transport sector during the period concerned.

(1) The only indication about productivity that is provided by the Market Observation System is obtained through the transport inquiry surveys, when the opinion of the hauliers is asked about the utilization of their rolling stock. However, the data obtained in this way are too general to allow detailed conclusions to be made on the evolution of productivity levels in the road haulage industry.

Fig. 2.5 Evolution of average price indices and total costs indices per nationality of haulier, in ECU and in national currencies.

 = price indices (1982 = 100)  
 = total costs indices (1.1.82 = 100)



## 2.9 TRANSPORT INQUIRY SURVEYS - ROAD

The main aim of the quarterly surveys among road hauliers is to collect, within the shortest time possible, information about the changes that are at work in road transport (EUR-10, border-crossing transport, E and P not being included in the system).

Unlike real statistical figures, the ones obtained through these surveys merely reflect opinions and only indicate a trend. In this annual report, we have considered the survey results obtained from 1982 up to 1988 whereby a simplification has been introduced by calculating a yearly average figure, based on the detailed quarterly data which are published in the Market Developments reports. (1)

### 2.9.1 Utilization of rolling stock

#### Average balance of opinions on the utilization of rolling stock

(figures represent the difference between the % of hauliers indicating a "good or very good" utilization and the % of those indicating a "poor" utilization of their vehicles; all figures are averages, based on the quarterly survey results)

Tab. 2.33

	1982	1983	1984	1985	1986	1987	1988
D	1	10	16	23	22	14	18
F	-1	-5	-3	4	11	17	32
I	-11	-1	-4	-4	11	20	27
NL	34	49	69	59	63	43	43
B	31	45	50	49	43	39	54
L	12	32	36	57	70	63	81
UK	51	55	66	58	73	N	17
IRL	11	37	31	43	43	42	45
DK	40	42	44	38	25	14	8
GR	-29	-9	7	3	-19	-6	-10
EUR-10	14	20	25	26	26	21	25

#### Notes :

(1) Remark concerning the figures of 1987 :

Due to an interruption in the collection of data during the first quarter of 1987, the average figures for this year are based on the three last quarters; furthermore, as no data are available for the second quarter of 1987 for I, IRL and DK, the averages for these countries are based on the last two quarters only.

N = no data available.

The higher the figures are, the better the hauliers consider the utilization of their rolling stock. We see that, on the whole, the Benelux countries and the UK + IRL show the highest utilization indications. It must be emphasized, that negative average figures are only observed for F (between 1982 and 1984), I (between 1982 and 1985) and GR (during 1982/1983 and

between 1986 and 1988), meaning that only for these nationalities of hauliers and during those periods the number of hauliers indicating a "poor" utilization was higher than those indicating a "good or very good" utilization. All other countries than those mentioned show a continuous series of positive average figures during the period observed.

The general impression is that the figures translate a growing utilization level from 1982 up to 1984, after which a period of stabilization set in, interrupted by a short deterioration in 1987. Only F, I and L hauliers are clearly indicating a growing utilization level after 1984.

It should be noted that the 1987 figures, which show a decline in vehicle utilization, are based on data related to only three (for I, IRL and DK two) quarters (see remark at the beginning of section 2.9).

One wonders what the reason is for the stabilization of the rather high utilization level, as the road haulage industry increased its t-km performance and has continued to expand its share in the total transport market after 1984. It is, of course, possible that the European vehicle fleet expanded too quickly during recent years, and that hauliers are now experiencing difficulties in using their newly-created capacity in an efficient way, due to the harsh competition in the European transport market. It could also be an indication of the negative influence on the vehicle utilization through external factors such as longer delays at frontiers, delays through more severe controls, etc., experienced after 1984.

## 2.9.2. Recruitment of drivers

### Average % of firms having recruited drivers

(figures are averages based on quarterly survey results)

Table 2.34

	1982	1983	1984	1985	1986	1987	1988
D	4	6	6	8	7	7	7
F	4	4	6	5	6	7	10
I	20	20	17	19	24	24	29
NL	16	19	28	38	36	41	45
B	20	19	23	28	27	31	33
L	27	37	29	50	48	52	62
UK	20	23	25	30	31	N	53
IRL	15	22	31	33	35	29	28
DK	13	13	19	28	24	17	18
GB	26	25	22	22	22	23	27
EUR-10	13	14	16	20	21	19	26



The figures indicate a general rise of the recruitment level during the seven-year period considered (interrupted only by a small decrease in 1987).

Only the D, IRL and DK survey results show a status quo or a decrease of the number of recruiting firms during the most recent years. Obviously, the most significant increases overall are observed in the Benelux countries and in the UK.

It should be emphasized that these data concern all recruitments ("replacement" and "extension" recruitments combined).

As the "replacement" recruitments are likely to be much higher in large haulage firms than in smaller firms, a comparison between the absolute recruitment levels of the different countries would only be meaningful if the data could be related to the size of the vehicle fleets of the firms in the survey samples ; such a detailed study does not fall within the scope of this annual report.

N = no data available.

### 2.9.3. Liquidity problems

#### Average % of firms with liquidity problems

(figures are averages based on quarterly survey results)

Table 2.35

	1982	1983	1984	1985	1986	1987	1988
D	45	27	20	19	21	15	15
F	60	62	55	57	43	34	39
I	72	71	66	59	54	43	38
NL	13	7	4	4	3	2	1
B	29	24	18	20	13	13	14
L	44	19	32	11	3	1	5
UK	52	44	41	31	24	N	28
IRL	56	50	40	41	40	45	31
DK	26	16	10	8	10	21	66
GR	79	71	59	56	62	61	52
EUR-10	50	47	42	41	33	28	35

The figures clearly show an overall decline of the number of firms indicating liquidity problems during the period 1982-1987. In 1988 however, the number of firms with such problems has increased.

DK hauliers showed already increasing liquidity problems from 1986 on.

Hauliers from the Benelux countries and D hauliers apparently suffer less from liquidity problems than hauliers from other nationalities.

N = no data available.

#### 2.9.4. Investments

##### Average % of firms having made investments

(figures are averages based on quarterly survey results)

Table 2.36

	1982	1983	1984	1985	1986	1987	1988
D	32	42	40	38	47	47	45
F	36	30	32	30	34	38	37
I	23	25	28	29	33	39	43
NL	44	44	58	55	57	56	58
B	35	43	41	43	45	49	49
L	33	36	39	48	53	70	70
UK	61	62	71	69	45	N	86
IRL	23	36	46	46	39	44	58
DK	41	50	54	56	53	47	43
GR	32	37	34	30	33	39	37
EUR-10	35	36	38	37	41	43	44

The figures indicate an overall increase in the rate of investments during the seven-year period considered (interrupted only by a small decrease in 1985). Only the DK survey results show a clearly decreasing number of firms investing during the most recent years (period 1986-1988).

The data include all investments (replacement and extension investments of all kinds combined). As the replacement investments in vehicles are likely to be much higher in large firms than in smaller firms, a comparison between countries would only be meaningful if the data could be related to the size of the vehicle fleets of the firms in the survey samples; such a detailed study does not fall within the scope of this annual report.

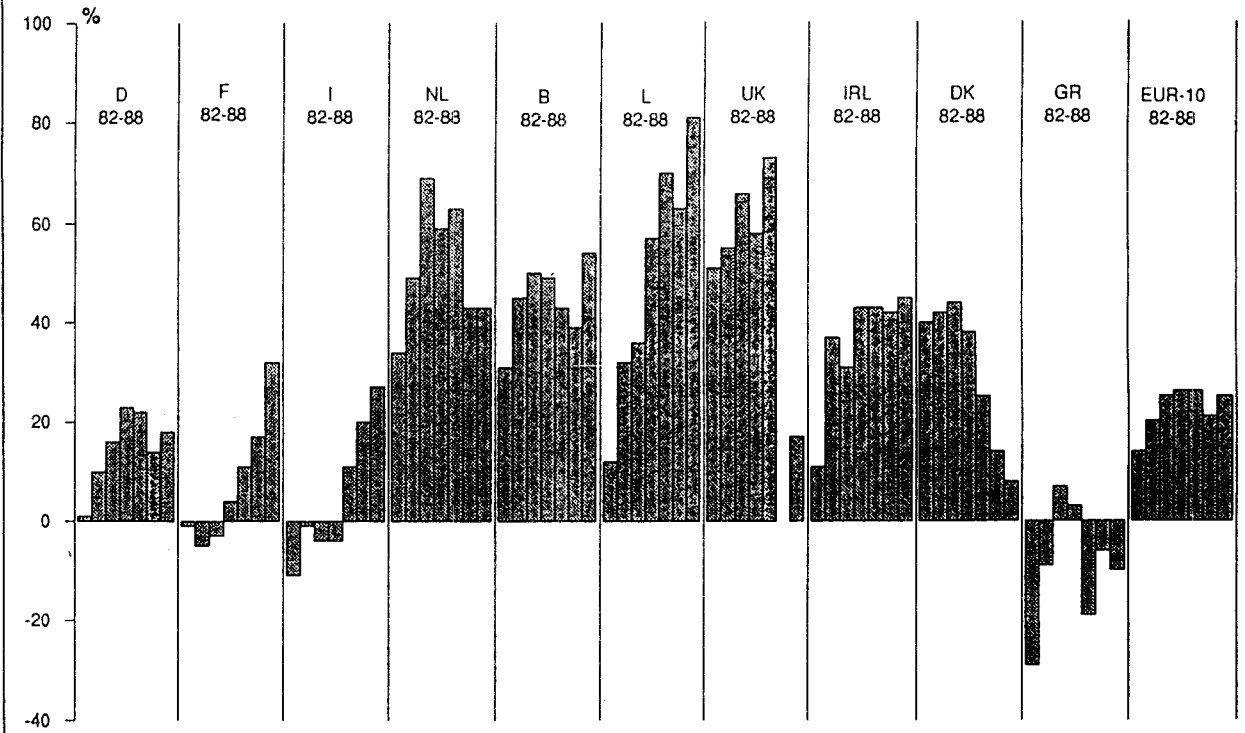
N = no data available.

##### Summary

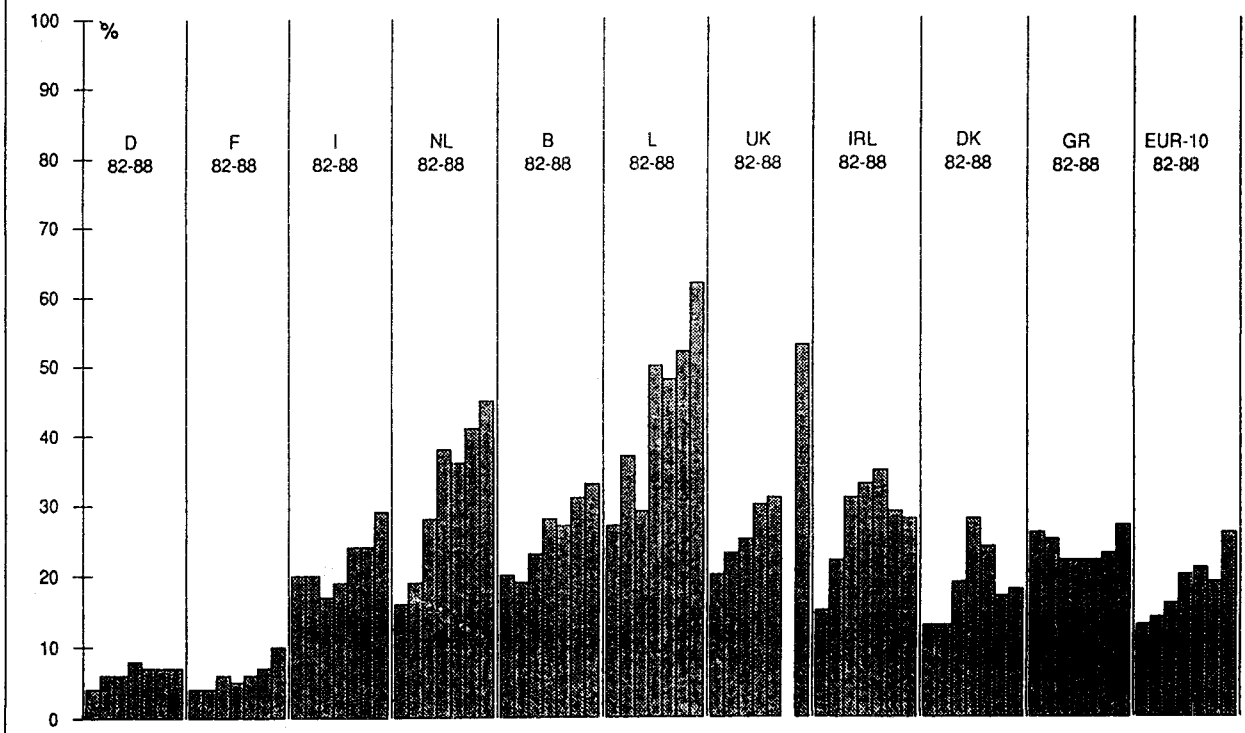
During the period 1982-1988, in general, the liquidity situation in the road haulage industry has improved and the number of recruitments and investments has increased. The only disturbing note is the apparent lack of growth of the degree of utilization of the European vehicle fleet after 1984, which might be an opinion, biased by some external factors affecting the use of the vehicles (e.g. delays at frontiers). However, it might also be an indication of the real difficulties the hauliers are experiencing in using their expanded vehicle fleets in an efficient way, considering the harsh competition in the market.

The general trends are summarized by the following graphs :

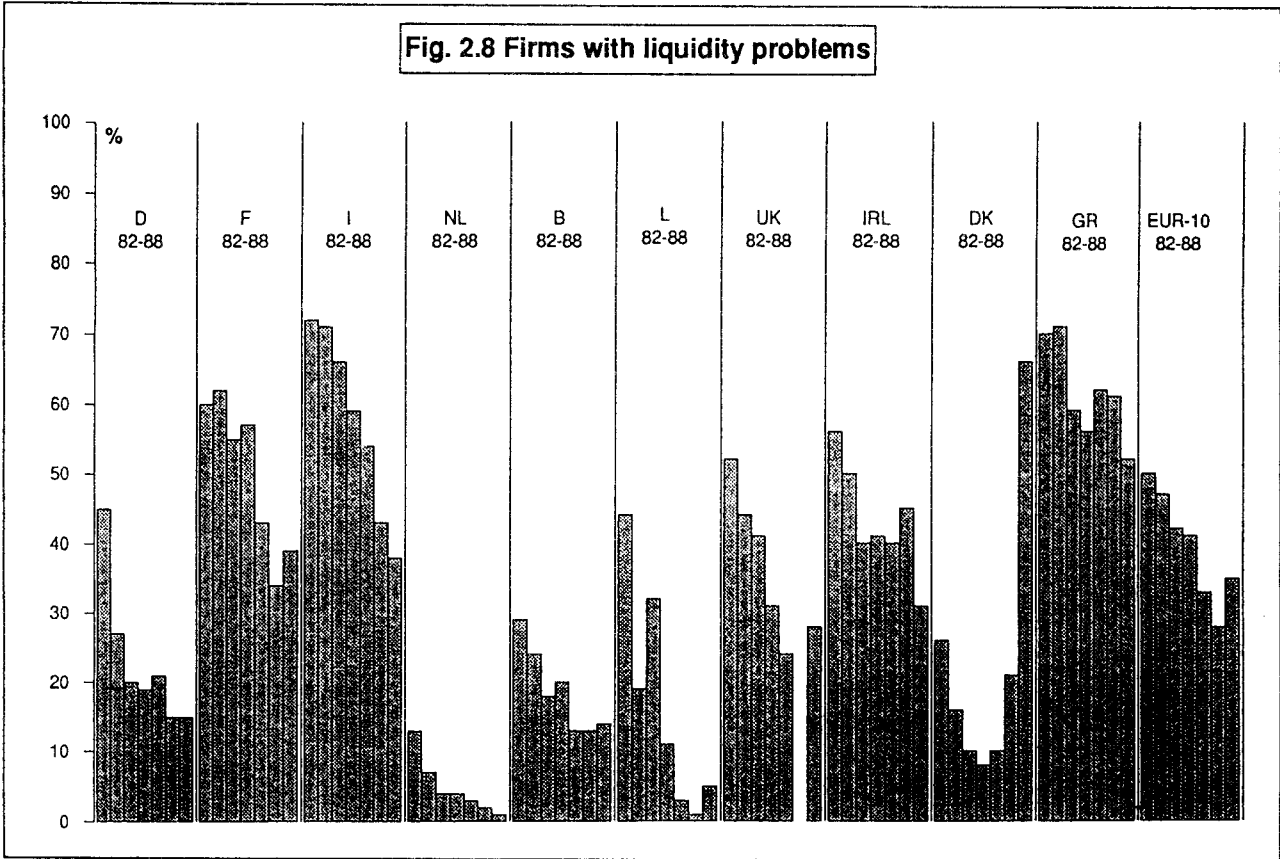
**Fig. 2.6 Balance of opinions on utilization of rolling stock**



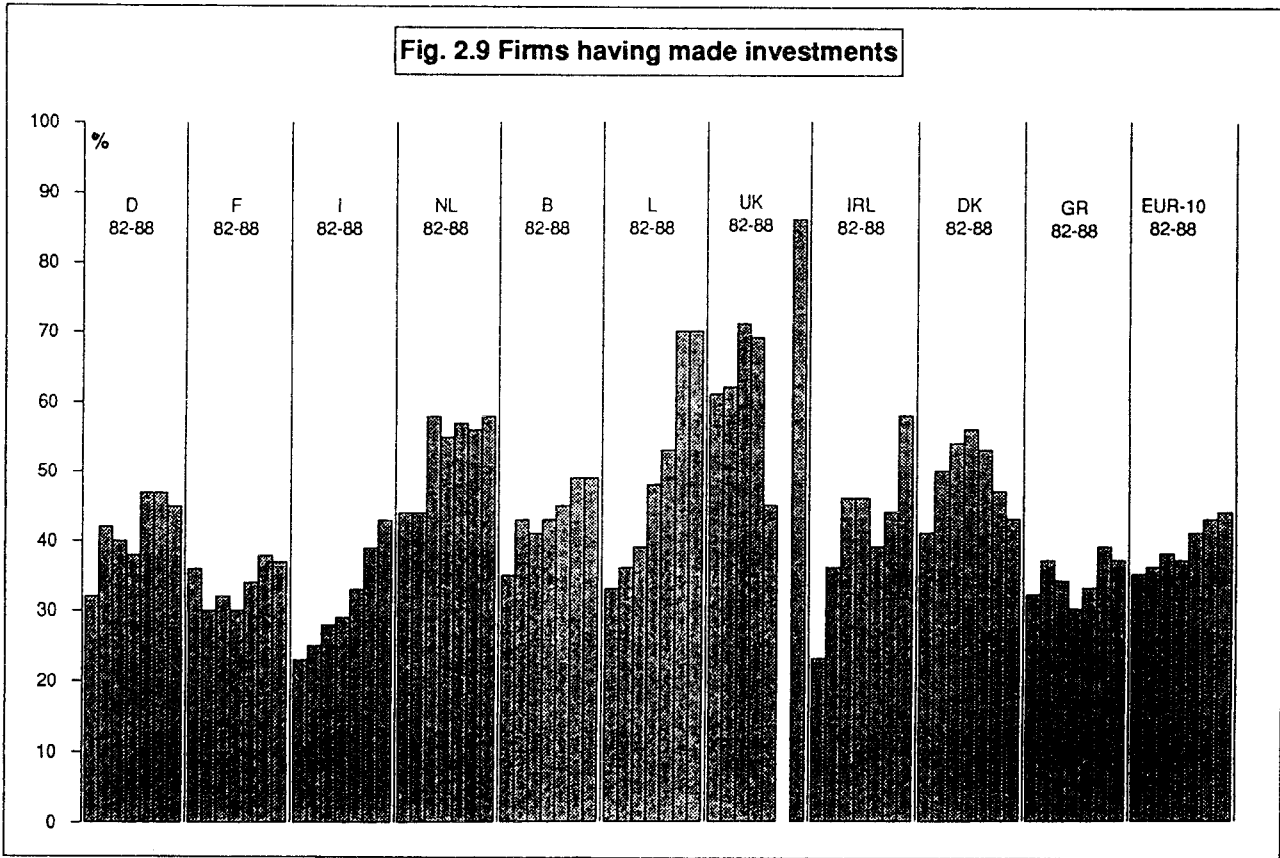
**Fig. 2.7 Firms having recruited drivers**



**Fig. 2.8 Firms with liquidity problems**



**Fig. 2.9 Firms having made investments**





## CHAPTER 3

### INLAND WATERWAYS

#### 3.0 Sources and Contents

Data reproduced in this issue are statistical data from the national statistical offices of Belgium, the Federal Republic of Germany, France and the Netherlands. They correspond to those presented on the basis of the Directives relative to the statistical statements on commodity transport by inland waterways supplied by the Statistical Office of the European Communities (Eurostat). The figures concerning Rhine traffic, including prices, were provided by the Central Rhine Commission. Data on cost and price developments were submitted by the Institut pour le Transport par Batellerie (ITB-Brussels) and by NEA-Rijswijk. 1988 data concerning France were based on Statistique annuelle commerciale provided by the Office National de la Navigation (ONN-Paris). The figures for Table 3.26 were provided by IVR-Rotterdam.

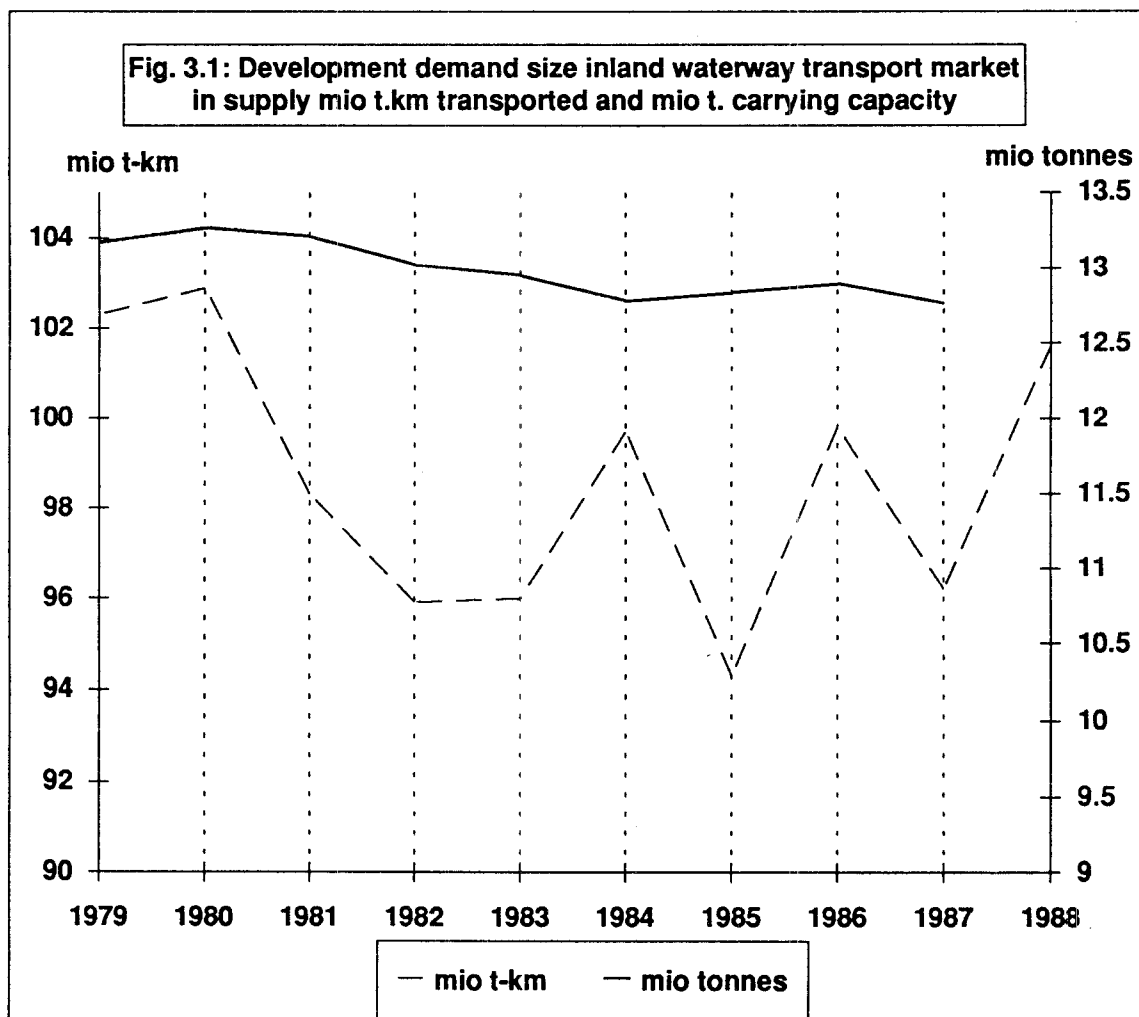
The contents of chapter 3 are as follows:

- 3.0 Sources and contents
- 3.1 Introduction
- 3.2 Demand side of the market
  - 1 - International traffic by relation
  - 2 - Domestic traffic
  - 3 - Commodities
  - 4 - Traffic with third countries
  - 5 - Transport by market
    - a Liquid/dry
    - b Rhine/NS
    - c free/bourse
  - 6 - Transport by flag
  - 7 - Total traffic on Community network
- 3.3 Supply side of the market
  - 1 - Fleet developments
  - 2 - Overcapacity
- 3.4 Market results
  - 1 - Transport inquiry survey
  - 2 - Waiting days
  - 3 - Cost/price indices
  - 4 - Profitability
- 3.5. Infrastructure
  - 1 - General
  - 2 - Water levels on the Rhine
  - 3 - Rhine-Main-Danube link

3.1 Introduction

After the fall in the demand for inland waterways transport in 1987, there was a rather strong recovery in 1988 in practically all commodities and markets as shown in the following tables.

The demand on the smaller canals has gone down dramatically during the last 10 years while on the rest of the European network the demand since 1983 slightly recovered, until in 1988 the level of 1979 – which was considered to be the last year of equilibrium between demand and supply on the inland waterways market – was almost reached again (see fig. 3.1)



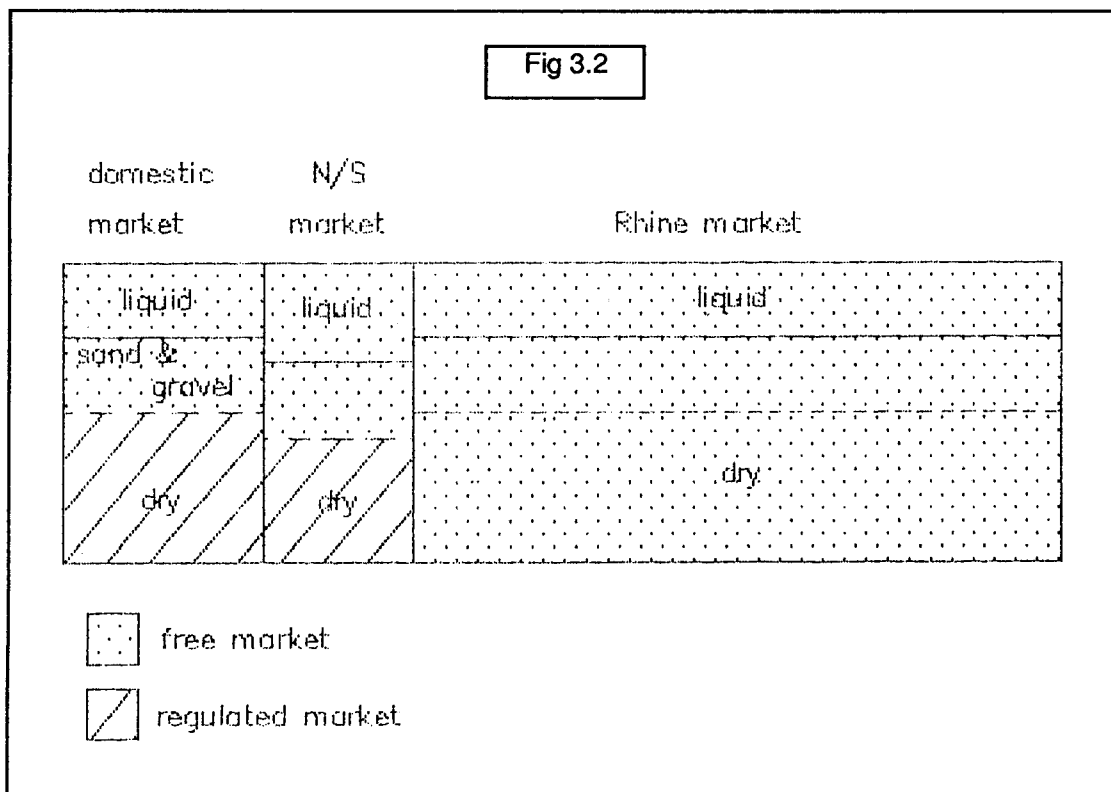
This is the first time that Chapter 3 of the Annual Report is presented in three main parts : demand side, supply side and results of the inland waterway transport market. This is why we take the opportunity to explain in this report in more detail the different aspects on sectors of the market.

The inland waterway transport market is divided in this Chapter in three different ways. First from an economic point of view there are two different systems. On the one side there is the free market where the balance between demand and supply creates the price, while on the other side there is the regulated market of bourses, tariff regulation and traffic sharing systems.

Secondly, in a territorial way the market presents itself in three sectors ; domestic market, Rhine market and the North/South market. Part of the domestic market and part of the North/South market are subject to obligatory tariff regulations and traffic sharing systems. The international Rhine market has a free market regime.

Finally the market is divided into two main modes of appearance: liquid cargo and dry cargo, which operate completely independantly of each other since one simply cannot transport dry cargo in a tanker and visa versa.

The transport of liquid cargo is free, dry cargo is partly free - mainly sand and gravel -, and partly regulated. (see fig. 3.2)



**3.2 Demand side of the market**

Flows in tons and t-km in 1988 growth rates comparing with 1987 and time series of the last 5 years.

(5)



### 3.2.1. International inland waterway transport on a country-by-country basis.

Table 3.1 presents tonnage figures for 1987 and 1988 and growth rates for each bilateral relation.

Table 3.1 Inland waterways: tonnes carried, International Intra-Community traffic ('000 tonnes)

TO		D	F	NL	B	L	Total outgoing
D	1987		2901	27124	10920	542	41487
	1988		2686	29573	12171	634	45064
	growth rate						
	%		-8.4	+9.0	+11.5	+17.0	+8.6
F	1987	8960		3406	2358	282	15006
	1988	10039		4375	2584	283	17281
	growth rate						
	%	+12.0		+28.4	+9.6	+0.4	+15.2
NL	1987	70531	3840		26862	249	101482
	1988	73608	4886		30020	293	108807
	growth rate						
	%	+4.4	+27.2		+11.8	+17.7	+7.2
B	1987	9083	3810	14376		30	27299
	1988	9158	3625	15018		33	27834
	growth rate						
	%	+0.8	-4.9	+4.5		+10.0	+2.0
L	1987	688	4	51	29		772
	1988	695	7	66	91		859
	growth rate						
	%	+1.0	+75	+29.1			+11.3
Total entry	1987	89262	10555	44957	40169	1103	186046
	1988	93500	11204	49031	44866	1243	199844
	growth rate						
	%	+4.7	+6.1	+9.1	+11.7	+12.7	+7.4

Total International Intra-Community traffic went up by 7.4%. All totals of outgoing and ingoing traffic of the Member States showed an increase. The biggest rise in percentage was noted in French exports (15.2%). In number the biggest rise was in Dutch exports (+ 7.3% mio t).

### 3.2.2. Domestic transport

Table 3.2 presents the national traffic on the network of five Member States.

**Table 3.2** Inland waterways - national traffic EUR 5  
( '000 tonnes). Growth rate in % ( ) comparing with  
1987

NST		D	F	NL	B	L	I
0 agricultural products +	%	(-14)	(-16)	(-11)	(- 1)		
	t	1151	2635	1907	736	0	21
1 foodstuff and animal fodder	%	(- 2)	(-33)	( - 2)	(- 7)		
	t	2075	396	9209	1815	0	7
2 solid mineral fuels	%	(+ 3)	(+ 6)	(- 7)	(-18)		
	t	12221	996	5388	1417	0	0
3 petroleum products	%	(- 1)	(-10)	(- 5)	(- 9)		
	t	13534	4109	11649	6245	0	131
4 ores and metal waste	%	(+16)	(-39)	(+15)	(- 0)		
	t	1794	67	746	2098	0	0
5 metal products	%	(+17)	(+19)	(+ 5)	(- 2)		
	t	1850	249	504	812	0	0
6 crude and manufactured minerals building materials	%	(+ 2)	(+12)	(+ 2)	(+27)		
	t	23034	20140	55736	5775	20	451
7 fertilizers	%	(+15)	(-10)	(- 7)	(+ 1)		
	t	1656	349	1801	999	0	0
8 chemicals	%	(+ 9)	(+ 6)	(- 0)	(+ 7)		
	t	5269	431	1699	2131	0	231
9 miscellaneous articles	%	(-29)	( -9)	(+14)	(-21)		
	t	319	231	1100	37	0	58
Total 1988		62903	29604	89737	22064	20	899
Total 1987		61346	28616	90174	21988	11	1492
Growth rate %		+2.5	+3.5	-0.5	+0.3	+82	- 41

The uplift of the Dutch and Belgian domestic markets in 1987 has stabilized in 1988. The Dutch domestic market went from 83 mio t in 1986 to 90 mio ton in 1987 and remained at that level in 1988. The decrease in the Belgian domestic market in the previous years (-2.8 % in 1986, -2.5% in 1985) came to an end in 1987 and stabilized in 1988.

Even the ever shrinking French domestic market had an increase of 3,5 % in 1988. In addition to this the German domestic market also went up (+ 2.5 %). It cannot be said that 1988 was a bad year for the domestic inland waterway transport market.

That does not mean that there is nothing to worry about ; looking at the development by NST/R chapter it is clear that the basis of the relative prosperity on that part of the transport market is rather limited, that is, it is due only to the increase in the transport of building materials. Most of the other NST/R chapters show a decrease.

For the first time the Italian domestic market appears in this table to complete the European picture.

The inland waterway transport market of Italy is a small closed market consisting only of the Po. From year to year there are rather big fluctuations from 1.1 mio t in 1986 to 1.5 mio t in 1987 down to 0.9 mio t in 1988. The last fall was caused by the virtual collapse of the transport of petroleum products on the Po.

### 3.2.3. Commodities

**Table 3.3** (1) Inland Waterways. Different categories NST in International Intra-Community traffic ('000 tonnes)

	1987	1988	88/87 growth rate %
0 agricultural products +	7676	8234	+ 7.3
1 foodstuffs and animal fodder	12972	14008	+ 8.0
2 solid mineral fuels	11232	10700	- 4.7
3 petroleum products	32666	35306	+ 8.1
4 ores and metal waste	36690	42556	+16.0
5 metal products	8854	10280	+16.1
6 crude and manufactured minerals	48321	53164	+10.0
7 building materials			
8 fertilizers	7262	6710	- 7.6
9 chemicals	15730	13466	-14.4
miscellaneous articles	5434	6131	+12.8
<b>Total</b>	<b>186845</b>	<b>200555</b>	<b>+ 7.3</b>

(1) There is a slight difference between totals in table 3.3 and 3.1 because table 3.1 is limited to 5 Member States.

## Major Commodities

The three commodities most relevant for inland water transport are :

- building material NST 6 (27 % of the total)
- ores and metal waste NST 4 (21 % of the total)
- petroleum products NST 3 (18 % of the total).

The following tables 3.4, 3.5 and 3.6 give a picture of these commodities on the international bilateral relation;

Table 3.4

Inland waterways: tonnes of NST 6 (sand, gravel etc.) carried on bilateral relation ('000 tonnes)

TO FROM		D	F	NL	B	L	TOTAL OUTGOING
D	1987		561	15909	2371	211	19052
	1988		508	17175	2933	150	20766
	growth rate %		-9	8	24	-29	9
F	1987	5855		1344	196	281	7676
	1988	6357		1579	224	283	8443
	growth rate %	9		17	14	1	10
NL	1987	2810	214		10076	31	13131
	1988	3108	211		12196	34	15549
	growth rate %	11	-2		21	10	18.4
B	1987	644	873	6198		16	7731
	1988	778	895	5980		8	7662
	growth rate %	21	3	-4		-50	-0.9
L	1987	611	0	0	0		611
	1988	636	0	0	0		636
	growth rate %	4					4.1
Total entry	1987	9920	1648	23452	12643	539	48202
	1988	10879	1614	24734	15355	476	53058
	growth rate %	9.7	-3.1	5.5	21.5	-11.7	10.1

**Table 3.5**

Inland waterways: tonnes of NST 4 (ores etc.) carried on a bilateral relation ('000 tonnes)

TO FROM		D	F	NL	B	L	TOTAL OUTGOING
D	1987		243	1036	259	49	1587
	1988		300	965	307	52	1624
	growth rate %		23	-7	19	6	2.3
F	1987	18		6	19	1	44
	1988	8		7	13	0	28
	growth rate %	-66		14	-32		-16.4
NL	1987	30980	1085		1444	27	33536
	1988	35460	2304		1343	37	39144
	growth rate %	14	12		-7	37	16.7
B	1987	534	717	242		0	1493
	1988	676	760	164		0	1600
	growth rate %	27	6	-32			7.2
L	1987	0	0	0	0		0
	1988	0	0	0	0		0
	growth rate %						
Total entry	1987	31532	2045	1285	1722	77	36660
	1988	36144	3363	1106	1663	81	42235
	growth rate %	14.6	64	-13.9	-3.4	15.6	15.6

In fact there is only one relation of real importance :  
NL - D which covers 85% of the total.

This part of the transport market is a specialized market.  
The ore is transported by pushbarges which cruise in a pool  
continuously from Rotterdam to Duisburg on the Rhine.

**Table 3.6** Inland waterways : tonnes of NST 3 (petroleum products) carried on bilateral relation ('000 tonnes)

TO FROM		D	F	NL	B	L	Total outgoing
D	1987		592	430	328	2	1352
	1988		311	443	271	1	1226
	growth rate %		-13.7	+3.0	-17.4		-9.3
F	1987	1058		2	27	0	1087
	1988	1086		15	12	0	1113
	growth rate %	+2.6			-66		+2.4
NL	1987	17331	799		7174	74	25378
	1988	17267	514		7303	80	25164
	growth rate %	-0.4	-35.7		+1.8	+8.1	-0.8
B	1987	3465	307	1061		7	4840
	1988	3384	296	4101		11	7792
	growth rate %	-2.3	-3.6	+286		+57	+61
L	1987	0	0	0	0		
	1988	0	0	0	0		
	growth rate %						
Total entry	1987	21855	1698	1495	7529	82	32659
	1988	21738	1322	4559	7586	92	35297
	growth rate %	-0.5	-22.1	+205	+0.8	+12.2	+8.1

There is a growth rate of 8.1% in 1988.

Oil prices were rather low during the year 1988.

Low oil prices has always had a favourable effect on this type of transport.

#### 3.2.4. Traffic with third countries

The present edition of the Annual Report includes for the second time data concerning the exchange by inland waterways between third countries and Member States. Table 3.7 provides information on the traffic from and to Switzerland and Austria, as well as State-trading countries.

The waterway traffic between Member States and third countries is rather limited in comparison with national and international traffic as a whole. It is carried out at four points :

Basel (F - CH border) Rhine  
 Passau (D - A border) Danube  
 Schnackenburg (D - GDR border) Mittellandkanal  
 Rügen (D - GDR) border) Elbe

Furthermore, a clear destination should be made between ingoing traffic and outgoing traffic. In the first case, the European State-trading countries generate 84% of the total, and in the second case only 12%. Within this group, the first place is occupied by the GDR, the only country to exceed a one million tonne volume.

Ingoing (28 %) and outgoing traffic (72 %) show a significant imbalance in the foreign trade by waterways of the Member States. This is mainly due to the Rhine exports towards Switzerland which represent 78 % of outgoing traffic and almost 57 % of total traffic with third countries.

Table 3.7 Ingoing and outgoing flows with third countries

	Ingoing EUR - 12					Outgoing EUR - 12				
	Vol 86 by 1000 t	Vol 87 by 1000 t	Vol 88 by 1000 t	Diff. 88-87 %	Market share %	Vol 86 by 1000 t	Vol 87 by 1000 t	Vol 88 by 1000 t	Diff. 88-87 %	Market share %
CH	502	356	361	+ 1,4	9,1	7601	8631	8091	- 6,3	78,3
A	340	279	263	- 5,7	6,7	772	861	1033	+ 20,0	10,0
YU	316	368	343	- 6,8	8,7	19	34	54	+ 58,8	0,5
H	383	471	420	- 10,8	10,6	12	33	2	- 93,9	0,0
R	158	128	176	+ 37,5	4,5	9	25	34	+ 36,0	0,3
CS	418	412	438	+ 6,3	11,1	596	431	446	+ 3,5	4,3
SU	91	49	11	- 77,6	0,3	41	68	18	- 73,5	0,2
BG	88	74	101	+ 36,5	2,6	26	35	53	+ 51,4	0,5
DDR	1363	1287	1376	+ 6,9	34,9	755	634	524	- 17,4	5,1
PL	326	301	454	+ 50,8	11,5	20	39	85	+118,0	0,8
Total State-trading	3143	3090	3319	+ 7,4	84,2	1478	1299	1216	- 6,4	11,8
Total Third count.	3985	3725	3943	+ 5,9	100,0	9851	10791	10340	- 4,2	100,0

### 3.2.5. Transport by market

Usually the inland waterway transport market is divided into several sections and looked at separately ; liquid/dry cargo, Rhine / North/South, and free market/bourse.

Only the liquid cargo versus dry cargo market sections operate independently from each other as two separate markets with their own prices, productivity, and specific problems. (e.g. the overcapacity on the liquid cargo sector is more severe).

For the other sectors it can be noted that though a Push convoy of 10.000 tons is rarely seen outside the Rhine and a 350 tons "Peniche" designed for the French canal system will most of the time operate there, in general an inland waterways vessel can and will operate on all market sectors.

#### a) liquid/dry cargo

Table 3.8 presents an overview of the two sectors per shiptype and network.

Most of the liquid cargo is transported by motorvessel on the German and Dutch network.

TABLE 3.8

network in mio t-km broken down per shiptype - 1988

Shiptype	Network				
	D	F	NL	B	L
Motor vessel	45726	5873	27637	4665	328
of which:					
liquid cargo	10794	720	6734	1046	3
dry cargo	34932	5153	20883	3619	325
Towed vessel	297	4	275	5	-
of which:					
liquid cargo	35	-	27	0	
dry cargo	262	4	247	5	
Push barges	6837	1418	7715	695	29
of which:					
liquid cargo	1065	210	814	78	1
dry cargo	5772	1208	6901	617	28
Others	-	40	15	0	-
Total	52860	7335	35642	5365	358
of which:					
liquid cargo	11894	930	7596	1124	4
dry cargo	40966	6405	28046	4241	354



The totals of '86 - '87 - '88 show that the liquid cargo market share is shrinking relatively and absolutely. (See Table 3.9).

**TABLE 3.9**

Total traffic all networks mio t km liquid cargo/dry cargo

	1986		1987		1988	
	mio t km	share of total	mio t km	share of total	mio t km	share of total
Liquid cargo	24.065	24.1%	22.599	23.5	21.544	21.2
dry cargo	75.770	75.9%	73.621	76.5	80.012	78.8
TOTAL	99.835	100	96.190	100	101.556	100

b) Rhine/NS

What makes the Rhine different from the other waterways is the Convention of Mannheim and as a result of that the fact that a non-Member State, Switzerland, as a full member of the river Rhine community uses the Rhine under the same conditions as the Member States. That is also the reason why Switzerland has become a member of the scrapping fund (see 3.3 of this chapter). To show the importance of Switzerland for the Rhine traffic the tables 3.10 and 3.11 present a NST breakdown at the traffic flow to and from the port of Basel.

**Table 3.10** International Rhine traffic passing French-Swiss border Basel upstream ('000 tonnes)

Commodity group	1987	1988	Differ.	Growth %
0. Agricultural products	506	466		- 7,9
1. Articles of food and fodder	258	260		+ 0,8
2. Coal	469	368		-21,5
3. Oil products	4046	4107		+ 1,5
4. Ore	52	54		+ 3,8
5. Steel products	1136	1323		+16,5
6. Sand, gravel	822	927		+12,8
7. Fertilizer	84	98		+16,7
8. Chemical products	498	453		- 9,1
9. Machinery, etc.	26	35		+34,6
Total	7897	8091		+2,5

**Table 3.11: International Rhine traffic passing French-Swiss border Basel downstream ('000 tonnes)**

Commodity group	1987	1988	Differ.	Growth %
0. Agricultural products	0	0		0
1. Articles of food and fodder	17	17		0
2. Coal	10	24		+140,0
3. Oil products	40	88		+120,0
4. Ore	55	43		- 21,8
5. Steel products	114	100		- 12,3
6. Sand, gravel	18	16		- 11,1
7. Fertilizer	-	-		-
8. Chemical products	14	14		0
9. Machinery, etc.	43	59	-51	+ 37,2
<b>Total</b>	<b>311</b>	<b>361</b>		<b>+ 16,1</b>

Under the rules of the 1868 Convention of Mannheim, traffic on this market is characterised by total freedom in the economic sense. The commercial inland shipping on the Rhine is free and is subject only to rules aimed at ensuring safe navigation. The only restrictions and regulations relate to the technical characteristics of the vessels, working conditions and the competence of the crews. The Convention of Mannheim covers the Rhine from Basel to the sea including the Lek and the Wall and the connections of the Rhine with the sea and towards Belgium.

The countries signatory to the Convention (Germany, France, the Netherlands and Switzerland and later Belgium and the United Kingdom) do, however, retain full freedom with regard to the commercial organisation of waterway transport within their respective frontiers or outside, where this transport does not use the Rhine. This had led to the emergence of commercial waterway transport organisations which vary from one country to another.

Attention must, however, be drawn to the second additional protocol of the Convention which limits total freedom of operation to vessels having a genuine link with one of the countries on the Rhine and/or with one of the EC Member States.

This text contains two elements ; firstly, under this protocol, inshore and offshore coastal trading on the Rhine may be conducted only by vessels belonging to the Rhine shipping sector. Vessels registered in the EC Member States have been accorded similar treatment to those of the contracting states of the Convention of Mannheim in order to comply with the obligations arising from the Treaty setting up the European Community. Vessels registered in other countries may enjoy

dispensations granted on terms defined by the Central Commission for the Navigation on the Rhine (CCR). This legal system grants complete freedom for the vessels genuinely linked to a country on the Rhine or an EC Member State. For vessels able to prove this genuine link, offshore and inshore coastal shipping is entirely free and as far as the offshore coastal trade is concerned no compulsory charges are imposed on transboundary cargoes.

Secondly, the second protocol offers the possibility for contracting states to regulate the traffic between their ports on the Rhine and eastern countries' ports through bilateral agreements. In doing so, the contracting states can also take measures concerning the participation of eastern countries' vessels in their national traffic and North South traffic, which can be of some importance in transit freedom.

These new arrangements for the Rhine came into force on 1st February 1985. On the Rhine market, a large number of vessels subject to private law operate alongside a multitude of independent waterway vessel owners. Mention must be made here of the serious overcapacity of the Rhine fleet on which the effect of the inland waterway carriers is negative. The steady decline in freight rates is jeopardising the survival of a large number of operators, especially those who have invested in new and very costly vessels.

Table 3.12 shows the total traffic on the Rhine including domestic traffic and the Rotterdam/Antwerp traffic.

Table 3.12

Total traffic on the Rhine (1 000 tonnes)

to from	CH	F	D	NL	B	L	Others	Total
CH	-	50	214	96	67	-	-	427
F	1050	819	9623	4072	1382	2	6	16954
D	2437	3149	41150	28569	11906	811	2661	90683
NL	2822	4335	71059	62816	10598	276	1264	153170
B	1594	782	8843	18534	<del>          </del>	31	-	29784
L	1	1	491	66	113	<del>          </del>	-	672
Others	2	1	1420	674	154	-	2	2253
Total	7906	9137	132800	114827	24220	1120	3933	293943

If we refer to the trend in the tonnages carried from 1987 to 1988, the following conclusions emerge : First of all, traffic on the Rhine is increasing both upstream and downstream of the Dutch-German border (Emmerich/Lobith). Most of the traffic between France-Belgium and the Netherlands (which includes a great part of North-South flows) is increasing. The B-NL route is also characterised by a growing tonnage. It is possible to discern a link between the capabilities of the infrastructure and the direction of the trend in transport activity for each of the routes. For instance, the tonnage carried is declining on those routes where transport by pushed convoy is not possible.

The North-South market is commonly understood to comprise all the goods transport by inland waterways undertaken from Belgium, France or the Netherlands to another of these three countries which does not use the Rhine. Although it is equivalent to only one third of the traffic volume carried on the Rhine route, the magnitude of the North-South is certainly not insignificant.

Unlike the Rhine traffic, the North-South traffic lacks homogeneity. It comprises quite distinct elements of which the following should be mentioned :

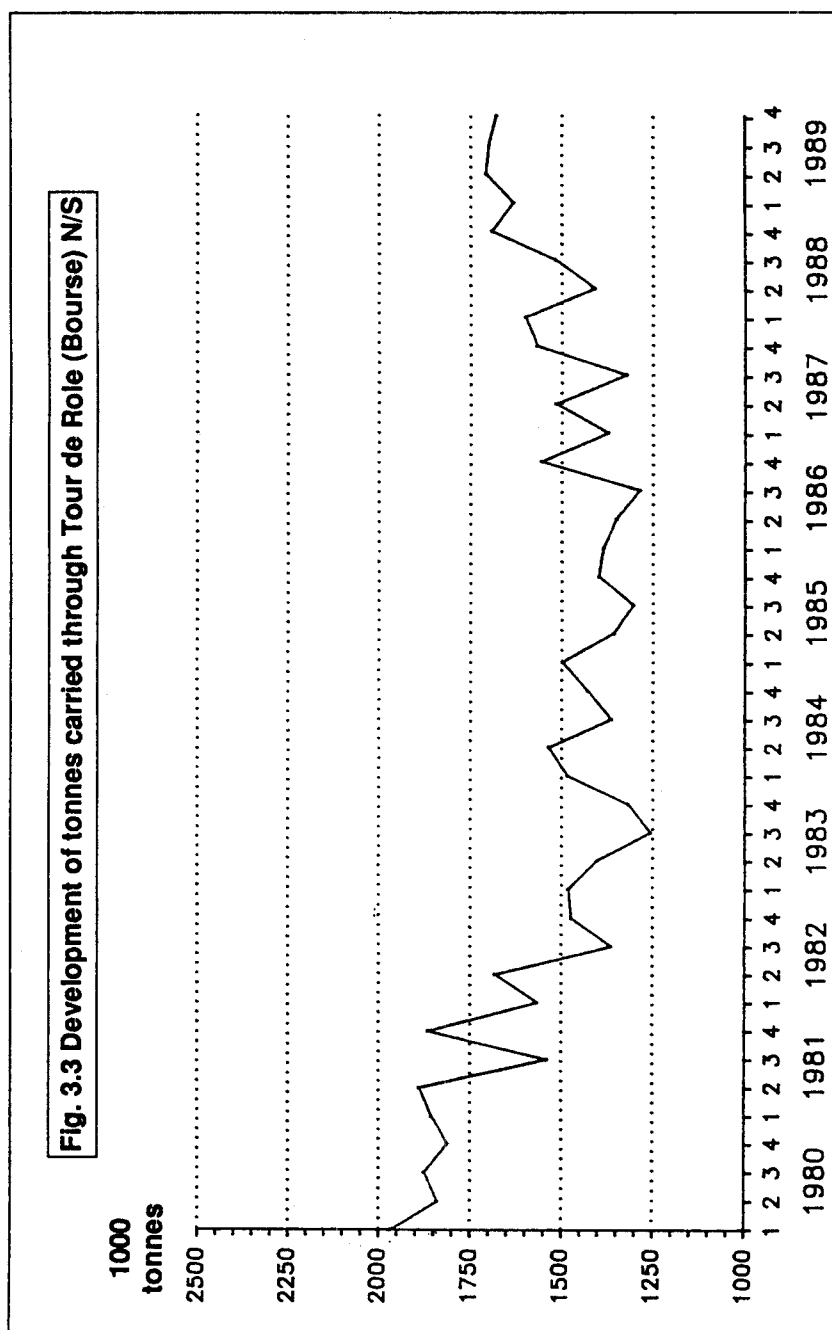
- the two-way traffic between the Netherlands and Belgium consisting of traffic proceeding towards the Schelde and the Brabant canals and other traffic bound for the Maas and the Campine canals, and
- the Belgium/Netherlands traffic to and from the North of France.

The existence of two separate markets is the outcome of infrastructural constraints, traffic to and from France being conditioned by the size of the waterway infrastructure. Because of this, 90% of vessels using the North France waterway network belong to the light bare ("peniche") 38m category. However, there is a discernible tendency to maximise cargoes and the vessel types as far as is practicable given the infrastructure. Compared with 1980, "peniches" were carrying less than 80% of the tonnage. These infrastructural constraints also influence the tonnage and the composition of the fleet operating in the different markets.

The ageing of the fleet operating in the North France basin is due primarily to inadequate vessel replacements. The explanation for this is the poor profit outlook attributable in the main to the infrastructural constraints referred to above. This phenomenon is aggravated by the effect of a specific, differentiated market organisation according to whether dry or liquid cargoes are concerned. There is total freedom with regard to the latter, but the organisation of the dry cargo market is very uneven.

This North-South traffic which, in the past, was free of any commercial constraint has in the course of time become regulated to a greater or lesser extent and in varying ways according to country of destination, with the result that the North-South may be seen as composing a number of North-South markets defined by countries of origin and destination, which are distinguished from each other, by the relevant commercial regulations. (See table 3.13 and fig. 3.3).

The market situation changed during the previous year as follows; the total of 47.343.000 tonnes in 1987 went up to 49.947.000 tonnes - a difference of 5.5%. This was mainly due to an increase in the transport flow on the Dutch/Belgian relation.



c) Free market/bourse "TdR"

Some segments of the inland waterway market in the Community are subject to obligatory tariffs and cargo sharing systems (tour de rôle systems, "TdR"). Other sectors, like the international Rhine market, are characterised by a completely free market regime.

The access to both market sectors is open for carriers of all EC member states with the following regulations; access to the Rhine market is open to carriers with a genuine link with one of the member states (second additional protocol of the Convention of Mannheim); on the French domestic market and on the relation F-B+NL a carrier of any nationality other than French is only allowed to take freight on other return trip; the B+NL domestic market is subject to a licence system, but in practice everyone who applies gets a licence.

TdR systems are applied in national transport in B, F, NL and in transport between these states. But not all transport on these markets is subject to TdR.

Universally exempted from TdR are: the transport of liquid cargo, own account transport and abnormal freight requiring special vessels.

In addition, for example, France exempts all scale bulk transport on the Seine and the Rhône. In NL the important sand and gravel transport and a number of other commodities are generally exempted. For coal transport to power stations special arrangements have been made.

As far as North-South traffic is concerned, the traffic relation NL--B is by far the most important. However this is a voluntary TdR-system.

The greatest part of cargo flows which can be handled by big vessels do not pass via TdR.

In practice TdR systems cover the smaller part of the markets concerned. (see table 3.13).

TABLE 3.13

1987		Total tonnage by market <sup>(1)</sup> x mlo t	tonnage shipped via TdR x mlo t	market share TdR
<u>Domestic markets</u>				
	B	22.0	10.7 <sup>(2)</sup>	47%
official TdR (bourse)	F	28.6	5.8 <sup>(3)</sup>	20%
	NL	90.2	16.4 <sup>(4)</sup>	19%
<hr/>				
Total domestic		140.8	33.2	24%
<hr/>				
<u>North/South traffic</u>				
official TdR (bourse)	B --> F	3.8	2.8 <sup>(2)</sup>	74%
	F --> B + NL	5.8	3.7 <sup>(3)</sup>	67%
	B --> NL	15.1	6.2 <sup>(2)</sup>	41%
voluntary	NL --> B	26.9	4.9 <sup>(5)</sup>	19%
	NL --> F	3.8	0.9 <sup>(5)</sup>	24%
<hr/>				
Total North/South		55.4	18.5	33%
<hr/>				

In conclusion, TdR covers 24% of all national inland waterway transport in B + F + NL and 33% of transport between these countries.

- 
- (1) Source: M.O.S.
  - (2) Source: I.T.B.
  - (3) Source: O.N.N.
  - (4) Source: R.V.I.
  - (5) Source: N.E.A.

### 3.2.6 Inland waterway transport by flag

In order to give an insight into flagshares, tables 3.14 and 3.15(1) present the shares by nationality, based on t-km, of the vessels on the networks of the 5 Member States.

In the 1987 report the 1987 data were not available, therefore the 1987 data (table 3.15) are now published in addition to the 1988 data (table 3.14).

#### Flag shares on national and international markets

In tables 3.14 and 3.15 flag shares are given for national and international transport, ingoing and outgoing traffic and total traffic, including transit traffic of the Federal Republic of Germany, France, the Netherlands, Belgium and Luxembourg. In addition to the traffic shares of each country the share is given for other carriers. Under this heading vessels of Swiss and Eastern bloc nationalities are the most important.

#### National Traffic

Besides the market share of Dutch carriers in the national traffic in Germany (6.8 %) and Belgium (9.11 %) the national traffic in each country is almost completely in the hands of transporters of that same country.

#### International Traffic

In international traffic the Dutch fleet holds a strong position. Dutch vessels are the main transporters in Germany (43 %), (whereas German vessels have a share of 39,1 %) and in the Netherlands (59,0 %). In Belgium where Belgian vessels have a share of 44.4 % the Dutch market share (42.0 %) practically equals the Belgian.

#### Total traffic

Market shares change gradually ; seldom more than 1 % per annum and never over 2 %. In 1987 the only market share that changed more than 1 % is the market share of the Dutch fleet in the Netherlands which went from 63,4 % in 1986 to 65 %.

---

(1) Source Eurostat



**Table 3.14** Inland waterways; national and international traffic in mto t-km, share by nationality of the vessel, 1988 (%)

Net-work	Nationality of the vessel	National traffic		International traffic		Total traffic (including transit)	
		mto t-km	%	mto t-km	%	mto t-km	%
D	D	12118	90.2	11789	37.7	24792	46.9
	F	11	0.1	777	2.5	1097	2.1
	NL	975	7.3	14051	44.9	19450	36.8
	B	123	0.9	1593	5.1	2631	5.0
	L	3	0.0	70	0.2	89	0.2
	Other	204	1.5	3001	9.6	4799	9.0
	Total	13434	100	31281	100	52859	100
F	D	19	0.5	454	15.4	632	8.6
	F	3642	98.6	889	30.1	4542	61.9
	NL	8	0.2	633	21.4	879	12.0
	B	5	0.1	786	26.6	813	11.1
	L	0	0.0	14	0.5	15	0.2
	Other	18	0.5	175	5.9	453	6.2
	Total	3693	100	2952	100	7334	100
NL	D	12	0.2	4697	21.5	6172	17.3
	F	-	-	277	1.3	484	1.4
	NL	7321	98.3	13841	63.3	24023	67.4
	B	84	1.1	1625	7.4	3031	8.5
	L	-	0	8	0.0	16	0.0
	Other	28	0.4	1420	6.5	1916	5.4
	Total	7445	100	21868	100	35642	100
B	D	4	0.2	118	3.7	129	2.4
	F	6	0.3	256	8.0	430	8.0
	NL	163	9.4	1407	44.0	1663	31.0
	B	1556	89.0	1338	41.9	3051	56.9
	L	0	0	2	0.1	3	0.1
	Other	17	1.0	70	2.2	89	1.7
	Total	1747	100	3191	100	5366	100
L	D	-	-	5	50	110	30.7
	F	-	-	0.6	6	17	4.7
	NL	-	-	2.5	25	156	43.6
	B	-	-	0.6	6	55	15.4
	L	1	-	0.6	6	6	1.7
	Other	-	-	0.7	7	14	3.9
	Total	1	-	10	100	358	100

Table 3.15

Inland waterways; national and international traffic in mio t-km, share by nationality of the vessel, 1987 (%)

Network	Nationality of the vessel	National traffic		International traffic		Total traffic (including transit)	
		mio t-km	%	mio t-km	%	mio t-km	%
D	D	11492	90.1	11504	39.1	23702	47.7
	F	8	0.1	553	2.1	9740	2
	NL	865	8.6	12651	43	17240	34.7
	B	114	0.9	1519	5.2	2424	4.9
	L	1	0	70	0.2	88	0.2
	Other	272	2.1	3087	10.5	5266	10.6
	Total	12753	100	29408	100	49721	100
F	D	22	0.6	434	15.5	594	8.1
	F	3821	98.6	824	29.3	4655	63.2
	NL	4	0.1	585	20.1	806	11
	B	6	0.2	761	27.1	793'	10.8
	L	0		8	0.3	8	0.1
	Other	25	0.6	204	7.3	521	7.1
	Total	3878	100	2809	100	7370	100
NL	D	13	0.1	4916	24.1	6297	18.6
	F	11	0.1	343	1.7	574	1.7
	NL	7222	98.2	12052	59	21923	65
	B	81	1.1	1796	8.8	3153	9.3
	L	-		6	0	11	0
	Other	24	0.3	1311	6.4	1825	5.4
	Total	7351	100	20431	100	33771	100
B	D	7	0.4	103	3.4	126	2.5
	F	7	0.4	229	7.6	365	7.2
	NL	152	9.1	1262	42	1511	30
	B	1478	88.6	1336	44.4	2958	58.5
	L	0	0	2	0.1	3	0.1
	Other	24	1.4	67	2.2	93	1.8
	Total	1669	100	3009	100	5056	100
L	D	-	-	6	60	88	32.7
	F	-	-	0		23	8.6
	NL	-	-	4	40	100	37.2
	B	-	-	1		39	14.5
	L	1	-	0		6	2.2
	Other	-	-	1		13	4.8
	Total	1	-	10	100	269	

### 3.2.7. Total traffic on Community network

**Table 3.16** : National and International transport activity by network ('000 tonnes)

	D *	F *	NL *	B *	L *	Total **	Growth rate %
1984	223966	63255	221298	94227	2128	396637	+3.1
1985	210401	59353	221479	89439	1761	380443	-4.1
1986	215246	58486	238116	91288	2021	397230	+4.4
1987	207548	56560	240671	90956	1913	395061	-0.5
1988	218564	60340	249532	95328	2173	419294	+6.1
Growth rate							
88/84	% -3.4	- 4.6	+12.8	+1.2	+2.1	+6.1	
Growth rate							
88/87	% +5.3	+6.7	+3.7	+4.9	+13.6	+6.1	

\* EUR 5: Import + export + national transport

\*\* EUR 5: Total national transport + total export

During the period 1984-1988 the total activity improved by 6.1% in tonnes and 5.6% in t-km.

All relations show improvements in both tonnes and in tonne/kilometres in comparison with the previous year, with the exception of F in t-km (-0.5%). So, 1988 was a rather good year for the inland waterways transport market.

**Table 3.17** : National and international activity\* by network (mio t-km)

	D	F	NL	B	L	Total	Growth rate %
1984	51996	8880	33320	5200	289	99686	+3.9
1985	48183	8394	32377	5015	304	94274	-5.4
1986	52185	7767	34438	5156	290	99836	+5.9
1987	49721	7370	33771	5056	269	96188	-3.7
1988	52859	7334	35642	5366	358	101559	+5.6
Growth rate							
88/84	% +1.7	-17.4	+7.0	+3.2	+23.9	+1.9	
Growth rate							
88/87	% +6.3	-0.5	+5.5	+6.1	+33.1	+5.6	

(\* activity = import + export + national + transit distances as far as covered within the Member States)

N.B.:

As the national statistics used in table 3.5 take into account only the distances as far as covered in the Member States, one must be careful with the interpretation by country. For instance, a major port like Antwerp is very close to the Dutch border, therefore an increase of exports from Antwerp to NL + D will contribute very little to the Belgian transport statistics but much more to the Dutch.

3.3 Supply side of the market

The evolution of demand has been highlighted in the previous paragraphs.

In this paragraph the development of the supply side, i.e. the fleet is given.

3.3.1. Fleet developments

Tables 3.18 to 3.23 show the development of the fleets of the 5 Member States plus the Swiss fleet during the year 1988. For the development of the carrying capacity of the total fleet since 1979 see also fig. 3.1.

The main increase concerned push barges and tankers of the Dutch fleet (table 3.20). This phenomenon cannot be explained by an increase of demand on that part of the transport market. Although an increase in ore transport was noted during 1988, coal and ore, the two commodity groups that take the main part of the transport market for push barges, were in a downward trend over the last few years.

For liquid cargo the price development was disastrous. Prices per t-km were sometimes hardly enough to cover the variable costs.

Nor, as far as the liquid cargo market is concerned, can the investments in new vessels be explained totally as an aftermath of the price boom in 1986. The explanation of this phenomenon lies in the supply side of the market. The abolition of the Dutch investment premium on new building in the beginning of 1988 had triggered some shipbuilding orders from those who wanted to benefit at the last minute under that provision. Furthermore, the prospect of a European scrapping regulation had created a willing investment climate in the shipbuilding sector. Orders were placed at numerous shipyards now that it was likely to become obligatory in a short period of time to scrap an equivalent tonnage of carrying capacity for every new vessel to be built or pay into a scrapping fund a special contribution that could be the considerable sum of 20% of the value of the new vessel.

Table 3.18

GERMAN FLEET

	31. 12. 1987		31. 12. 1988		growth rate 88/87 %	
	carrying ca- capacity '000 tonnes	number	carrying ca- capacity '000 tonnes	number	tonnes	number
motorvessel	1 976	2 101	1 923	2 030	- 2.7	- 3.4
pushbarge	556	364	558	372	+ 0.4	+ 2.2
towed vessel (1)	68	86	67	84	- 1.5	- 2.3
motortanker	576	441	580	438	+ 0.7	- 0.7
tank push barge	63	43	59	40	- 6.3	- 7.0
towed tanker (1)	10	28	9	25	-10.0	-11.7
	total power '000 KW		total power '000 KW		KW	
pushers 300 KW (2)	65	49	61	45	- 6.2	- 8.2

(1) towed vessels transformed into barges included.

(2) tug boats which are able to push, included.

Table 3.19

FRENCH FLEET

	31. 12. 1987		31. 12. 1988		growth rate 88/87 %	
	carrying ca- pacity '000 tonnes	number	carrying ca- pacity '000 tonnes	number	tonnes	number
motorvessel	1 206	3 023	1 098	2 716	- 9.0	-10.2
pushbarge	606	845	576	780	- 3.0	- 8.7
towed vessel (1)	14	58	10	38	-29.6	-35.5
motortanker	133	266	110	222	-17.3	-16.5
tank push barge	129	99	120	85	- 7.0	-14.1
towed tanker (1)	3	5	2	5	-33.3	-20
	total power '000 KW		total power '000 KW		KW	
pushers 300 KW (2)	103	126	98	122	-19.7	- 3.2

(1) towed vessels transformed into barges included.

(2) tug boats which are able to push, included.

Table 3.20

## DUTCH FLEET

	31. 12. 1987		31. 12. 1988		growth rate 88/87 %	
	carrying ca- pacity '000 tonnes	number	carrying ca- pacity '000 tonnes	number	tonnes	number
motorvessel	3 339	4 746	3 448	4 680	+ 3.3	- 1.4
pushbarge	1 209	553	1 348	641	+11.5	+15.9
towed vessel (1)	336	348	285	287	-15.2	-17.5
motortanker	640	498	693	540	+ 8.3	+ 8.4
tank push barge	120	67	105	57	-12.5	-14.9
towed tanker (1)	3	1	1	1	-66.7	0
	total power '000 KW		total power '000 KW		KW	
pushers 250 KW (2)	147	221	164	247	+11.3	+11.0

(1) towed vessels transformed into barges included.

(2) tug boats which are able to push, included.

Table 3.21

## BELGIAN FLEET

	31. 12. 1987		31. 12. 1988		growth rate 88/87 %	
	carrying ca- pacity '000 tonnes	number	carrying ca- pacity '000 tonnes	number	tonnes	number
motorvessel	1 096	1 828	1 093	1 796	- 0.3	- 1.8
pushbarge	310	134	309	128	- 0.3	- 4.5
towed vessel (1)	24	33	20	23	-16.7	-30.3
motortanker	199	209	206	210	+ 3.5	+ 0.5
tank push barge	15	6	17	7	+13.3	+16.7
towed tanker (1)	4	4	4	4	0	0
	total power '000 KW		total power '000 KW		KW	
pushers 300 KW (2)	46	85	44	83	- 4.3	- 2.4

(1) towed vessels transformed into barges included.

(2) tug boats which are able to push, included.



Table 3.22

## LUXEMBOURG FLEET

	31. 12. 1987		31. 12. 1988		growth rate 88/87 %	
	carrying ca- pacity '000 tonnes	number	carrying ca- pacity '000 tonnes	number	tonnes	number
motorvessel	11	18	16	22	+22.2	+45.4
pushbarge	-	-	-	-	-	-
towed vessel (1)	-	-	-	-	-	-
motortanker	4	1	6	2	+100	+50
tank push barge	-	-	-	-	-	-
towed tanker (1)	-	-	-	-	-	-
	total power '000 KW		total power '000 KW		KW	
pushers 300 KW (2)	-	-	-	-	-	-

(1) towed vessels transformed into barges included.

(2) tug boats which are able to push, included.

Table 3.23

## SWISS FLEET

	31. 12. 1987		31. 12. 1988		growth rate 88/87 %	
	carrying ca- pacity '000 tonnes	number	carrying ca- pacity '000 tonnes	number	tonnes	number
motorvessel	144	93	124	75	-13.9	-19.4
pushbarge	116	49	109	44	- 6.0	-10.2
towed vessel (1)	10	5	8	4	-20	-20
motortanker	187	106	177	100	- 5.3	- 5.7
tank push barge	21	10	21	10	0	0
towed tanker (1)	2	2	1	1	-50	-50
	total power '000 KW		total power '000 KW		KW	
pushers 300 KW (2)	11	9	10	8	- 9.1	-11.1

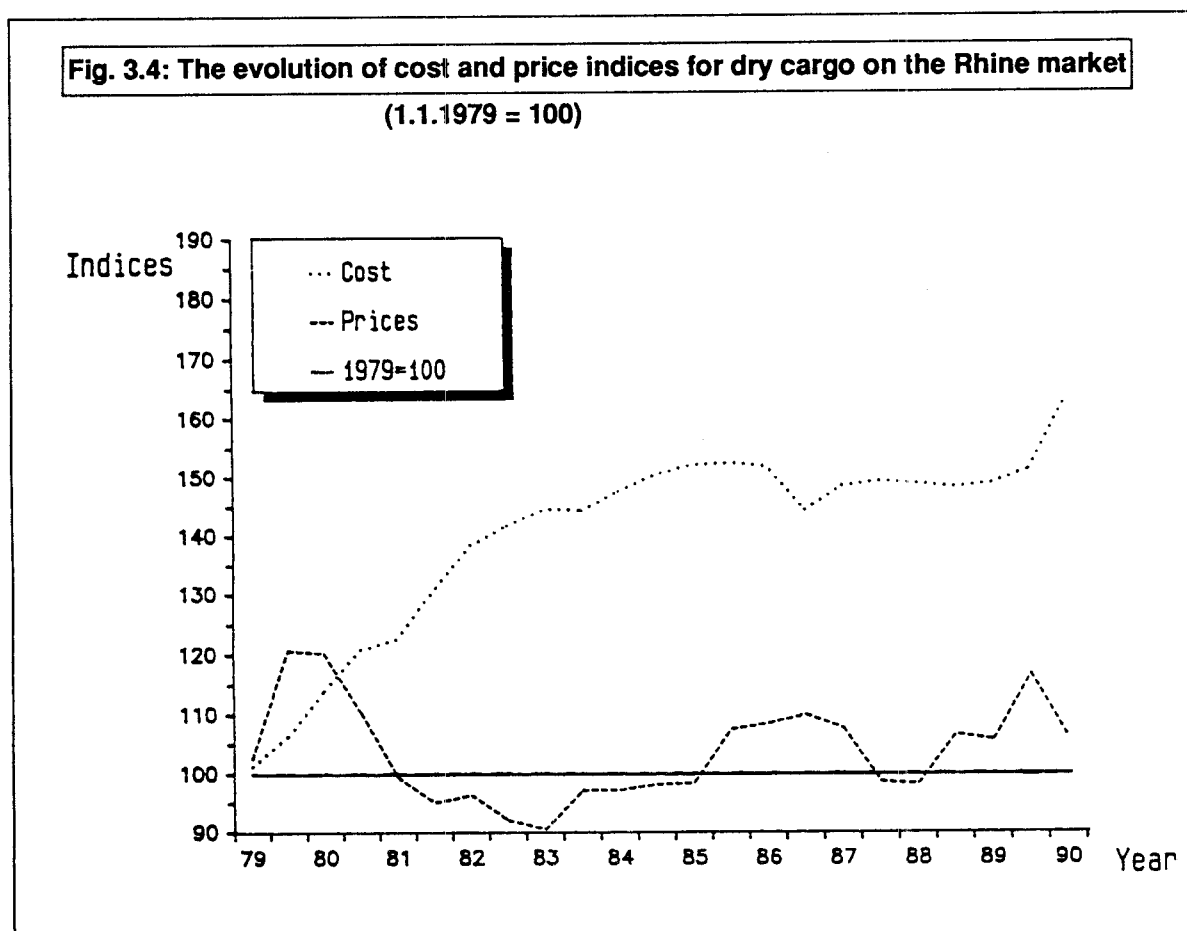
(1) towed vessels transformed into barges included.

(2) tug boats which are able to push, included.

### 3.3.2. Overcapacity

Since 1980 a structural imbalance between supply and demand has been causing serious problems in the inland waterways sector. The most significant reasons for this phenomenon are the decrease in demand in the period 1980-1983 and the ongoing productivity increases due to increase of scale and modernisation of the fleet. The surplus capacity is now generally estimated at 15% to 20% of the Community fleet.

The overcapacity has a negative effect on the evolution of prices on the free market. For example: in dry cargo Rhine transport prices in 1988 were still at the level of 1979, whilst nominal costs have gone up in the same period by more than 50% (see fig.3.4).



In order to remedy the situation, the Council, on a proposal of the Commission, established in May 1989 an EEC capacity regulation system entailing:

- \* measures to set up and to coordinate the functioning of national scrapping schemes by harmonizing the basic principles and procedures throughout the Community;

- \* arrangements to prevent the impact of a coordinated scrapping action from being cancelled by putting limitations on the bringing into service of new vessels.

The scheme is intended to eliminate 10% of the dry cargo fleets and 15% of the tanker fleets within the course of 1990. Restrictions on the bringing into service of new boats are to be applied from 1st May 1989 till 1st May 1994. The Swiss authorities have simultaneously introduced similar measures for its fleet.

## Rhine fleet

Table 3.24 presents developments in the investments in the Rhine fleet during the year 1988 : new construction and demolishing, purchasing and selling abroad.

### 1. New building and scrapping

The balance of new building and scrapping was 31.354 tonnes for the total of the Rhine fleet in 1988. 83 new ships were added to the Rhinefleet while 295 ships were scrapped - consequently the Rhine fleet went down, to 212 ships during 1988.

The German fleet went down the most with 43.130 tonnes (68 ships) followed by the Dutch fleet with 23.724 tonnes (45 ships). The only fleet with a considerable positive balance was the Belgian : 15 new ships were added to the Belgian fleet and only 8 ships scrapped as a result of which the Belgian fleet grew by 39.518 tonnes.

A breakdown per shiptype of section I of table 3.24 (new buildings and scrapping) is presented in table 3.24 A.

In tonnes the main part of the new construction was pushbarges at 42%. Moreover the investment in new tankers is relatively high. These investments cannot be explained by only looking at the demand side of the market.

The abolition of the Dutch investment premium on new building in the beginning of 1988 and last minute orders before the European scrapping regulation came into force has also contributed to this development.

The figures of table 3.24 A reflect also that the tendency to increasing scale has not yet ended. The average new pushbarge has over 1000 tonnes more than the average scrapped one. The same applies to tankers and motorvessels.

### 2. Change of flag

The purchase and selling abroad of inland waterway vessels did not have any effect on the Rhine fleet as a whole.

Dutch fleet increased at the cost of the German, Belgian and Swiss fleet.

Due to the outflagging policy of the Swiss government since 1985 the Swiss fleet has decreased from  $\pm$  400 units to 280.

### 3. Reconstruction

The change of capacity or a change of vessel type contributed 52.087 tonnes to the Rhinefleet in 1988.

Table 3.24 Breakdown Rhinefleet developments during the year 1988 in tonnes and number of ships ( )

Balance of Investment	D	F	NL	B	L	CH	Total
1. new building	(5) 10,911	0	(62) 142,747	(15) 38,454	(1) 4028	0	(83) 196,050
scrapping	(73) 54,041	(6) 2,153	(207) 166,471	(8) 2,936	0	1,461	(295) 227,404
balance	(-68)-43,130	(-6) -2,153	(-145) -23,724	(7) 35,518	(1) 4028	(-1) -1,461	(-212) -31,354
2. change of flag							
import	(6) 5,398	(2) 740	(104) 132,784	(10) 12,234	(1) 1232	(1) 2,255	(124) 154,843
export	(45) 55,619	(1) 2,154	(5) 4,434	(46) 56,019		(27) 36,417	(124) 154,843
balance	(-39)-50,221	(1) -1,414	(99) 128,350	(-36) -43,785	(1) 1232	(-26)-34,162	0
3. reconstruction							
increase	33,018	2,025	137,827	22,261	0	8,944	204,075
decrease	24,976	4,644	90,638	20,322	0	11,408	151,988
balance	8,042	-2,619	47,189	1,939	0	- 2,464	52,087

Table 3.24 A Breakdown per ship type of new constructed ships and scrapped ships in 1988

ship type	new building			scrapping			balance	
	number	tonnes	%	number	tonnes	%	number	tonnes
motorvessels	37	74,010	38	208	108,143	48	- 171	-34,133
motortankers	17	39,659	20	19	15,443	7	- 2	24,216
pushbarges	29	82,318	42	36	66,472	29	- 7	15,909
towed vessel				32	37,346	16	- 32	-37,346
total	83	196,050		295	227,404		- 212	-31,354

3.4. Market results

3.4.1. Transport inquiry survey

The general feeling of transporters about the market situation (balance of opinion on demand utilization of capacity and forecast of activity) showed in 1988 in general a moderately optimistic picture.

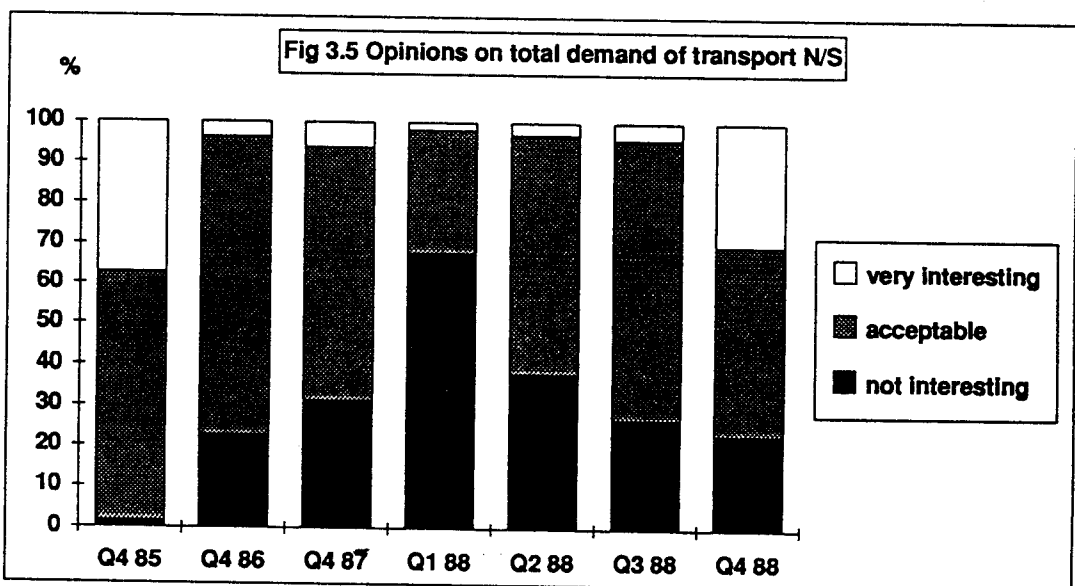
For the Rhine transport market the opinions of transporters during the year 1988 about the volume transported and freight rates was the following ;

TABLE 3.25

	volume transported			Freight rates		
	+	=	-	+	=	-
	%	%	%	%	%	%
Q1	18	18	64	8	46	40
Q2	73	27	0	0	41	59
Q3	40	10	40	23	54	23
Q4	64	27	9	33	25	42

In short the demand of transport capacity was satisfactory but the prices were disappointing.

Outside the Rhine the opinion of total demand of transport was different. Only during the fourth quarter was the market situation judged to be favourable (see figure 3.5).



### 3.4.2. Waiting days

Waiting time on the bourses is considered to be one of the indicators of activity on the North/South markets for dry bulk cargo.

On that regulated part of the North/South market where there is a fixed price the balance or imbalance between demand of transport and the capacity available is reflected in more or less waiting time on the bourses, in contrast with the free market where the price is the result of the balance between demand and supply.

Table 3.26 shows the evolution of waiting days by traffic relation.

Table 3.26

Quarterly average of waiting days in international N/S traffic by traffic relation

Traffic relation	Q1	Q2	Q3	Q4	Yearly average	
1) NL -- F	1983	11.5	18.8	17.6	8.9	14.2
	1984	14.3	20.1	16.2	11.4	19.1
	1985	14.2	19.3	18.0	13.9	16.3
	1986	17.1	14.2	17.3	8.5	14.1
	1987	11.6	14.7	23.3	13.0	15.7
	1988	23.6	22.7	22.2	15.7	21.1
	1989	18.0				
2) NL -- B	1983	12.7	13.3	12.9	8.4	11.8
	1984	12.5	12.2	14.0	10.7	12.3
	1985	13.5	12.9	13.6	8.7	12.2
	1986	10.9	9.7	12.7	8.5	10.4
	1987	8.4	12.3	16.4	10.1	11.7
	1988	13.3	12.1	11.8	10.3	11.9
	1989	12.5				
3) B -- B+F	1983	7.5	7.7	8.4	4.7	7.1
	1984	7.7	7.5	8.1	7.0	7.6
	1985	10.1	7.8	9.9	7.9	8.9
	1986	10.9	7.8	11.2	8.1	9.5
	1987	10.4	8.4	11.4	8.3	9.6
	1988	9.9	8.9	8.9	7.2	8.5
	1989	8.7				
4) B --- NL	1983	8.1	8.6	9.5	6.9	8.3
	1984	8.9	8.7	8.7	8.5	8.7
	1985	10.7	10.6	11.3	8.5	10.3
	1986	8.8	7.9	10.5	7.3	8.6
	1987	9.3	7.6	10.0	6.5	8.4
	1988	8.5	6.6	7.9	6.2	7.2
	1989	9.0				
5) F -- B+NL	1983	20.9	17.0	21.0	16.2	18.8
	1984	19.0	19.6	22.8	18.6	20.0
	1985	18.7	19.1	26.6	10.3	18.7
	1986	18.3	25.1	30.5	29.2	25.8
	1987	30.8	28.7	31.7	19.9	27.8
	1988	20.2	23.3	29.2	21.0	23.4
	1989	20.3				

The yearly average of the year 1988 in three relations went down a little which could mean that the market situation has improved. On the other hand the yearly average on the main relation NL-B stayed more or less the same; from 11.7 in 1987 to 11.9 in 1988 and the NL-F relation established in 1988 a record of 21.1 waiting days, which must indicate a downward trend in volume transported in that relation. (See table 3.27).

TABLE 3.27

Traffic relation	year	regulated market volume transported ( '000+)	yearly average waiting days
1) NL-F	86	982	14.1
	87	878	15.7
	88	742	21.1
2) NL-B	86	4.594	10.4
	87	4.901	11.7
	88	5.478	11.9
3) B-B+F	86	13.032	9.5
	87	13.454	9.6
	88	13.433	8.5
4) B-NL	86	6.331	8.6
	87	6.165	8.4
	88	6.238	7.2
5) F-B+NL	86	4.037	25.8
	87	3.397	27.8
	88	n.a	23.4

Table 3.27 shows the volume transported on the regulated market at one side and the yearly average waiting days at the other, in a time serie of three years.

The conclusion that has to be drawn from that table is that there is not always a direct relation between waiting days and volume transported in the sense that a bigger demand will decrease the number of waiting days.

The explanation of this is simply that the demand side of that segment of the transport market is not the exclusive dominating factor, the supply side has also to be taken into account. In other words, the number of ships offering their services on the bourses, sometimes more than the demand of transport, determine the number of waiting days. But the number of ships offering their services on the bourses depends directly on the prices for transport on the free market.

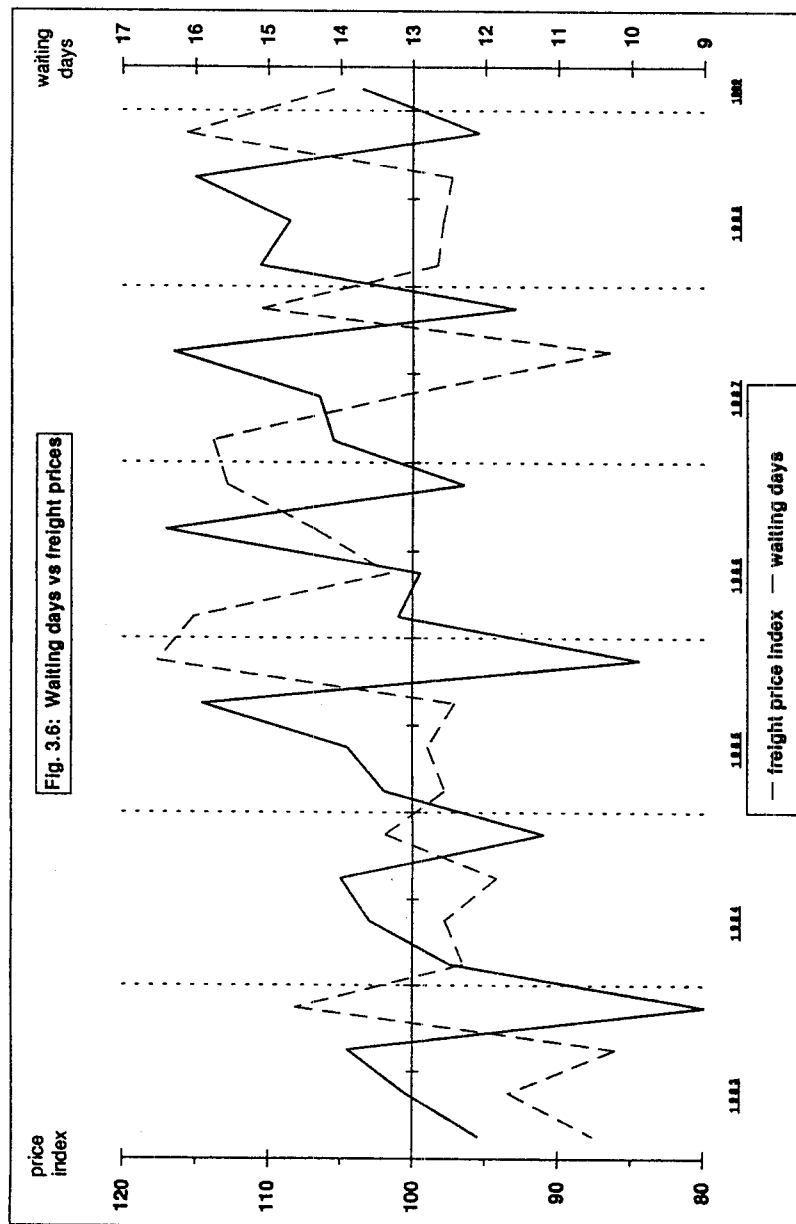


For, the lower the prices on the Rhine are the more likely it is that ship owners will turn to the regulated segment of the market with fixed prices. Also, the higher the prices on the Rhine the more reluctant a shipper will be to wait on the bourse.

Consequently, waiting time on the bourses will also follow the prices on the free market and therefore gives an indication for the market as a whole.

This illustrates the interconnection of the market segment. Rhine, North/South, domestic, free and regulated market are strongly interconnected, in fact parts of one market.

Figure 3.6 gives average waiting days and dry cargo price indices developments from 1983 onwards to visualize the situation on the market. Clearly one can see the contradictory seasonal effects in prices and waiting days.



### 3.4.3. Cost and price indices

Cost and price indices were presented for the first time in the Annual Report 1983. In 1984 the system was further developed. In 1985 minor improvements were made.

All indices are on the basis 1.1.1979 = 100. This year was chosen by the CCR as a base year for Rhine market observation, because it is considered to be the most recent year with equilibrium between supply and demand.

Some of the tables and graphs that are summarized and analyzed here have already been presented in the quarterly reports N°26 and 28.

#### Methodology

Cost developments are presented by means of indices, based on the actual cost developments on 47 international traffic relations representing total international waterway transport in the Community. By weighting the various relations and cost elements, cost indices are found for each of the bilateral traffic relations between Member States and for the North-South and Rhine inland waterway transport markets.

The calculations per transport relation are carried out separately for a ship of each nationality, as long as the ship type forms a substantial part of that nation's fleet.

Cost indices are calculated for four shiptypes :

- ships having a carrying capacity of 350 tonnes;
- ships having a carrying capacity of 600 tonnes;
- ships having a carrying capacity of 1200 tonnes;
- pusher units.

When the previous reports were presented, cost information for pusher units was not yet available. These cost indices were therefore based on the costs of big motorvessels (220 tonnes). The results of a detailed study on costs of pusher units became available in 1985. The corrected results over the period 1979-1985 are included in the graphs and tables presented in the annual reports since 1985.

The total costs of a ship move are divided into the following main categories ;

- 1) labour cost
- 2) capital cost
- 3) fuel cost
- 4) other costs.

Only fuel cost is treated as a variable cost. The other categories are regarded as fixed costs. The annual fixed costs are divided by the annual operating hours ; different annual operating hours are assumed for each ship type. The specific ship move is then charged for the costs per operating hour, multiplied by the total length of the trip times.

Cost developments by ship type (in ECU)

Table 3.28 Cost Indices (total costs) by ship type in ECU

Year	350 tonnes	600 tonnes	1200 tonnes	pushed units
1.1.1984	137	132	144	173
1.1.1985	146	139	150	182
1.1.1986	151	142	153	183
1.1.1987	151	143	150	160
1.1.1988	153	145	152	160
1.7.1988	152	144	151	158
1.1.1989	153	143	153	163

The fuel cost increase in the years 1979/1985 and the steep decrease in 1986 was most strongly felt for pusher units.

Apart from the oil prices the cost developments over the years were relatively small. During the last half of 1987 there was only a minor cost increase for the smallest vessels. For the other vessels the costs stayed at the same level. Table 3.29 gives a closer look at the fluctuations of the cost components for the different ship types during 1988.

Table 3.29 Cost development by element and ship type in ECU in the year 1988

Indices per 1.1.1988 (1.1.1979=100)  
and per 1.1.1989

LOADING CAPACITY	COST ELEMENT									
	LABOUR COSTS		CAPITAL COSTS		FUEL COSTS		OTHER COSTS		TOTAL COSTS	
	1.1.88	1.1.89	1.1.88	1.1.89	1.1.88	1.1.89	1.1.88	1.1.89	1.1.88	1.1.89
350 T	169	169	115	115	159	162	147	147	153	153
600 T	155	151	121	121	140	145	147	146	145	143
1200 T	170	168	127	128	159	167	153	154	152	153
PUSH TOW *	171	169	144	146	162	171	163	164	160	163

Comparison between cost and price developments

Figures 3.7 to 3.10 give a picture of the cost and price developments by element, market and type of cargo.

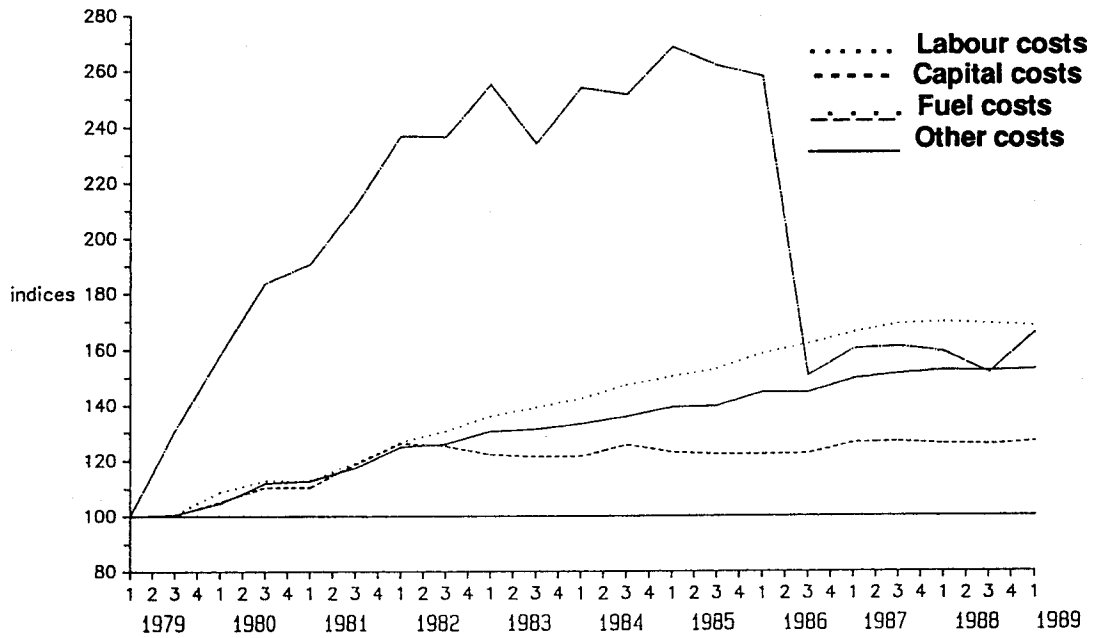
Price indices in fig. 3.9 are based on revenues per tonne and revenues per trip (compensated with low water surcharge). Under normal circumstances the price index per tonne equals the price index per trip (price per tonne X tonnes carried = revenue per trip). However, in periods of low water levels when ships have a reduced carrying capacity, transporters receive a "low water surcharge" to keep the revenues per trip on a certain level. In this situation prices per tonne will show an upswing while prices per trip do not.

As cost indices are calculated on the basis of costs per trip, the cost indices in fig. 3.9 have to be compared with the compensated prices that is the price indices per trip.

In fig. 3.10 the price indices on the regulated market went down during 1988, even - for the first time - below the cost indices, due to a correction of the tariffs in France.

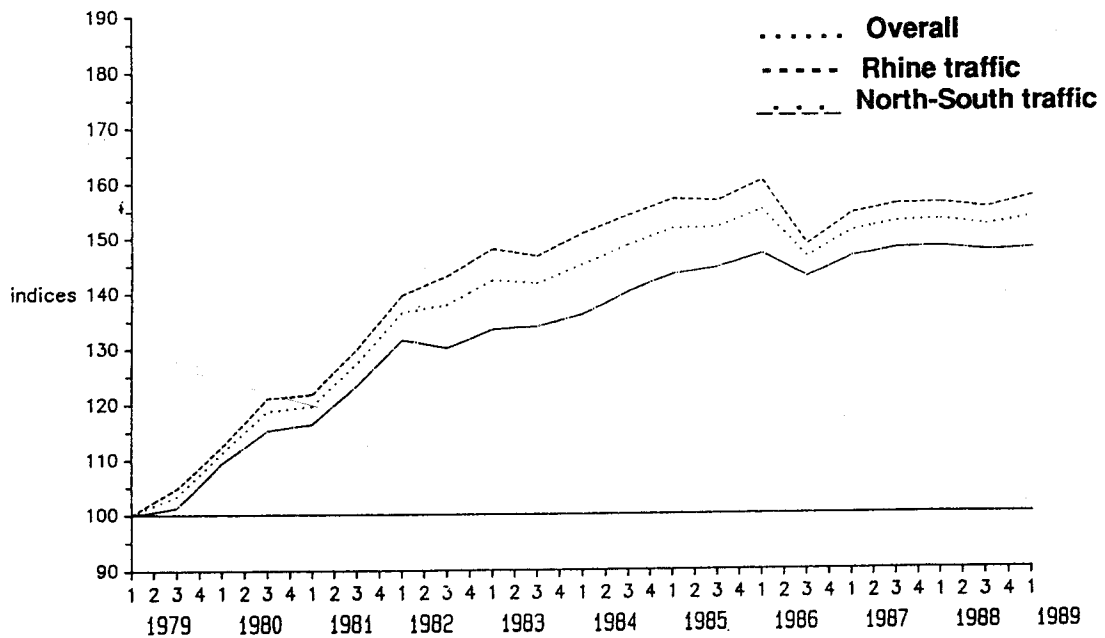
**Fig. 3.7: Cost development by element in ecu indices**

1.1.1979 = 100



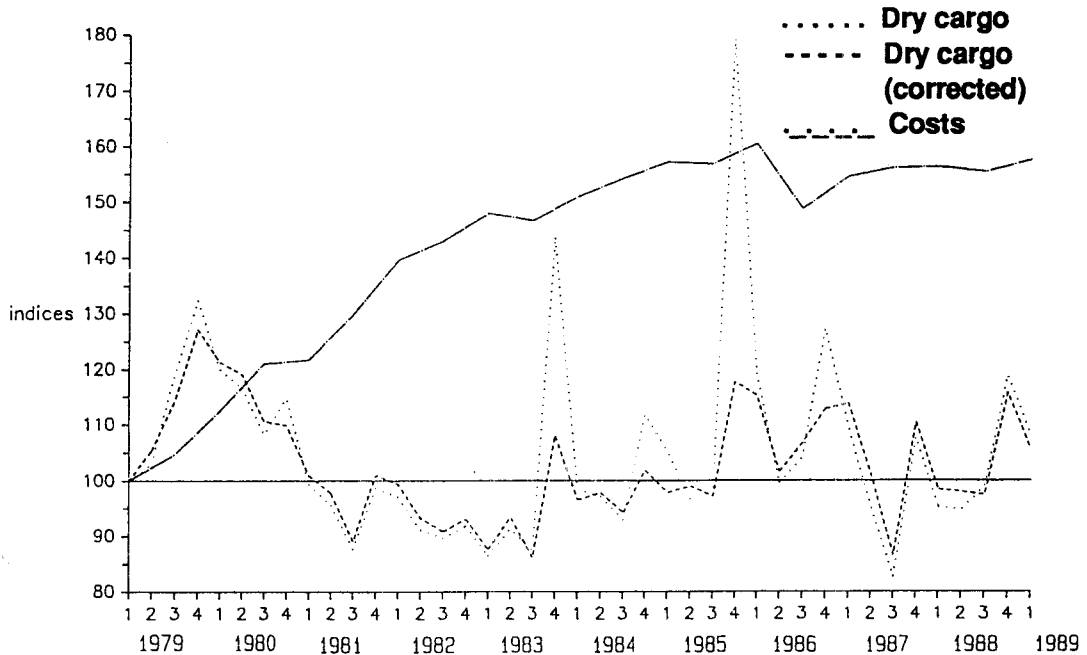
**Fig. 3.8: Development of total costs in ecu indices**

1.1.1979 = 100



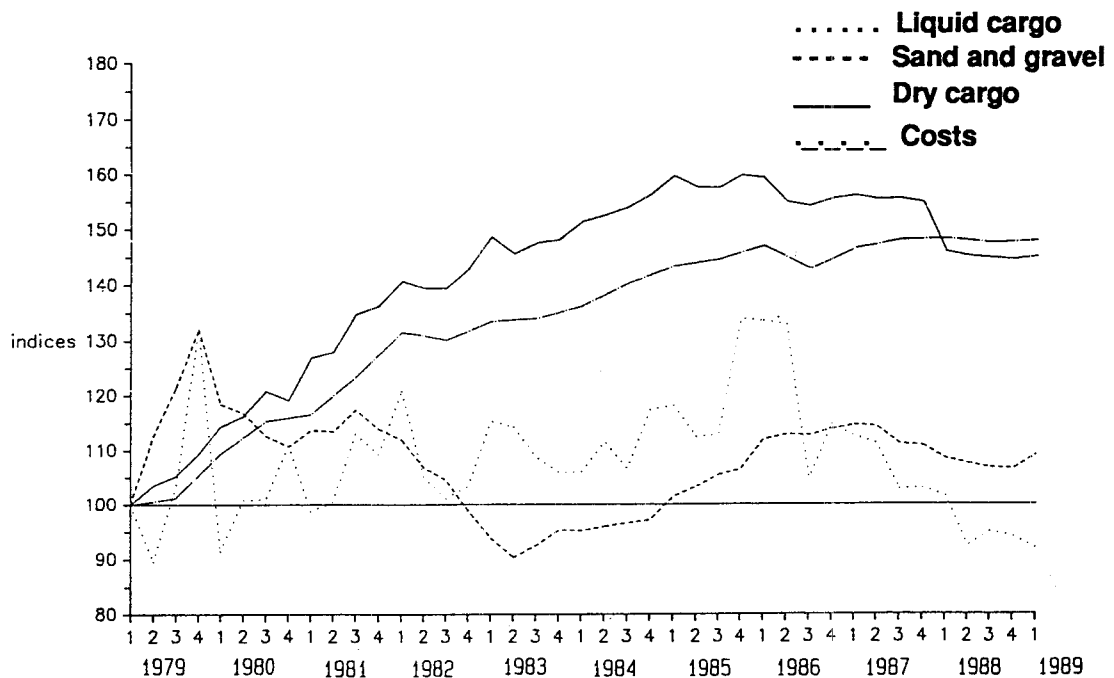
**Fig. 3.9: Cost- and price indices for dry cargo on the Rhine market**

1.1.1979 = 100



**Fig. 3.10: Cost- and price indices for sand and gravel, dry and liquid cargo on the North-South market**

1.1.1979 = 100



#### 3.4.4. Profitability\*

It is always difficult to say something in general about the profitability of the inland waterway transport industry. Differences are substantial between one ship and another depending very much on the size of the ship and on what market sector it is operating.

Table 3.30 however, gives some indication, and shows that the decrease in profitability that started in the early eighties came to an end in 1989.

	<u>1980</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>
revenues	100	88	83	73	72	75
costs	100	107	100	98	97	97

The profitability over the last 10 years can be summarised as follows:

- 1978: relatively big improvement of the profitability
- 1979: profitability improvement but less than in 1978
- 1980: slight decrease in the profitability
- 1981: strong decrease in the profitability
- 1982: decrease in the profitability between 1980 and 1981
- 1983: a slight improvement continued through the year
- 1984: a slight decrease to the level of 1982
- 1985: profitability improvement restricted to ships > 600 tonnes
- 1986: In spite of decreasing transport prices, a slight improvement of the profitability due to cheap gas-oil.
- 1987: profitability decrease, in spite of lower average cost level as a result of low revenues.
- 1988: increase in demand, improvement in profitability in comparison with 1987 on every market sector with the exception of liquid cargo.

Forecast for the near future:

It is generally expected that the EC scrapping system in combination with the present trend in demand will lead to a new equilibrium between demand and supply in the near future. This should lead to a better utilisation of the vessels that will stay on the market and also to a higher revenue level per tonne.

Finally, Table 3.31 gives a more detailed view of profitability showing the revenues per tonne in ECU/day in 1987 and 1988 per ship size and most relevant market sectors plus the growth rate 87/88.

**Table 3.31**

**Revenues in ECU per tonne/day**

ship size	market sector	1987	1988	growth rate %
< 400	domestic	0,21	0,24	12,2
	North/South	0,26	0,24	- 6,7
400-600 T	domestic	0,23	0,21	- 5,8
	North/South	0,33	0,37	11,8
	Rhine	0,46	0,47	1,9
600-800 T	domestic	0,21	0,23	6,1
	Rhine	0,39	0,43	10,0
800-1200 T	Rhine	0,37	0,40	8,2

The following can be said about the development of profitability in addition to the figures shown in Table 3 above.

- Domestic transport of ships between 400-600 tonnes: expectations are for a decrease in profitability.
- The same can be said for peniches 300-400 tonnes on the North/South market.
- On the Rhine the profitability will increase for ships > 600 tonnes.
- Fuel cost will go down compensating for the increase in costs like depreciation, interest, repair and service costs.
- In general higher revenues and the expected stabilization of costs will lead to an improvement in profitability.

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\* Source NEA profitability study inland waterway transport 1986/88

### 3.5 Infrastructure

#### 3.5.1. General

The network of the inland waterways transport market consists of the river Rhine (navigable for push convoys up to 10.000 tonnes) and its branches, interconnected by Canals with the Meuse, the Schelde and the Elbe, navigable for vessels of at least 1350 tonnes. The Rhine-Donau connection is under construction and will be ready in 1993.

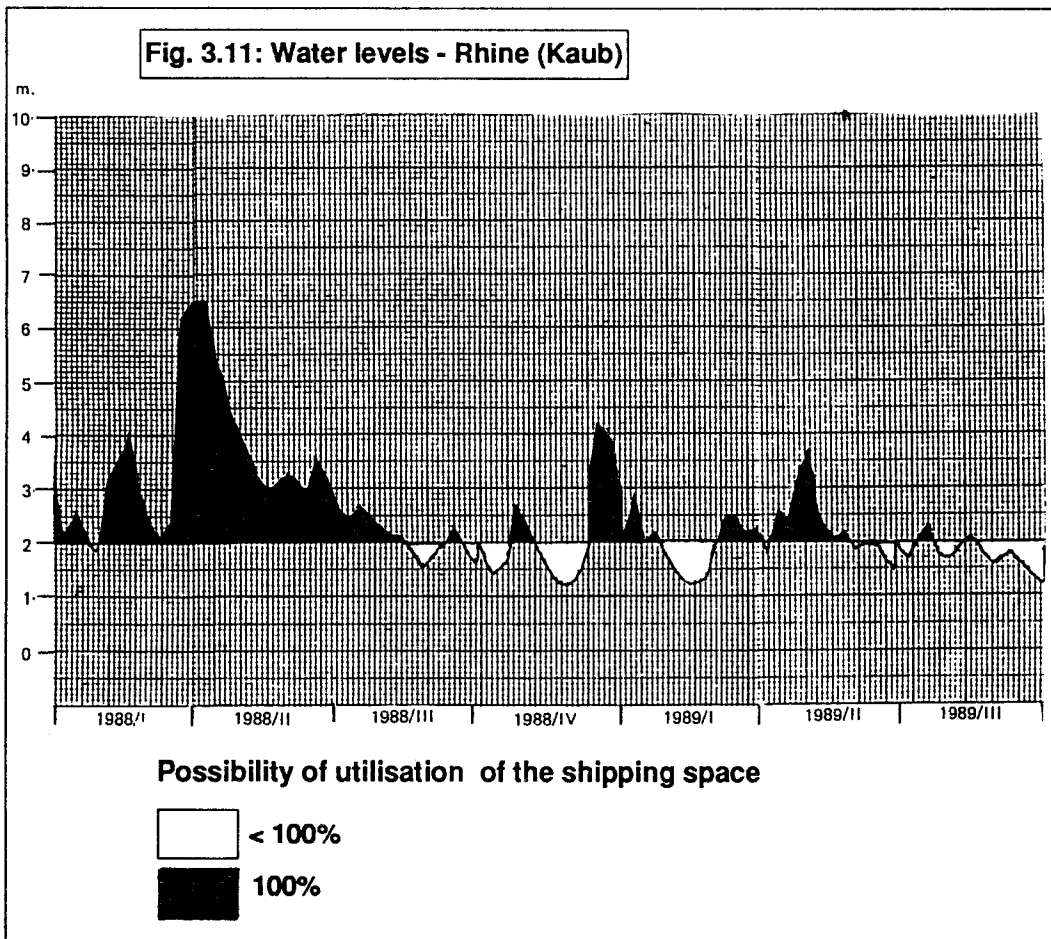
For the Seine and Rhone rivers the situation is different. Although navigable for push convoys up to 5000 tonnes these two rivers are connected with the Rhine by very small canals. Navigable on the Seine-Belgium connection for ships smaller than 600 tonnes, Rhône-Rhine for 350 tonnes only.

That is why bigger ships are physically bound in a certain area the so-called "bateaux captives".

#### 3.5.2. Water levels Rhine

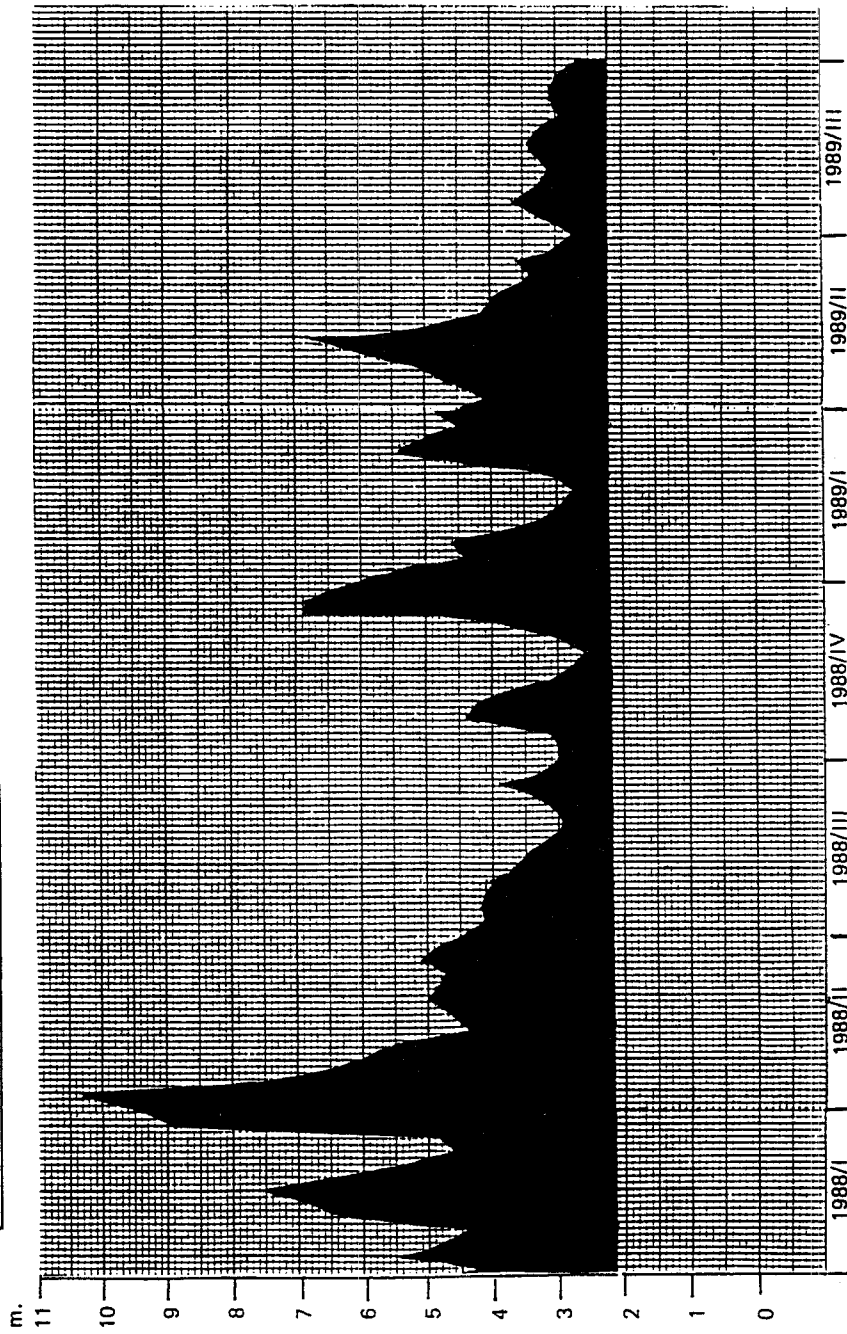
For the Rhine, apart from the influence of the periodic low water level, it must be admitted that the infrastructure poses hardly any major problems. The absence of bottlenecks is due to the natural quality of the river and to the constant effort to improve navigability.

In 1988 as is shown in figures 3.11 and 3.12 the river Rhine was navigable without restrictions for a long period of time.

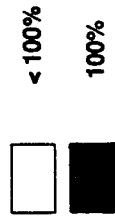




**Fig. 3.12: Water levels - Rhine (Ruhrort)**



**Possibility of utilisation of the shipping space**



### 3.5.3. The Rhine-Main-Danube Link

The completion of the Main-Danube Canal in the early nineties will provide a waterway artery across Europe from the North Sea to the Black Sea. This artery, with a total length of 3 500 km, will link 13 states.

The Main-Danube canal extends from Bamberg on the Main to Kelheim on the Danube. It is 171 km long and contains 16 locks, including those needed to traverse the Franconien Jura.

The total cost of the canal will amount to about 3,5 billion DM. The canal is an inland waterway suitable for use by self-propelled craft of up to 2000 t and pushed convoys of up to 3500 t (inland waterway class IV).

The new Rhine-Main-Danube link will improve the hinterland's connection with the North Sea ports, especially those at the mouth of the Rhine, and will provide the technical facilities for an uninterrupted traffic flow to and from the Danubian countries.

For EC Member States this offers the prospect of an increased export potential to the Danubian countries by inland waterway, and for the North Sea ports in particular this new waterway artery substantially increases the hinterland. However, the European inland waterway transport sector, already confronted with considerable overcapacity, fears that additional market problems will arise from the advent of the new Danubian facilities.

Some years ago, various bodies forecast the likely traffic volume. The predicted figures varied from 4 to 14 million tonnes a year. Experts now believe a figure of 5 - 7 million tonnes a year to be realistic for the total traffic volume (1). To a great extent these values depend on such future determinants as technical advances in shipbuilding. Recent steps forward including the carriage of containers by inland vessels, ro-ro traffic, inland/maritime traffic carried by ships suitable for seagoing service and the LASH transport system between the Danube and overseas destinations suggest that with the passage of time further transport facilities will emerge.

In any case there are no grounds for excessive optimism. It must not be forgotten that the road and rail links to and from the Danubian countries are much shorter and quicker, a major reason for which is the larger number of locks on the Main and the Main-Danube canal. This factor limits the cost advantage intrinsic to transport by inland waterways.

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(1) Source : ECMT, Paris



## CHAPTER 4

### RAIL

#### Contents

- 4.1. Introduction
- 4.2. Total Intra EUR tonnages 1988
- 4.3. Intra EUR-12 International Rail transport by NST chapter
- 4.4. National traffic trends
- 4.5. National traffic by NST chapter
- 4.6. Rail traffic with third countries
- 4.7. Use of Community rail network
- 4.8. Carrying capacity of rolling stock
- 4.9. Railway tariff evolution

#### 4.1. INTRODUCTION

The statistical data on traffic in this chapter have been supplied to the Statistical Office of the European Communities under Directive 1970/80 by the Statistical Offices of the Member States.

The data on rail tariffs have been supplied by the railway companies.

The data on capacity (number of wagons) have been taken from the International Railway Statistics publication of the International Union of Railways.

Slight inconsistencies in some totals for different tables are possible, and are due to rounding of figures.

#### 4.2. TOTAL INTRA EUR TONNAGES 1988

The evolution of the tonnages (1,000 T) has been as follows :

<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>88/87</u>
65,254	64,085	68,368	6,7%

The inward traffic to NL, L, GR, E & P has increased by more than 14% (twice the Community average) for each Member State. But the four Member States (D, F, I & B) that count for almost 80% of the intra EC market have all been below the 6,7% average increase.

The most significant positive variations on individual relationships have been

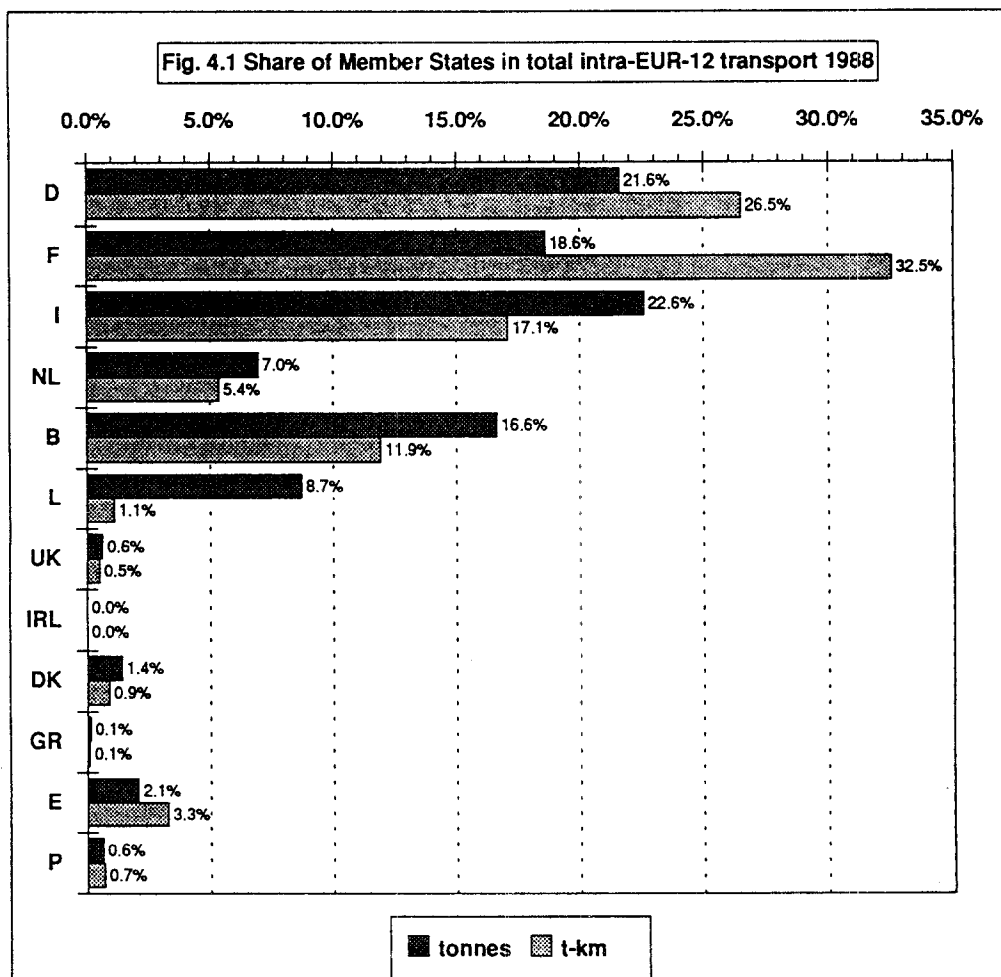
<u>TO</u>	<u>FROM</u>
D	NL, B
F	I
I	D, B
NL	D, F, B, L
B	D, L
L	D, F, B

The data in each cell in table 4.1 represent inward traffic to the Member State in the column, from Member States in the respective row.

The row at the bottom therefore shows total inward traffic tonnes to each Member State.

TABLE 4.1 INTRACOMMUNITY TRAFFIC (1000 T)

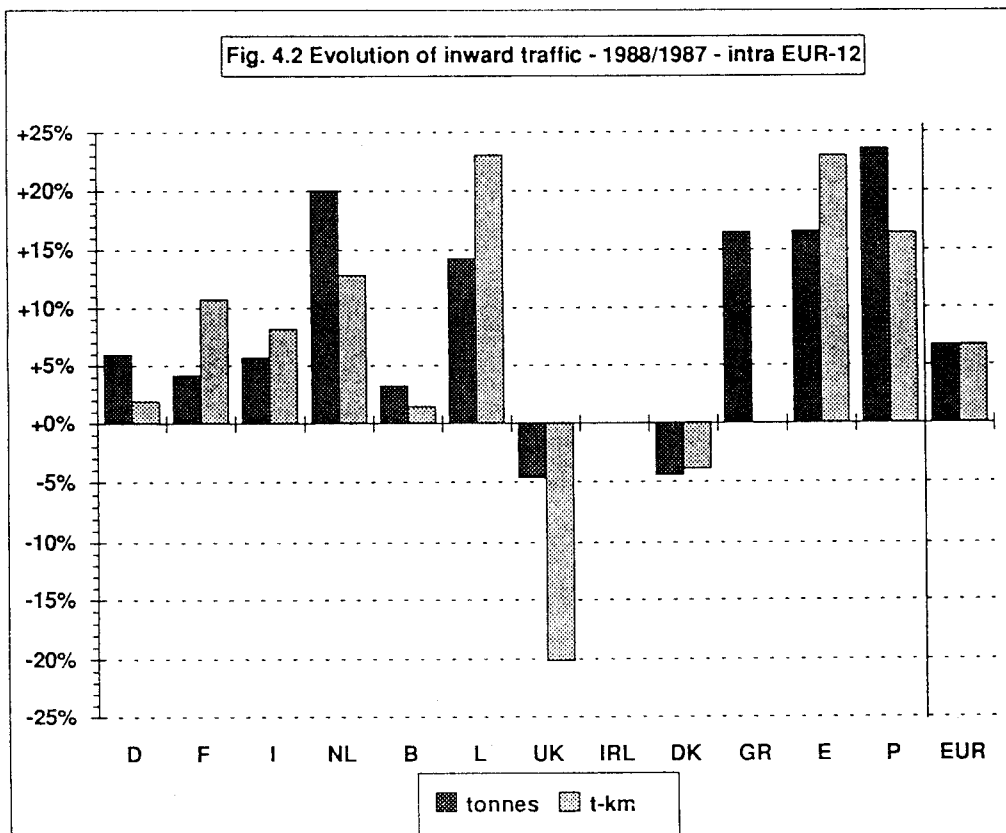
from	to	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
	87		4414	6152	1236	3482	1517	83		649	42	481	11	18067
D	88		4293	6697	1346	3805	1716	102		589	59	514	23	19144
	88/87		-3%	+9%	+9%	+9%	+13%	+23%		-9%	+40%	+7%	+109%	+6.0%
F	87		3613	5924	538	4245	322	220		121	7	347	47	15384
	88		3304	6017	655	4237	378	213		115	7	554	56	15536
	88/87		-9%	+2%	+22%	+0%	+17%	-3%		-5%	+0%	+60%	+19%	+1.0%
I	87		1528		388	1052	1	51		130	17	29	23	5448
	88		2047		420	969	2	50		178	16	27	17	6087
	88/87		+6%	+34%	+8%	-8%	+100%	-2%		+37%	-6%	-7%	-26%	+11.7%
NL	87		1346	588		953	17	26		8	4	4	0	6927
	88		4653	570		932	16	37		8	2	4	1	7576
	88/87		+17%	-3%	-2%	-2%	-6%	+42%		+0%	-50%	+0%		+9.4%
B	87		2534	1444	1699		3346	3		65	3	24	1	13420
	88		2928	1611	2193		3833	2		43	1	29	0	14913
	88/87		+16%	+12%	+29%	+15%	+15%	-33%		-34%	-67%	+21%	-100%	+11.1%
L	87		689	131	72	1189		1		20	0	8	1	2455
	88		747	99	109	1330		0		21		11		2819
	88/87		+8%	-24%	+51%	+12%		-100%		+5%		+38%	-100%	+14.8%
UK	87		99	206	2	2	7			1	0	23	14	418
	88		86	227	1		6			0	0	21	12	404
	88/87		-13%	+10%	-50%	-100%	-14%			-100%		-9%	-14%	-3.3%
IRL	87													0
	88													0
DK	87		448	148	8	22	0	0			0	1		658
	88		417	198	10	19	0	1			0	2		686
	88/87		-7%	+34%	+25%	-14%						+100%		+4.3%
GR	87		45	3	2	12	2	1		0				73
	88		25	1	3	12	1	1		0				48
	88/87		-44%	-67%	+50%	+0%	-50%	+0%						-34.2%
E	87		309	166	18	59	0	0		12	0		256	849
	88		259	142	18	66	1	22		7	0		327	875
	88/87		-16%	+14%	+0%	+12%				-42%			+28%	+3.1%
P	87		6	1	0	0		64		0		298		386
	88		4	1	0	0		0				254		280
	88/87		-33%	+0%				-100%				-15%		-27.5%
EUR-12	87		13953	14626	3963	11016	5212	449	0	1006	73	1215	353	64085
	88		14784	15454	4755	11370	5953	428	0	961	85	1416	436	68368
	88/87		+6.0%	+4.1%	+20.0%	+3.2%	+14.2%	-4.7%		-4.5%	+16.4%	+16.5%	+23.5%	+6.7%



For the medium term trends, the level of activity in 1988, although showing a slight recovery, is still below 1984 and 1985 levels (see table 4.2).

**TABLE 4.2** INTERNATIONAL INTRA EUR-12 TRAFFIC (1000 T)

	1984	1985	1986	1987	1988	88/84	88/87
D	13743	14616	13804	13953	14784	+7.6%	+6.0%
F	15854	15247	13361	12219	12726	-19.7%	+4.1%
I	15713	15501	13863	14626	15454	-1.6%	+5.7%
NL	4951	4813	4373	3963	4755	-4.0%	+20.0%
B	12873	13694	10937	11016	11370	-11.7%	+3.2%
L	5538	6067	5800	5212	5953	+7.5%	+14.2%
UK	676	642	540	449	428	-36.7%	-4.7%
IRL	0	0	0	0	0		
DK	914	1167	1145	1006	961	+5.1%	-4.5%
GR	151	148	101	73	85	-43.7%	+16.4%
E	825	803	1043	1215	1416	+71.6%	+16.5%
P	247	178	286	353	436	+76.5%	+23.5%
<b>TOTAL</b>	<b>71485</b>	<b>72876</b>	<b>65253</b>	<b>64085</b>	<b>68368</b>	<b>-4.4%</b>	<b>+6.7%</b>



#### 4.3. INTRA EUR-12 INTERNATIONAL RAIL TRANSPORT BY NST CHAPTER

When the total increase (6,7 %) of tonnes transported in Intra International traffic is split in the different NST-chapters, it can be observed that :

Chapters 4 (Iron ore, ...) 5 (metal products), 7 (fertilizers) and 9 gain over that overall increase whereas the rest stay below it. Diminution of chapter 1 and 3 are very significant (foodstuff and animal fodder and petroleum and its products).

As a consequence chapters 4, 5, 7 and 9 increased their relative importance in their total contribution to international Intra Community transport (see table 4.3.).

The trends shown in table 4.4 for the different NST chapters show on the contrary that chapters 1 and 3 together with 8 and 9 have positive developments.



TABLE 4.3 INTRA EUR-12 TRAFFIC BY NST CHAPTER AND DESTINATION

NST	M.S.	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12	
		87	88	87	88	87	88	87	88	87	88	87	88	87	88
0	87	1107	441	1544	315	531	20	69	93	93	3	267	70	4460	
	88	855	397	1914	261	508	18	38	66	66	3	473	115	4648	+4.2%
1	87	597	275	337	115	1573	0	127	70	70	2	15	28	3139	
	88	490	213	149	258	1502	0	141	84	84	16	18	24	2895	-7.8%
2	87	490	2007	283	395	1124	1380		19	19	0	4	0	5702	
	88	452	1623	340	414	1303	1459		10	10	0	1		5602	-1.8%
3	87	269	328	356	85	15	875	1	7	7	0	0		1936	
	88	218	221	357	80	9	884	1	6	6				1776	-8.3%
4	87	3271	640	1987	30	284	1713	0	5	5		2	1	7933	
	88	3795	308	1946	393	365	2162	0	1	1	0	0	1	8971	+13.1%
5	87	2863	3865	2341	189	3402	755	91	145	145	0	202	59	13912	
	88	3331	4352	2394	249	4001	909	96	129	129	0	186	56	15703	+12.9%
6	87	576	258	1821	1490	230	354	41	86	86	0	9	16	4881	
	88	669	255	1938	1596	134	407	52	89	89	0	7	22	5169	+5.9%
7	87	486	1153	85	3	140	50	2	18	18		5	1	1943	
	88	463	1408	64	1	137	40	2	34	34	0	0	3	2152	+10.8%
8	87	1473	1025	777	384	1044	10	44	95	95	7	72	18	4949	
	88	1567	1156	732	444	834	4	35	97	97	5	260	21	5155	+4.2%
9	87	2819	2228	5095	956	2672	54	75	467	467	62	639	160	15227	
	88	2944	2792	5620	1059	2577	69	61	448	448	62	471	194	16297	+7.0%
TOT.	87	13951	12220	14626	3962	11015	5211	450	1005	1005	74	1215	353	64082	
	88	14784	12725	15454	4755	11370	5952	427	964	964	86	1416	436	68369	+6.7%

Share in total (%)	1988		1987		1986	
	1988	1987	1988	1987	1988	1987
	6.8%	7.0%	6.0%	6.0%	6.0%	6.0%
	4.2%	4.9%	4.6%	4.6%	4.6%	4.6%
	8.2%	8.9%	10.9%	10.9%	10.9%	10.9%
	2.6%	3.0%	2.8%	2.8%	2.8%	2.8%
	13.1%	12.4%	12.9%	12.9%	12.9%	12.9%
	23.0%	21.7%	22.1%	22.1%	22.1%	22.1%
	7.6%	7.6%	7.4%	7.4%	7.4%	7.4%
	3.1%	3.0%	3.6%	3.6%	3.6%	3.6%
	7.5%	7.7%	7.3%	7.3%	7.3%	7.3%
	23.8%	23.8%	22.3%	22.3%	22.3%	22.3%
	100%	100%	100%	100%	100%	100%

88/87
+4.2%
-7.8%
-1.8%
-8.3%
+13.1%
+12.9%
+5.9%
+10.8%
+4.2%
+7.0%
+6.7%

TABLE 4.4 INTRA EUR-12 TRAFFIC BY NST CHAPTER

year	1984	1985	1986	1987	1988	88/87 (%)	87/84 (%)
NST							
0	5837	5250	4487	4460	4648	+4.2%	-23.6%
1	2435	3006	2962	3139	2895	-7.8%	+28.9%
2	9650	8567	6901	5702	5602	-1.8%	-40.9%
3	1649	1895	1791	1936	1776	-8.3%	+17.4%
4	9821	10169	8153	7933	8971	+13.1%	-19.2%
5	14510	15355	14207	13912	15703	+12.9%	-4.1%
6	5100	5187	4669	4881	5169	+5.9%	-4.3%
7	2759	2722	2298	1943	2152	+10.8%	-29.6%
8	4308	4753	4702	4949	5155	+4.2%	+14.9%
9	12997	13884	15083	15227	16297	+7.0%	+17.2%
TOTAL	69066	70788	65253	64082	68368	+6.7%	-7.2%

4.4. NATIONAL TRAFFIC TRENDS

The estimated 1988 figure for EC national traffic in tonnes is 1,8% higher than for the previous year. This increase is due to a moderate increase in all the main networks except B. In the long term the trend is negative except for I. The huge positive percentage in the UK is explained by a very low output in 1984 (industrial action).

Table 4.5 shows the details.

TABLE 4.5 NATIONAL TRAFFIC (1000 T)

	1984	1985	1986	1987	1988	88/87	88/84
D	237890	238935	228267	219976	222927	+1.3%	-6.3%
F	118616	114292	104027	100638	102109	+1.5%	-13.9%
I	17895	17221	16695	18618	19417	+4.3%	+8.5%
NL	5874	5529	5274	5178	5224	+0.9%	-11.1%
B	34552	34426	29750	31359	30713	-2.1%	-11.1%
L	3309	2539	2521	2567	2621	+2.1%	-20.8%
UK	79642	139322	137089	143667	148812	+3.6%	+86.9%
IRL	3382	3379	3126	3014	3010	-0.1%	-11.0%
DK	2392	2351	2398	2091	2237	+7.0%	-6.5%
GR	1530	1205	1235	918	1188	+29.4%	-22.4%
E			25028	24318	23854	-1.9%	
P			4690	4980	5178	+4.0%	
TOTAL	505082	559199	560100	557324	567290	+1.8%	

#### 4.5. NATIONAL TRAFFIC BY NST CHAPTER

In table 4.6 figures of tonnes transported by NST chapter are given for all Member States.

The numbers refer to tonnes received by each Member State.

At a EUR-12 level the relative increase/decrease 1988/1987 is given as a percentage.

NST chapters 5 (metal) and 6 (Building material and minerals) show important increases, whereas chapters 0 (agriculture), 3 (petroleum), 7 (fertilizers) and 9 (transport equipment, manufacture of metal, ...) have decreased.

Figure 4.3 shows the share of each NST-chapter in total national transport for each Member State (1988), together with the global NST breakdown for national transport, all nationalities combined (EUR-12).

Table 4.7 gives the national traffic trends for each NST. (1984 and 1985 are EUR-10).

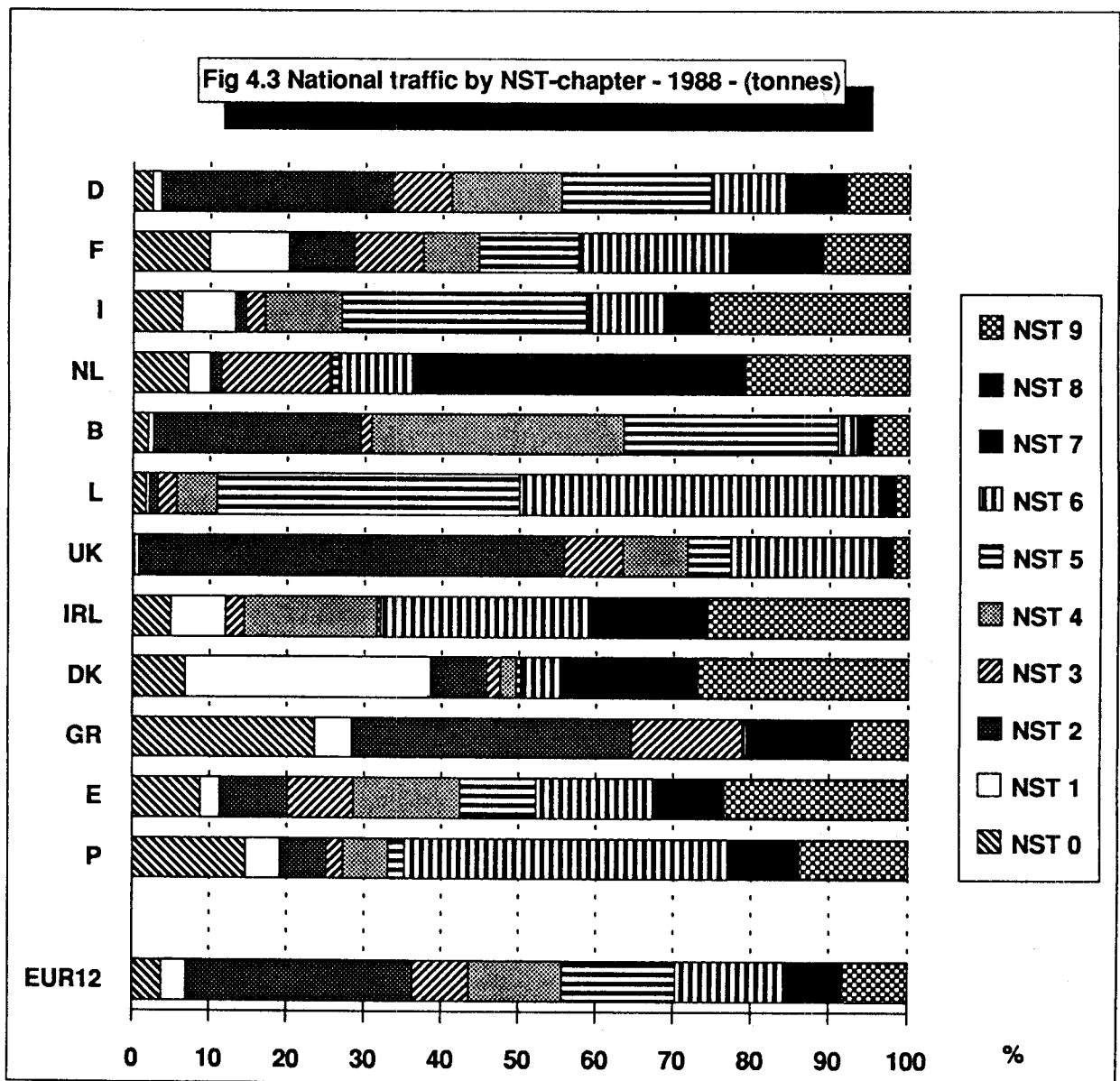


TABLE 4.6 NATIONAL TRAFFIC BY NST CHAPTER (1000 T)

	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR12	88/87	Share in total (%) 1988    1987
0	87	6677	10033	1320	412	591	46	304	149	126	300	638	22548	-1.7%	4.0%
	88	5574	10027	1219	371	605	44	352	150	153	280	757	21624		3.9%
1	87	2673	10384	1408	240	200	11	781	208	674	23	248	17561	+1.1%	3.2%
	88	2471	10536	1349	152	201	12	786	211	709	57	229	17302		3.1%
2	87	66867	9683	436	28	9824	17	77514	0	129	122	321	167396	-1.8%	30.0%
	88	66625	8538	258	72	8225	28	77532		160	431	312	164282		29.4%
3	87	18111	9498	489	754	514	59	9968	66	42	192	457	42553	-1.4%	7.6%
	88	17086	9183	481	731	447	65	10729	72	41	169	113	41151		7.4%
4	87	31242	7059	2095	16	9426	140	11615	487	34	0	288	66336	+2.0%	11.9%
	88	31684	7358	1932	17	10001	136	11821	518	46	3308	304	67125		12.0%
5	87	37145	12004	5447	50	8007	819	7314	17	14	2	104	73251	+11.9%	13.1%
	88	42780	13126	6136	46	8464	1025	7825	13	13	2	110	81887		14.6%
6	87	21189	17583	1876	440	714	1360	22778	792	113	2	2044	72757	+10.1%	13.1%
	88	21293	19809	1937	504	718	1213	26488	819	114	4	2188	78757		14.1%
7	87	6722	5034	377	1296	230	74	1036	234	180	141	349	16565	+0.4%	3.0%
	88	5920	4706	388	1286	180	49	1129	236	190	128	294	15088		2.7%
8	87	11473	7980	764	999	451	0	1735	248	172	52	137	25309	+4.9%	4.5%
	88	11695	7604	749	949	466		1644	215	204	31	153	25235		4.5%
9	87	17877	11379	4405	942	1404	39	10623	813	606	82	394	53043	-8.2%	9.5%
	88	17800	11222	4967	1097	1406	47	2769	775	603	87	719	47098		8.4%
TOT.	87	219976	100637	18617	5177	31361	2565	143668	3014	2090	916	4980	557319	+0.4%	100%
	88	222928	102109	19416	5225	30713	2619	141075	3009	2233	1189	23854	559549		100%

TABLE 4.7 NATIONAL TRAFFIC BY NST CHAPTER (1000 T)

year	1984	1985	1986	1987	1988	88/87	87/84
NST	EUR-10	EUR-10	EUR-12	EUR-12	EUR-12		
0	21631	21817	25016	22548	21624	-4.1%	+4.2%
1	15910	16119	17437	17561	17302	-1.5%	+10.4%
2	126940	174438	167440	167396	164282	-1.9%	+31.9%
3	43565	42703	44791	42553	41151	-3.3%	-2.3%
4	66620	67921	66381	66336	67125	+1.2%	-0.4%
5	76045	78476	73985	73251	81887	+11.8%	-3.7%
6	61412	66490	72935	72757	78757	+8.2%	+18.5%
7	18020	17081	16691	16565	15088	-8.9%	-8.1%
8	24958	24460	25408	25309	25235	-0.3%	+1.4%
9	49999	49692	52203	53043	47098	-11.2%	+6.1%
TOTAL	505100	559197	562287	557319	559549	+0.4%	+10.3%

4.6. RAIL TRAFFIC WITH THIRD COUNTRIES

As in the 1987 report, rail traffic with third countries is given with totals for EFTA and other countries.

The outward traffic from EUR-12 has diminished by about 5% whereas inward traffic is stable.

The high decrease of traffic from EUR-12 to DDR should be noted, explained mainly by an important decrease in the transport of solid mineral fuels.

See table 4.8 for details.

TABLE 4.8 TRAFFIC WITH THIRD COUNTRIES (1000 T)

from EUR-12		to	from		to EUR-12	
1987	1988		1987	1988		
167	140	N	44	54		
1967	1997	S	2840	2772		
22	25	SF	50	38		
7369	7579	CH	4811	4348		
5589	6082	A	5490	5836		
2509	2599	YU	1782	2203		
18	12	TR	1	1		
0	0	SU	0	0		
5156	3602	DDR	10534	10245		
501	585	PL	761	905		
1034	903	CS	4983	4706		
1106	717	H	1228	1301		
114	109	R	471	416		
459	318	BG	235	228		
13	4	others	0	16		
26024	24672	TOTAL	33230	33069		
	-4.9%	%(88/87)		+0.2%		
15114	15823	EFTA	13235	13048		
	+4.7%	%(88/87)		-1.4%		

#### 4.7. USE OF COMMUNITY RAIL NETWORK

The total picture of the use of the Community rail networks is shown in table 4.9a in Tkm for 1987 and in table 4.9b for 1988.

TABLE 4.9 a Railway traffic in mio t-km 1987

Member State	NATIONAL TRAFFIC	INTERNATIONAL TRAFFIC				TRANSIT TRAFFIC				TOTAL TRAFFIC (mio t-km)
		Inward	from	Outward	to	M.S. to	M.S. to	non M.S.	non M.S.	
		from M.S.	non M.S.	to M.S.	non M.S.	M.S.	non M.S.	to M.S.	to non M.S.	
D	34501	3687	3942	4793	5898	1165	1749	1601	459	57795
F	34210	3979	1004	6453	971	2336	658	98	10	49719
I	8031	3719	1935	2162	1127	3	34	52	20	17083
NL	1025	742	89	953	183	9	1	0		3002
B	2389	1616	135	2101	320	666	30	9	0	7266
L	108	208	0	137	3	105	15	15		591
UK	17228	87	49	121	22					17507
IRL	563									563
DK	547	181	216	131	65	0	321	167	27	1655
GR	233	31	124	5	188					581
E	9180	517	10	635	153					10495
P	1284	124	2	89	2					1501
EUR-12	109299	14891	7506	17580	8932	4284	2808	1942	516	167758

TABLE 4.9 b Railway traffic in mio t-km 1988

Member State	NATIONAL TRAFFIC	INTERNATIONAL TRAFFIC				TRANSIT TRAFFIC				TOTAL TRAFFIC (mio t-km)
		Inward	from	Outward	to	M.S. to	M.S. to	non M.S.	non M.S.	
		from M.S.	non M.S.	to M.S.	non M.S.	M.S.	non M.S.	to M.S.	to non M.S.	
D	34607	4049	4103	5165	5743	1189	1673	1572	417	58518
F	34464	4591	703	6727	954	2247	781	107	0	50574
I	8642	3836	1926	2108	1107	3	38	56	17	17733
NL	1049	804	88	1060	184	10	2			3197
B	2429	1626	136	2519	272	684	20	8	0	7694
L	107	229	0	155	3	111	23	22	0	650
UK	15040	83	37	95	9					15264
IRL	545									545
DK	587	165	198	146	62	0	163	139	14	1474
GR	250	28	122	4	174					578
E	9233	607	11	534	27					10412
P	1326	152	2	93	1					1574
EUR-12	108279	16170	7326	18606	8536	4244	2700	1904	448	168213

For each Member State a subdivision is made in National, International and Transit traffic. A distinction is made between inward or outward traffic, as well as if Member States or non Member States are involved.

Total use can be broken down as follows (Mio Tkm) :

	National	International	Transit	Total
1987	109.299	48.909	9.550	167.758
	65,0%	29,2%	5,8%	100%
1988	108.279	50.638	9.296	168.213
	64,2%	30,3%	5,5%	100%

In table 4.10a International Intra EUR-12 traffic is shown in Mio Tkm for 1987 (this includes transit traffic), and for 1988 in table 4.10b.

TABLE 4.10 a INTRACOMMUNITY TRAFFIC 1987 mio t-km

	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
D	0	2364	3760	440	1348	389	56		398	54	430	17	9256
F	2218	6	4704	362	1830	38	234		170	16	313	40	9931
I	1915	1622		226	830	2	459		173	13	46	32	5318
NL	1471	678	587	5	185	7	17		8	15	4	0	2977
B	1177	1612	1348	575	0	831	1		67	42	17	0	5670
L	308	119	80	18	309		0		19	0	2	0	855
UK	75	65	242	1	11	4	0		0	0	44	31	473
IRL							0						0
DK	301	41	173	6	21	2	0		0	3	1		548
GR	20	7	1	1	16	0	1		0	0			46
E	515	248	53	16	54		119		28	1		203	1237
P	10	20	2				10		0		228		270
EUR-12	8010	6782	10950	1650	4604	1273	897	0	863	144	1085	323	36581

TABLE 4.10 b INTRACOMMUNITY TRAFFIC 1988 mio t-km

	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR-12
D	0	2406	4117	462	1457	497	69		360	61	507	35	9971
F	1995	3	5039	395	1778	40	222		164	11	512	47	10206
I	1880	1962		334	834	3	368		216	12	44	21	5674
NL	1833	716	544	0	166	5	14		8	23	5	1	3315
B	1351	1896	1588	613		1019	0		43	32	16	0	6558
L	310	156	66	11	341		0		22	0	4	0	910
UK	66	63	225	15	12	2			0	0	28	22	433
IRL													0
DK	315	55	224	9	17	0	1			5	3	0	629
GR	10	6	1	2	14	0	0		0		0	0	33
E	397	224	41	21	52	0	39		16	0		250	1040
P	7	25	1	0	0	0	3		0	0	215		251
EUR-12	8164	7512	11846	1862	4671	1566	716	0	829	144	1334	376	39020

Compared with 1986, figures in 1987 show a slight decrease (Mio Tkm) whereas figures for 1988 show a recovery to a similar level as 1986 due mainly to intra-Community traffic.

INTRA EUR

	<u>1986</u>	<u>1987</u>	<u>1988</u>
National	110.810	109.299	108.279
International	32.707	32.471	34.776
Transit	4.105	4.284	4.244
Total	147.622	146.050	147.299

A further analysis has been done to compare the Tkm in each Member State with the length of its own network. (Table 4.11) (Tkm in each Member State have been divided by the length of the network.)

The index will be the "average yearly number of tonnes supported by the network", or in other words a measure of the average intensity of the use of the network.

L, D and B get the highest indices with more than 2 Mio tonnes.

TABLE 4.11 Average use of networks

Member State	Length of Network (km)	Index of Use
D	27421	2.11
F	34448	1.44
I	15983	1.07
NL	2809	1.07
B	3568	2.04
L	270	2.19
UK	16630	1.05
IRL	914	0.62
DK	2476	0.67
GR	1565	0.37
E	12667	0.83
P	2479	0.61
EUR-12	121230	1.38

#### 4.8. CARRYING CAPACITY OF ROLLING STOCK

Data on the number of wagons for carriage of goods are assembled for all Member States for 1986, 1987 and 1988. A distinction is made between national company-owned and privately owned cars.

All state companies except P (Portugal), NL (Netherlands) and GR (Greece) have diminished their capacities expressed in tonnes, some of them quite significantly (D, F, UK and DK). Although at Community level the capacity is stable, in the private sector there is not an equal trend. NL, B and L have an increase of over 10% and DK shows a decrease of over 18%. In general the unit capacity is higher in the private sector than in state-owned companies.

See table 4.12 for details.



**TAB.4.12 Carrying capacity of rolling stock ( numbers of waggons and total capacity in tonnes )**

Member State	company	1986		1987		1988		87/86	88/87	88/86
		number	capacity	number	capacity	number	capacity			
D	national	248876	8547117	233142	8106615	220357	7708089	-5.2%	-4.9%	-9.8%
	private	50122	2195085	50580	2258453	50917	2292037	2.9%	1.5%	4.4%
F	national	126646	5269620	108654	4583486	100655	4312741	-13.0%	-5.9%	-18.2%
	private	73369	3229254	71547	3182564	73081	3208099	-1.4%	0.8%	-0.7%
I	national	97998	3301878	95051	3224316	89161	3175897	-2.3%	-1.5%	-3.8%
	private	12833	362691	12366	376388	12192	345033	3.8%	-8.3%	-4.9%
NL	national	6832	210726	6531	202790	6629	214550	-3.8%	5.8%	1.8%
	private	1401	62959	1490	75829	1481	75077	20.4%	-1.0%	19.2%
B	national	34791	1411110	33383	1375075	31972	1335217	-2.6%	-2.9%	-5.4%
	private	2854	134401	3005	151236	3137	175527	12.5%	16.1%	30.6%
L	national	2555	100777	2543	100199	2539	100088	-0.6%	-0.1%	-0.7%
	private	113	6613	120	7317	121	7344	10.6%	0.4%	11.1%
UK	national	33659	1061866	28884	959851	24972	881533	-9.6%	-8.2%	-17.0%
	private	14071	559529	14072	569157	14341	570615	1.7%	0.3%	2.0%
IRL	national	1912	49304	1898	48575	1889	48783	-1.5%	0.4%	-1.1%
	private	47	943	47	903	47	903	-4.7%	0.0%	-4.7%
DK	national	4881	149048	4571	139925	4303	133688	-6.1%	-4.5%	-10.3%
	private	532	12861	343	9518	370	10485	-26.0%	10.2%	-18.5%
GR	national	8901	230988	8898	230913	9005	234088	0.0%	1.4%	1.3%
	private									
E	national	31828	1051708	31009	1041370	30381	1031493	-1.0%	-0.9%	-1.9%
	private	9397	378848	8787	354846	8549	345230	-6.3%	-2.7%	-8.9%
P	national	4933	136218	4991	142120	4939	145117	4.3%	2.1%	6.5%
	private	132	5463	114	5040	97	4754	-7.7%	-5.7%	-13.0%
TOTAL	national	603812	21520360	559555	20155235	526802	19321284	-6.3%	-4.1%	-10.2%
	private	164871	6948652	162471	6991251	164333	7035104	0.6%	0.6%	1.2%

#### 4.9. RAILWAY TARIFF EVOLUTION

Tariff indices are computed by five railway companies (D, F, I, NL and B) based on a basket tariff for the most significant type of goods.

These indices are calculated for the transport relationships among those Member States.

In Table 4.13 the change of the indices for 1988 are shown. All relationships to and from I show the higher increases in relation with the higher inflation index in that Member State.

Table 4.13

Tariffs indices (Q4 87/Q4 88)

	D	F	I	NL	B
D		129,6 130,8	141,8 148,7	116,7 117,2	128,4 128,4
F	132,8 134,2		173,4 179,2	137,3 138,2	148,4 149,7
I	130,9 138,3				
NL	118,4 118,4	124,3 124,3	142,2 142,2		144,4 145,6
B	125,7 124,6	147,1 148,5	163,3 166,0	138,9 140,1	

Tariff index variation

	D	F	I	NL	B
D		1,2	6,9	0,5	0
F	1,4		5,8	0,9	1,3
I	7,6	-		-	-
NL	0	0	0		1,2
B	(1,1)	1,4	2,7	1,2	



## CHAPTER 5

### COMBINED TRANSPORT

#### Rail container transport

- 5.1. The data in paragraph 5.1. have been established with the assistance of Intercontainer (Société Internationale pour le transport par transcontainers); an enterprise owned by 25 European railway companies for the international carriage of containers. These data cover container movements by rail in Europe which is a wider area than the Community.

New standards for container transport by rail were set in 1988. The upward trend recorded in 1988 in the volume of traffic and in TEU-km was unexpectedly strong. The volume of traffic rose overall by 5.3% to 974,066 TEU with loaded movements increasing by 4.7% and empty movements by 7.4%.

TEU-km, for their part, recorded a general 9.2% improvement to reach 867.2 million TEU-km.

The total gross weight of loaded containers forwarded by Intercontainer in 1988 amounted to 10.033 million tonnes, 5.7% up on 1987.

With an average length of haul of 925 km, loaded movements rose to 9.28 thousand million t-km.

**Table 5.1** Development of total container traffic by rail  
(in TEU)(\*)

Year	Traffic	In/Decrease	Growth rate
1984	824,750	+ 64,000	+ 8.4%
1985	904,803	+ 80,000	+ 9.7%
1986	887,083	- 17,720	- 2.0%
1987	924,798	+ 37,715	+ 4.3%
1988	974.066	+ 49.268	+ 5.3%

**Table 5.2** Development of total container traffic by rail  
(in '000 000 TEU-km)

Year	Traffic	In/Decrease	Growth rate
1984	662.9	+ 56.2	+ 9.3%
1985	749.1	+ 86.2	+11.3%
1986	755.6	+ 6.5	+ 0.9%
1987	794.3	+ 38.7	+ 5.2%
1988	867.2	+ 72.9	+ 9.2%

(\*) TEU: Twenty feet equivalent unit.

**Table 5.3** Container traffic broken down by sector, in TEU and share of each sector

Year	Maritime traffic		Continental traffic		UK + Ireland		USSR	
	Number	%	Number	%	Number	%	Number	%
1984	478,500	58.0	293,000	35.5	32,000	3.9	22,000	2.7
1985	513,000	56.7	330,000	36.5	37,500	4.2	24,000	2.6
1986	492,000	55.5	339,750	38.3	33,500	3.8	22,000	2.4
1987	495,750	53.6	380,250	41.1	31,250	3.4	17,500	1.9
1988	493,950	50.7	429,250	44.1	35,550	3.6	15,300	1.6

**Maritime traffic.** Traffic to and from the ports remains, in terms of both volume and revenue, the most important container traffic. Nevertheless the volume of traffic in the maritime sector in 1988 (493,950 TEU) was 0.4% down on 1987's record figure and its market share decreased.

**Continental traffic.** Overall results in the continental sector are a reflection of the extraordinary growth levels recorded (+ 12.9% by comparison with 1987). In all, 429,255 TEU were forwarded : 310,702 loaded (+ 16.6%) and 118,553 empty (+ 4.2%). The proportion of loaded traffic rose from 70.1% in 1987 to 72.4% in 1988.

The figures given above include Pool traffic which made remarkable progress, reaching a total of 35,292 TEU (+ 20.8%).

**Others.** Opposing trends were recorded in two peripheral market sectors : traffic with Great Britain and Trans-Siberian traffic. After a steady decline over a period of several years, traffic with Great Britain experienced a new lease of life in 1988 with a total of 35,558 TEU (+ 13.6%) and generally positive results.

Trans-Siberian traffic, however, continued to drop, this time by a further 11.9%. In relative terms, this had no serious consequences, since the Trans-Siberian sector with its 15,305 TEU only represents 1.6% of the total traffic.

In table 5.4 the total amount of 974.066 TEU of 1988 and the total amount of 924.799 TEU of 1987 are divided over EUR-12 and third countries with growth rates in %.

Table 5.4

From	To	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	Third countr.	Total
D	87	24841	6493	33141	13912	8787	173	108	0	27101	1726	673	184	67206	184345
	88	25523	8146	36555	13428	9392	250	93	0	22508	2304	933	52	73300	192430
	88/87	+ 3%	+ 25%	+ 10%	- 3%	+ 7%	+45%	- 14%		- 17%	+ 33%	+ 39%	- 71%	+ 9%	+ 4.4%
F	87	6256	14610	25845	3439	15555	12	305	0	3573	475	2855	76	10946	83947
	88	7791	13584	23989	5545	17863	2	271	0	3910	282	1885	69	11180	86371
	88/87	+ 25%	- 7%	- 7%	+ 61%	+ 15%		- 11%		+ 9%	- 41%	- 34%	- 9%	+ 2%	+ 2.9%
I	87	38824	28182	0	18731	27370	48	20386	0	5476	4	274	0	27874	167169
	88	44344	31959	0	20994	24662	9	20714	3	7701	23	499	0	29947	180855
	88/87	+ 14%	+ 13%		+ 12%	- 10%		+ 2%		+ 41%	%	+ 82%		+ 8%	+ 8.2%
NL	87	31498	2175	22781	2	27147	283	0	0	926	893	428	0	20764	106897
	88	26233	3359	20392	4	22420	367	1	0	591	1735	554	0	22855	98511
	88/87	- 17%	+ 54%	- 10%		- 17%	+ 30%			- 46%	+ 94%	+ 29%		+ 10%	- 7.8%
B	87	12619	13420	34262	24126	0	24	0	0	1111	3005	656	3	17816	107042
	88	19070	16775	35327	22785	0	4	0	0	799	2461	809	3	18403	116436
	88/87	+ 51%	+ 25%	+ 3%	- 6%					- 28%	- 18%	+ 23%		+ 3%	+ 8.8%
L	87	66	14	9	1162	259	0	0	0	0	11	181	0	23	1725
	88	205	6	30	2128	228	0	0	0	0	0	366	0	14	2977
	88/87	%	%	%	%	%						%		%	+ 72.6
UK	87	156	229	9836	0	1	0	0	0	0	0	16	0	179	10417
	88	103	380	13619	8	3	0	2	0	0	0	0	0	238	14353
	88/87	- 34%	+ 66%	+ 38%										+ 33%	+ 37.8
IRL	87	19	0	0	0	0	0	0	0	0	0	0	0	0	19
	88	6	0	0	0	0	0	0	0	0	0	0	0	0	6
	88/87	%	%	%	%	%								%	
DK	87	23166	2563	5367	427	847	0	0	0	0	2	337	0	3079	35788
	88	20002	2234	7780	350	736	0	0	0	0	2	283	0	3721	35108
	88/87	- 14%	- 13%	+ 45%	- 18%	- 13%						- 16%		+ 21%	- 1.9%
GR	87	863	415	90	246	1203	85	0	0	0	0	0	0	524	3426
	88	579	249	46	391	957	76	0	0	0	0	0	0	568	2866
	88/87	- 33%	- 40%	- 51%	+ 59%	- 20%	- 11%							+ 8%	- 16.7%
E	87	529	2966	178	463	389	33	3	0	75	0	5	1776	1130	7547
	88	753	3933	298	743	854	55	5	0	107	0	3	1215	1597	9562
	88/87	+ 42%	+ 33%	+ 67%	+ 60%	%	%			%		%	%	+ 41%	+ 26.7%
P	87	4	66	2	0	0	0	0	0	0	0	1420	0	10	1492
	88	0	14	0	0	0	0	0	0	0	0	1177	0	20	1211
	88/87	%	%	%	%	%						%		%	- 28.8%
third countries	87	66732	10946	33371	20764	17032	113	283	0	3079	241	1130	209	61082	214984
	88	68652	10414	36168	19715	17878	154	228	0	3109	195	897	216	91845	233380
	88/87	+ 3%	- 5%	+ 8%	- 5%	+ 5%	+ 35%	- 19%		+ 1%	- 19%	- 20%	+ 3%	+ 50%	+ 8.6%
Total	87	204121	81934	164856	80160	98590	771	21085	0	40173	6331	7261	2248	217268	924728
	88	213261	94244	177708	86287	94024	917	21313	3	38725	7002	7406	1567	230809	974066
	88/87	+ 4.5%	+ 15.0%	+ 7.8%	+ 7.6%	- 3.8%	+ 18.9%	+ 1.1%		- 3.6%	+ 10.6%	+ 2.0%	- 30.3%	+ 6.2%	+ 5.3%

## 5.2. Road/rail Piggy Back Transport

Piggy back (combined rail/route traffic) is the transport of lorries or their loading units (Swap-bodies or semi-trailers) by rail.

The sources of piggy back transport in paragraph 5.2 are the year reports and statistics of the U.I.R.R. (Union Internatioanle des sociétés de transport combiné rail/route).

In combined rail/road traffic we distinguish the transport of

1. Swap-bodies with vertical loading
2. Semi-trailers with vertical or horizontal loading
3. Whole road-trains with horizontal loading accompanied by drivers in sleeping cars. (rolling motorway).

The transport of swap-bodies covers 61 % of the piggy back transport in Europe today. It offers the advantage that only a low dead weight must be transported on the railway and hence the traction power of the locomotives can be exploited fully. The second most frequent technique (27%) especially in international traffic is the transport of semi-trailers in the special pocket wagons.

Table 5.5 shows the development of the above-mentioned technologies during the years 84-88 (%).

	SEMI	SB	RM
1984	29	61	10
1985	26	63	11
1986	27	62	11
1987	27	61	12
1988	27	60	13

The shipment of swap bodies is easily the most common piggyback technology. While the use of semi-trailers is decreasing, the growth of the "rolling motorway" is caused by the political decision to achieve a rapid shift of transalpine traffic on to railways.

**Table 5.6** Number of dispatches in international piggy-back transport by Country and Company of dispatch.

Country	Company	1984	1985	1986	1987	1988	1988/1987
D	Kombiverkehr	77,600	87,500	106,000	116,700	143,200	+22.7%
F	Novatrans	35,045	39,803	43,482	52,800	56,900	+12.4%
I	Cemat	11,723	11,989	15,089	20,100	25,900	+29.0%
NL	Trallstar	4,887	5,588	6,187	6,500	7,100	+ 9.1%
B	T.R.W.	13,810	15,161	17,193	17,500	24,900	+40.5%
DK	Kombi-Dan	-	-	1,024	2,500	4,700	+ 88.6%
<u>Third countries</u>							
A	Oekombi	11,244	16,623	23,033	29,100	40,800	+40.2%
CH	Hupac	30,783	36,907	39,650	42,100	51,700	+23.3%
S	S-Combi	-	-	2,700	1,200	1,800	+61.3%
Total		196,873	223,163	265,896	288,500	357,000	+23.7%

The average growth in the last 5 years was 17% per annum. The largest contribution to this was made by trans-alpine traffic which now constitutes two thirds of international piggyback transport.



**Table 5.7** National traffic, over an average distance of 600 km, is very largely carried at night. The Federal Republic of Germany and France have the most national traffic. Italy is making great steps towards opening up its domestic market.

Company	Consignments '88	+/- In %
Kombi- verkehr	336,500	+ 4.8%
Novatrans	150,100	+ 6.3%
S-Combi	79,800	+14.9%
Cemat	52,900	+41.5%
Ökombi	21,600	+24.2%
Hupac	10,700	+44.7%
Kombi-Dan	2,200	+ 60.5%
T.R.W.	200	0%
<b>Total</b>	<b>654,000</b>	<b>+ 9.8%</b>

**Table 5.8** Because of the greater distance (900 km) and higher weights, international piggyback traffic exceeded national traffic for the first time in 1988.

National (Nat.) and International (Int.) traffic in thousand mio t-km:

Year	Int.	Nat.	Total
1984	4.6	5.6	10.2
1985	5.2	5.8	11.0
1986	5.8	6.7	12.5
1987	6.6	6.8	13.4
1988	7.8	7.6	15.4

For European piggyback transport 1988 was a record year : more than one million consignments were transported, ie 4000 per working day (one consignment equals two 7 m swap bodies, one 12 m swap body, a semi-trailer or a complete lorry on the "rolling motorway"). That equates to a daily line of lorries 70 km long transferred from road to rail. A third of the piggyback transport of the International Union of Combined Road-Rail Transport Companies is international, and this grew by 24%, faster than national transport which averaged 10% growth.

There are various reasons for this trend towards combined transport :

- The potential for piggyback transport comes from road freight traffic which is growing faster than other modes of transport.

- . International traffic over long distances is particularly suited to combined transport.
- . Piggyback transport timetables are being continually improved.
- . In most cases reliability and safety are greater than by road transport.
- . The alpine countries are actively promoting the use of combined transport.
- . The developing European internal market is prompting many forwarding agents to include piggyback transport in their range of services.
- . The neutral role of piggyback companies as the link between road and rail, which are otherwise in competition, enables them to co-operate.

In the summer of 1988 the EC Commission awarded a contract for a study of the development of European combined transport to be carried out by the Community of European Railways, Intercontainer and the UIRR in co-operation with the consultant A.T. Kearney. The objective of the study is to draw up a development plan for combined transport up to the year 2000. The starting point is market research to determine the current and foreseeable future demand. On the other hand an analysis of the supply has also been carried out which examines the strengths and weaknesses of current combined transport and proposes an investment plan to improve future services.

The EC Commission has proposed a revision of Directive 75/130/EEC which exempts combined transport from road haulage quotas. Contrary to the spirit of this directive, the road journey to the terminal is regarded in all EC Member States as being local transport in legal terms. A part of international transport is therefore caught by the prohibition of cabotage which prevents foreign firms from carrying internal traffic. In consequence piggyback customers in other countries are forced to engage locally-based firms for the journey to the terminal, often at excessive prices and with considerable organisational problems. Small undertakings in particular would like to drive their own tractor units to other countries while simultaneously sending two or three consignments by combined transport. Their own driver could then deliver these in the country of destination. The EC Commission hopes that the Council of Ministers will agree to the complete exemption of combined transport from these restrictions.

## Reports of UIRR companies

### Federal Republic of Germany

**Kombiverkehr** achieved a growth rate in double figures in 1988. Eighty per cent of all consignments were swap bodies and semi-trailers while the share of the "rolling motorway" increased to 20%. For a few years international piggyback traffic has been growing faster than national traffic.

### France

**Novatrans** achieved an average growth of 10% in 1988, linked to a marked increase in swap body transport which reached two thirds of the total traffic.

### Italy

**Cemat** last year achieved its highest growth for 10 years. Improved timetables, expansion of the terminal network and above all the opening of Quadrante Europa in Verona made this success possible.

### The Netherlands

**Trailstar**, which celebrated its 25th anniversary in 1989, opened a new terminal in Ede in November 1988. This realised a first step in the national master plan to improve combined transport.

### Belgium

**T.R.W.** recorded growth of some 40% in 1988 and this continued in the early part of 1989.

### Denmark

**Kombi-Dan** again recorded exceptional growth in the third year since its foundation. 85% of international traffic is with Italy, Austria and Switzerland.

### Switzerland

**Hupac** was able to increase by 19% swap body and semi-trailer traffic which makes up two thirds of all movements. With the help of new rolling stock, 44% more consignments were carried on the "rolling motorway". Meanwhile the decision has been made in Switzerland to build a new Gotthard tunnel. It will take some 15 years to build the 49 km tunnel.

## Austria

Oekombi achieved its greatest ever increase in business since the founding of the company. This record result was mainly due to the fact that, in addition to expanding the "rolling motorway" to 5 trains each way daily between Graz and Regensburg and 3 between Wels and Mainz, swap body and semi-trailer traffic was also increased through improved services. For example, journey times between the Vienna, St Poelten and Wels terminals and those in Antwerp, Zeebrugge and Ostende in Belgium were reduced to less than 24 hours.

## Sweden

S-Combi particularly developed its cross-border traffic in 1988 : the Stockholm-Verona route via Sassnitz in co-operation with Cemat and the route between southern Sweden and various places in Europe, e.g. Bochum and Basle, in co-operation with Kombiverkehr.

### Trends and developments

Many forecasts about the development of the European internal market predict that above all road transport will benefit from liberalisation. In order to avoid favouring a single form of transport, many European countries, the EC Commission and the ECMT (European Conference of Ministers of Transport) are working to harmonise the framework of conditions for different countries and modes of transport.

Planned EC measures on lorry weights and dimensions will limit the length of loads and thereby end the long-standing debate about the future length of swap bodies and semi-trailers. As far as articulated vehicles are concerned, the decision has just been made to limit the total length to 16,50 m, ie 13,60 m for semi-trailers. Continuity of regulations is necessary to enable the building of economical combined transport wagons which can be used for the foreseeable future.

### 5.3. Inland waterway container transport

There are no adequate official statistics on the container transport of the waterway sector. The figures on inland waterway containers and traffic in this part of chapter 5 are estimations mainly based on the German port statistics and countings on the Dutch/German border by Rijkswaterstaat.

For the first time container vessels are counted separately. In 1988 the Rijkswaterstaat counted 3 995 of them, or 2.5% of all vessels crossing the Dutch-German border, and accounting for 3.5% of total capacity. This means that, every week, about 40 container vessels cross the border in each direction. The average capacity of these vessels was 2 370 tonnes. A realistic estimate for such a tonnage of 175 TEU puts the annual capacity of the Rhine container fleet at 700 000 TEU. The vessels are not of course always fully loaded and the actual number transported is much less.

Everyone is now familiar with the spectacular expansion in the number of containers at harbours. When the system was first introduced, inland navigation was unable to take a full part in it, mainly because it took too long for the containers to reach the hinterland and because there was a lack of container terminals along the Rhine.

Since 1975 this situation has altered to the benefit of inland navigation, mainly because what is now of primary importance is not so much the speed of circulation as ensuring that liner services are synchronized with the departures of seagoing vessels. Various terminals along the Rhine have also been fitted with special equipment for dealing with containers and with road and rail connections for forwarding them to their final destinations.

At present there are some 30 container terminals between Emmerich and Basel.

The number of containers being transported by inland waterway has risen rapidly. See table 5.9

**Table 5.9** Container transport on the Rhine (TEU)

Year	TEU	Indice (1977 = 100)	Yearly growth
1977	42.700	100	-
1979	68.000	159	25 %
1981	86.000	201	13 %
1983	150.000	351	37 %
1984	180.000	422	20 %
1985	210.000	492	17 %
1986	240.000	562	15 %
1987	290.000	679	20 %
1988	300.000	702	4 %

New vessels have been built with 10 m wide loading ports, so that four containers can be carried across the width of the vessel, thus transporting up to 200 TEU's. Modal split changed in the recent past. The part of the containerised traffic coming from ARA ports and continuing by inland waterway has increased at the expense of road transport from 17% of the total in 1984 to 24% in 1988.

#### 5.4. Road/inland waterway - Ro/ro vessels

Together with car transporter barges, Ro-Ro vessels are one of the latest innovations in transport by inland waterway. In late 1985 the first regular Ro-Ro service on the Rhine was officially opened. Currently there are three departures per week in both directions. The vessels concerned can take tilt, silo and tanker trailers, floats, containers on chassis, semi-low-loaders, tractors and tractive units.

It has been calculated that the advantage in transport of standard 12 m trailers may be between 10 and 20% in comparison with traditional road carriage.

Other advantages are :

- avoiding the prohibition in West Germany
- partial avoidance of ever denser lorry traffic on the roads
- same vehicle used both before and after
- environmental advantages.

At such inland ports as Mainz and Mannheim special loading platforms are being built for these ships.

This innovation in inland waterway transport makes seaports more competitive if they have the necessary infrastructure, i.e. loading facilities exclusively for inland vessels. This is the case in, for instance, Rotterdam.

Annex

SOURCES

(e) Inland Waterway Cost Survey

- NL Stichting NEA  
in collaboration with :
- F Office national de la navigation
- B Institut pour le transport par Batellerie
- D Bundesverband der deutschen Binnenschifffahrt

(f) Rail Tariff Indices

- D DR (Deutsche Bundesbahn)
- F SNCF (Société nationale des chemins de fer français)
- I FS (Azienda autonoma delle Ferrovie dello Stato)
- NL NS (Nederlandse Spoorwegen)
- B NMBS/SNCB (Société Nationale des Chemins de fer belges)

(g) Combined Transport

- Intercontainer (container traffic - trafic conteneurisé - Containerverkehr)
- Interunit (Piggy-back - Ferroutage - Huckepack)

(h) Road Tonnes

- D KBA-BAG Kraftfahrt-Bundesamt und der Bundesanstalt für den Güterfernverkehr
- F Ministère des Transports - Service des Transports routiers
- I Ministero dei Trasporti - Dir. generale POC
- NL CBS - Centraal Bureau voor de Statistiek
- B/L INS - Institut national de Statistiques
- UK GSS - Department of Transport
- IRL University College, Dublin
- DK Denmark Statistik
- GR Ethniki Statistiki Ypiresia
- E Ministerio de Transportes, Turismo y Comunicaciones
- P Ministerio dos Transportes e Comunicações
- A Österreichisches Statistisches Zentralamt
- CH Bundesamt für Statistik
- SOEC (Luxembourg) Directive 78/546

(i) I.W. Tonnes

- ONI Office national de Navigation
- CCR Commission Centrale pour la Navigation du Rhin
- SOEC (Luxembourg) - Directive 80/1119

(j) Rail Tonnes

- SOEC (Luxembourg) - Directive 80/1177

(k) Rhine fleet developments

Internationale Vereinigung des Rheinschiffsregisters (IVR)

(a) Road Opinion Survey

- B Institut du Transport routier
- DK Danmark Statistik
- D IFO (Institut für Wirtschaftsforschung)
- F Centre de Productivité des Transports
- GR Ethniki Statistiki Ypiresia (National Statistical Office)
- IRL University College, Dublin
- I Centro Studi sui Sistemi di Trasporto
- L Service central de la Statistique et des Etudes économiques
- NL Stichting NEA
- UK Department of Transport

(b) Road Cost Survey

- D Bundesverband des Deutschen Güterfernverkehrs (BDF) e.V.
- F Comité national routier
- NL Stichting NEA
- B Instituut voor Wegtransport
- L Fédération des Commerçants du Grand-Duché
- UK Road Haulage Association Ltd.
- DK Landsforeningen Danske Vognmaend

(c) Road Price Survey

- B Institut du Transport routier
- D BAG (Bundesanstalt für den Güterfernverkehr)
- F Ministère des Transports
- I Centro Studi sui Sistemi di Trasporto
- NL NIMO (Nederlandse Internationale Wegvervoer Organisatie)
- CBS (Centraal Bureau voor de Statistiek)
- GR Market Analysis

(d) Inland Waterway Opinion Survey

- Rhine Commission Centrale pour la Navigation du Rhin
- North-South B Institut pour le Transport par Batellerie
- NL Stichting NEA

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