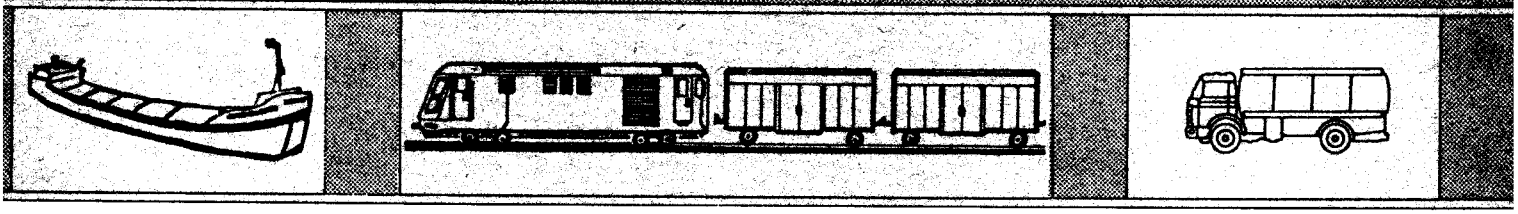
EUROPEAN COMMUNITIES

EUROPA TRANSPORT



OBSERVATION OF TRANSPORT MARKETS

ANALYSIS AND FORECASTS

1983

Published by the Directorate-General for Transport
Commission of the European Communities - 200, rue de la Loi, 1049 Brussels

Supplement to the Documentation Bulletin - D/TRANS/EN

ANALYSIS AND FORECASTS

1983

Manuscript finished in February 1983

This publication is also available in the following languages:

DE ISBN 92-825-3684-X
FR ISBN 92-825-3686-6
IT ISBN 92-825-3687-4

Cataloguing data can be found at the end of this publication

Luxembourg: Office for Official Publications of the European Communities, 1983

ISBN 92-825-3685-8

Catalogue number: CB-37-83-344-EN-C

Printed in Belgium

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Chapter I

General Trends in Transport Activity

Transport forecast

1.1. Total freight transport tonnage between the nine Member States (Greece is not included) fell during 1982 by 1.2 %. The forecast for 1983 is for a further decline of 0.2 % and consequently for the fourth consecutive year there will be a decline in the total tonnage transported by inland transport. The 1983 tonnage will be 5 % below that of 1979.

1.2. The positive upturn expected in 1982 did not materialise. The slight upturn in the business-cycle since mid 1981 petered out by June 1982. This relapse into recession has resulted in a decline in total transport activity. However, its impact on the demand for the three modes has been different with road transport showing more resilience than either rail or inland waterway.

1.3. The forecast changes in cross-border transport are strongly correlated with the changes that take place in key-economic sectors. The 1982 estimate and 1983 forecast of transport demand are based on a growth assumption for GDP of zero and -0,5 % respectively.

Economic trends

1.4. Throughout 1982 there has been a deterioration in the economic climate and it is expected that in the second half of the year there will be a contraction of activity in the Community. The decline in economic activity results partly from the decline in world trade and partly from weak domestic activity. The private consumption component of G.D.P. shows no growth at all in 1982, reflecting the very small increase in personal disposable income and the assumed stability of the savings-ratio. Investment which dropped by about 5.6 % in volume in 1981, is estimated to have fallen a further 3 % in 1982. Government expenditure probably shows a small positive growth of around 1 % (in volume). Since however, the greater part of government expenditure consists of wages paid to civil servants, the potential effect on transport is very low.

1.5. For 1983 GDP-growth has been forecast as being slightly negative (- 0,5 %). The growth profile behind these figures breaks down into two distinct time periods : economic activity continuing to decline during the first six months with some recovery possible from mid year onwards.

1.6. The hope for growth in the second half year is based upon the following outlook : an expansion in world trade will take place causing the volume of exports to start growing again. Imports would grow at about same rate but the terms - of - trade will improve further, reducing the current-account deficit. This will start a process of "export-led" growth. Domestic demand may also recover, but since real disposable income will remain weak, private consumption will also be weak ; in other words, the only source from which growth can come is investment-demand and that this will act as the "locomotive"of domestic demand.

1.7. In table 1 total transport activity (growth rates and levels) is shown.

Table 1 : Total transport activity (EUR-9)

	annual growth rates	total tonnage (mio. T)
1975	- 11.5	354.7
1976	8.2	383.8
1977	1.5	389.4
1978	6.4	414.3
1979	5.3	436.1
1980	- 0.3	434.7
1981	- 3.4	419.8
1982 (estimate)	- 1.2	414.8
1983 (forecast)	- 0.2	413.9

1.8. The further decrease in the level of transport demand in 1982 and 1983, which is to a large extent the mirror-image of the overall economic situation (transport being a derived demand), brings the level of total border-crossing EUR-9 transport back to about the 1978 level ; however, it is still 17 % above the total tonnage transported in 1975, the trough year of the previous business-cycle.

1.9. Transport demand is not only influenced by general economic conditions, but also by a number of more selective factors :

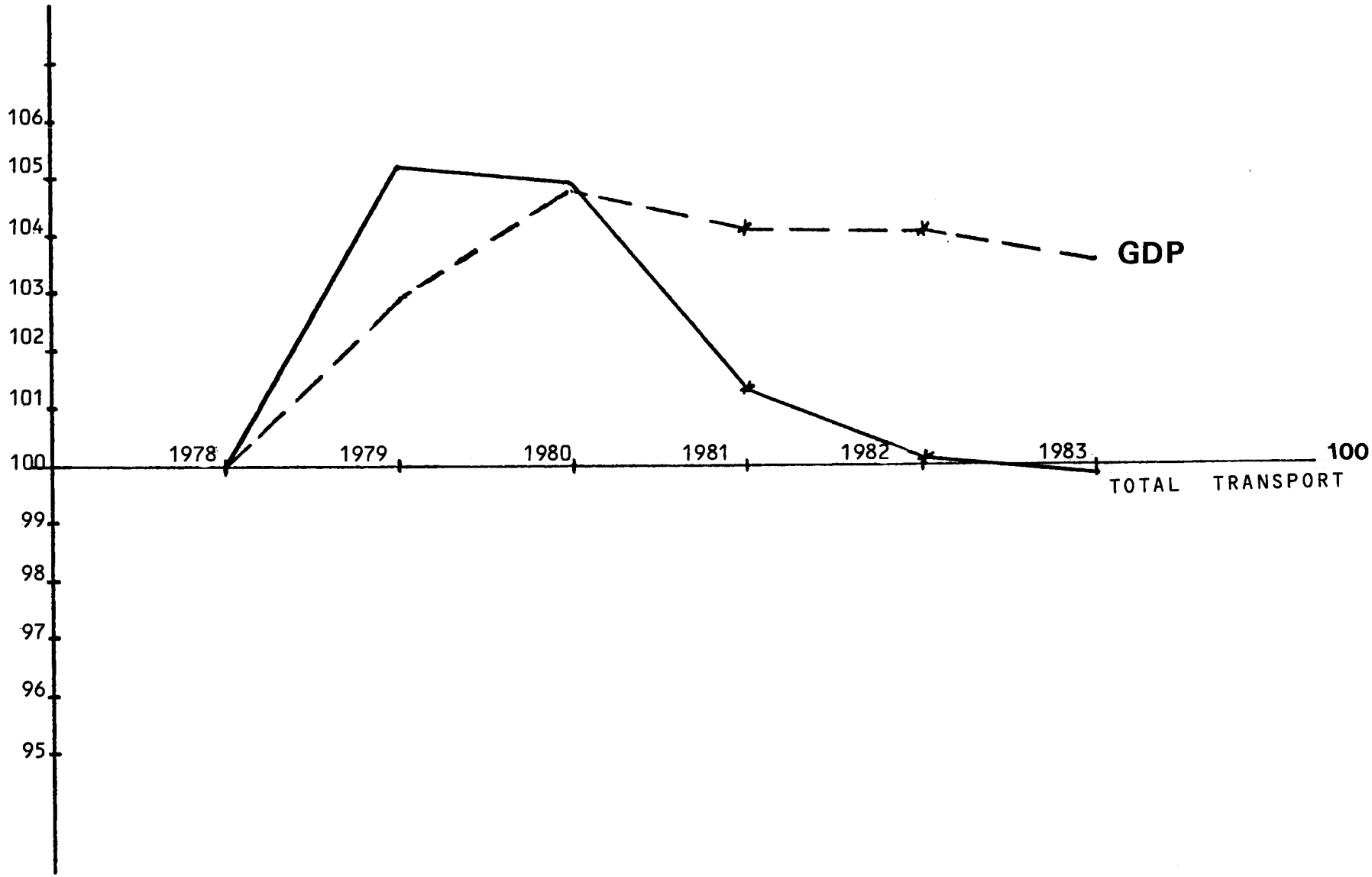
- expressed in tonnage-terms, the steel-sector and the construction industry are important clients of the transport industry
- these sectors are very much "mode-linked", i.e. inland waterways and rail are more than proportionally affected by developments in these sectors.

1.10. In table 2 and graph 1 a comparison is made between freight transport between E.C. Member States and GDP.

Table 2 : GDP (in volume) and total transport (% growth rates)

		GDP	Total Tonnage
1971		3.5	3.4
1972		4.0	5.3
1973		5.6	8.7
1974		1.8	10.3
1975		-1.2	-11.5
1976		5.0	8.2
1977		2.8	1.5
1978		3.2	6.4
1979		3.3	5.3
1980		1.4	-0.3
1981		-0.6	-3.4
1982	(estimate)	0.0	-1.2
1983	(forecast)	-0.5	-0.2

Graph 1 : GDP (in volume) and total transport (Tonnes)



1.11. Two distinct periods may be noted between 1970 and 1983. Firstly the period 1970-1979, during which the trend growth of transport was higher than the trend of GDP, and secondly the period 1980-1983 where the reverse was true.

	GDP	Total Tonnage Transported
I. 1970-1979 (1970=100)	131.8	142.0
II. 1980-1983 (1979=100)	100.3	99.9

1.12. The same phenomenon of lower transport growth relative to GDP-growth has been noted also in the year 1975 (GDP : - 1.2 % and transport activity : - 11.5 %). Clearly the decline in the growth rate of transport is generally larger than that of GDP in a recession.

Several factors explain this :

- the sectors most vulnerable to cyclic fluctuations are important in tonnage terms (steel, coke, construction)
- economic recession reduces energy-demand leading to a lower volume of oil and steam coal transported
- the services sector has increased its contribution to GDP.

1.13. This feature is particularly evident since the 1974/75 recession. Most of the factors cited above have now a structural rather than a conjunctural nature :

(i) the crisis in the European steel industry is structural ; an increase in overall final demand will not re-establish the production levels of the past, due to :

- the transfer of production to the NIC's (Newly Industrialised Countries) who offer the benefit of lower wage-levels ;
- the global reduction of the demand for steel (other materials are used as subsitutes, new technologies use less steel, etc)

- protective measures by other industrialised countries to safeguard their home-markets.

These factors will not only reduce the importance of the transport of steel products but will also affect the regional balance of transport flows with export traffic from traditional centres declining even further.

(ii) due to lower production levels for steel, coke-inputs fall proportionally, giving rise to a lower demand for this product.

(iii) the decrease in the consumption (and transport) of oil in recent years has not only been caused by the slack in economic activity, but also results from a more efficient use of energy due to the increase in its relative price ; in this way higher energy prices have had an effect on the transport sector via a structural change in the components of the demand for transport.

Available information does not suggest that higher energy prices have had a direct effect on the modal split in transport. If this was the case, as one might have expected, then increasing oil prices should have had a negative effect on road transport in favour of rail and inland waterways. As a matter of fact the trend is the opposite direction.

Chapter II

Modal Activity Analysis

2.1. When preparing the forecasts for 1982 it was expected that each mode would develop differently. Table 3 reviews these forecasts with the outturn for 1981 and estimates for 1982.

2.2. Table 3: Total tonnage transported (mio. T) (growth rates in brackets)

	1981*	1981**	1982*	1982**
road	164.8 (-1.3%)	170.2 (-0.1%)	167.9 (+1.9)	174.8 (+2.7%)
inland waterways	185.1 (-2.1%)	181.5 (-4.0%)	184.9 (-0.1%)	177.2 (-2.4%)
rail	70.1 (-7.0%)	68.1 (-9.7%)	69.5 (-1.0%)	62.8 (-7.8%)
Total	420.0 (-2.7%)	419.8 (-3.4%)	422.2 (+0.5%)	414.8 (-1.2%)

* estimates and forecasts of January 1982

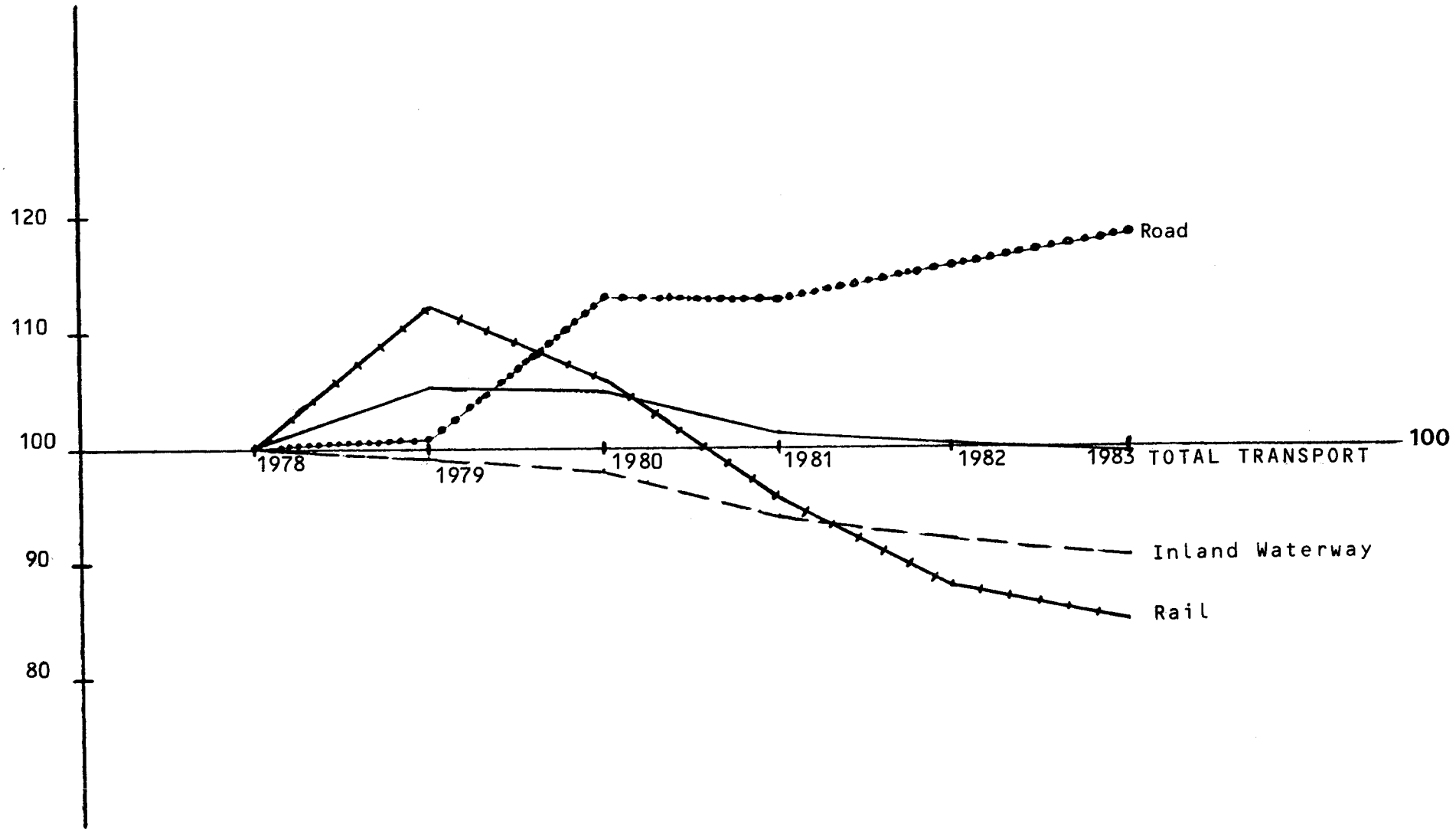
** statistical data (1981) and estimates of December 1982.

2.3. In table 3 figures for the year 1981 have been included, since in January 1982 only estimated figures for 1981 were available. Comparing the revised figures for 1981 as well as for 1982 leads to the same conclusion: road transport activity has been underestimated a little; the opposite is true for the two other modes which were more adversely affected than had been expected. The total tonnage differences were insignificant for 1981 and about seven million for 1982.

Changes in total transport by mode

2.4. Analysis of the changes that are taking place in the modal structure of transport (see table 4) makes it clear that the trend towards an increasing share for road transport has not halted. On the contrary, in 1983 road transport is forecast to have the largest relative share of all three modes, pushing inland waterway transport into second place.

Graph 2 : Total tonnage transported by road, rail and inland waterways



2.5. Table 4: Cross-border transport of goods in EUR-9

		Total Transport	Inland Waterways	Road	Rail
Tonnage (million)					
1979		436.1	190.7	165.4	80.0
1980		434.7	189.1	170.2	75.4
1981		419.8	181.5	170.2	68.1
1982*		414.8	177.2	174.8	62.8
1983**		413.9	175.0	178.2	60.7
Relative Shares					
1979	%	100.0	43.7	37.9	18.3
1980	%	100.0	43.5	39.2	17.4
1981	%	100.0	43.2	40.5	16.2
1982*	%	100.0	42.8	42.1	15.1
1983**	%	100.0	42.3	43.1	14.6
Growth Rates					
1979	%	+5.3	-0.8	+9.4	+12.8
1980	%	-0.3	-0.9	+3.0	-5.7
1981	%	-3.4	-4.0	-0.1	-9.7
1982*	%	-1.2	-2.4	+2.7	-7.8
1983**	%	-0.2	-1.2	+2.0	-3.4

* estimate

** forecast

2.6. Table 5 gives a breakdown of the changes that are expected to take place in total transport activity. It appears that the trend of total transport demand is the sum of two divergent forces:

(i) a positive trend in road transport with an elasticity of 4.9 relative to GDP and

(ii) a negative trend for rail and inland waterway transport with elasticities of -4.5 and -2.7 respectively.

2.7. Table 5: Changes in tonnage transported by road, rail, inland waterways

	GDP	Total Transport	Road	Inland Waterway	Rail
1978	100.0	100.0	100.0	100.0	100.0
1979	102.9	105.2	108.0	99.2	112.2
1980	104.8	104.9	113.0	98.3	105.8
1981	104.1	101.3	112.9	94.4	95.6
1982*	104.1	100.1	115.9	92.2	88.1
1983**	103.6	99.9	118.3	91.0	85.1
Average 1983/1978	+0.7%	+0.0%	+3.4%	-1.9%	-3.2%
GDP elasticity	+1.0	+0.0	+4.9	-2.7	-4.5

* estimate

** forecast

Chapter III

Goods-Category Analysis

3.1. This section analyses expected developments by ten categories of traffic. It highlights

(i) the importance of each mode as carrier for different NST categories

(ii) the relative importance of each traffic category for the different modes

(iii) the contribution of each category to the total tonnage for each mode.

3.2. Table 6 shows the principal mode of transport for each of the ten traffic categories (see annex 1 for detailed NST headings).

The dominant modes are:
Road: NST 0, 1, 5, 8 and 9
Waterway: NST 2, 3, 4, 6 and 7
Rail traffic, while not dominant in any market, remains an important carrier or NST 2, 4, 5, 7, and 9.

3.3. Table 6: Market shares of each of the 3 modes for different NST-groups (in %)

	Road	Rail	Inland Waterways
	1983	1983	1983
NST 0 Agriculture	60	14	26
NST 1 Processed foods	65	6	29
NST 2 Coal + Coke	9	36	55
NST 3 Oil Products	10	3	87
NST 4 Ores	5	25	70
NST 5 Metal Products	43	32	25
NST 6 Construction	40	5	55
NST 7 Fertilizers	25	22	53
NST 8 Chemicals	69	10	21
NST 9 Manufactured	75	18	7

3.4. Road traffic groupings are generally more buoyant in recessionary periods and are least affected by the structural crisis in the steel sector.

3.5. Table 7 shows the relative importance of each NST category on the total carryings of each mode.

Dependence on coal and steel traffic (NST 2, 4 and 5) varies from 11% for road to 53% for rail and 33% for inland waterways. While these traffics continue to represent a high percentage of total rail and waterway transport this dependency has been declining steadily for railways:

	1979	1981	1983
Rail	62	58	53
Waterway	35	35	33

3.6. Both road and inland waterways are influenced by the level of activity of the construction industry. NST 6 (sand, gravel and other building materials) represents 20% and 28% of road and inland waterway carryings respectively.

3.7. Table 7: Relative importance of NST-categories for road, rail and inland waterways (%)

	Road	Rail	Inland Waterways
	1983	1983	1983
NST 0 Agriculture	11	8	5
NST 1 Processed foods	16	4	7
NST 2 Coal + Coke	1	13	7
NST 3 Oil Products	2	1	16
NST 4 Ores	1	22	21
NST 5 Metal Products	9	19	5
NST 6 Construction	20	7	28
NST 7 Fertilizers	2	4	4
NST 8 Chemicals	15	6	5
NST 9 Manufactured	23	16	2
Total	100	100	100

3.8. Table 8 shows the contribution of each NST category to the forecast outturn for each of the three modes (see annex II for details).

3.9. Table 8: Contribution of each NST category to 1983 modal growth development.

	Road	Rail	Inland Waterways
	1983	1983	1983
NST 0 Agriculture	+0.03	-0.41	-0.14
NST 1 Processed foods	+0.21	-0.18	-0.26
NST 2 Coal + Coke	-0.05	-0.63	-0.18
NST 3 Oil Products	-0.04	-0.01	-0.06
NST 4 Ores	-0.02	-0.83	-0.45
NST 5 Metal Products	+0.06	-0.96	-0.27
NST 6 Construction	+1.22	+0.01	+0.36
NST 7 Fertilizers	-0.02	-0.16	-0.08
NST 8 Chemicals	+0.34	-0.04	-0.10
NST 9 Manufactured	+0.30	-0.29	-0.05
Total	+2.0	-3.4	-1.2

The strong relative performance forecast for road transport can be seen to be heavily influenced by the NST 6 category, which accounts for around two thirds of the 2.0% growth in road tonnages.

Chapter IV

Geographical Analysis

4.1. The developments in general transport activity described above do not, of course, have the same effect on each of the nine Member States. This section outlines the major results of the transport forecasts on a country-to-country basis. Table 9 summarizes the total transport flows between each of the EUR-9 member states and the rest of the Community (excluding Greece).

4.2. Table 9. International intra-EC goods traffic (annual growth rates)

From-To	1980	1981	1982*	1983**
IRL - EC	3.0	- 1.3	4.5	0.6
DK	7.3	1.6	9.6	- 1.5
B/L	4.6	- 3.8	2.0	- 0.6
NL	0.7	- 3.2	0.6	- 1.0
IT	- 0.1	3.0	2.4	- 0.4
UK	- 0.8	3.1	5.4	2.4
F	- 2.7	- 7.6	- 4.3	0.8
D	- 3.6	- 2.4	- 5.3	0.3
EC - IRL	- 0.6	10.8	9.5	2.9
DK	- 5.3	10.8	10.0	1.0
B/L	- 4.0	- 4.1	- 2.3	0.8
NL	1.4	- 3.3	- 6.1	0.7
IT	5.1	- 4.1	- 0.7	- 0.4
UK	- 2.3	13.0	11.5	1.6
F	4.0	- 6.8	1.0	- 1.5
D	- 1.2	- 3.0	0.1	- 1.0
EC - EC	- 0.3	- 3.4	- 1.2	- 0.2

* estimate

** forecast

4.3. The volume of outward bound traffic is forecast to fall in Denmark, Belgium, Luxemburg, the Netherlands and Italy. Traffic from France, on the other hand, is forecast to reverse the three year trend of declining volumes with a small upturn of 0.8 % in 1983. Outward bound tonnages from the other countries are expected to rise by 0.3 to 2.4 %.

4.4. On the inward bound side, positive growth is expected in the Irish, Danish, Belgian, Dutch and U.K. markets. In two major markets, Germany and France, the opposite situation holds. Inward tonnages are expected to decline in 1983 by 1.0 % in Germany and 1.5 % in France.

4.5. Forecasts have also been made of each country-to-country transport activity as well as the total figures given above. This information is given in Table 10 with figures indicating the relative significance of the traffic to and from each country with respect to total E.C. tonnage given in Table 11.

4.6. Table 10: Traffic Shares in 1983 (%)

		D	F	IT	NL	B	UK	IRL	DK	Total
GERMANY	inward	-	18.3	5.4	57.8	15.6	0.5	0.0	2.3	100
	outward	-	18.3	10.0	45.6	22.2	1.2	0.1	2.8	100
FRANCE	inward	30.9	-	9.9	13.9	42.3	2.3	0.2	0.5	100
	outward	38.6	-	16.5	8.3	33.0	3.0	0.1	0.5	100
ITALY	inward	38.2	43.7	-	6.6	9.6	0.9	0.0	1.0	100
	outward	46.3	34.4	-	7.2	8.3	3.0	0.0	0.8	100
NETHERLANDS	inward	58.0	7.3	1.6	-	30.1	2.6	0.1	0.4	100
	outward	60.9	5.9	1.2	-	29.2	2.3	0.0	0.4	100
BELGIUM	inward	24.6	25.2	1.6	44.8	-	3.5	0.1	0.2	100
	outward	29.4	32.4	3.2	30.6	-	3.8	0.1	0.4	100
U.K.	inward	10.6	18.1	4.5	27.9	25.3	-	6.9	6.8	100
	outward	8.6	15.2	2.5	22.6	35.7	-	8.7	6.7	100
IRELAND	inward	4.9	5.9	0.0	3.9	9.1	75.2	-	1.1	100
	outward	3.6	8.0	0.7	8.2	5.0	74.3	-	0.3	100
DENMARK	inward	58.9	7.9	3.0	10.2	7.3	12.7	0.1	-	100
	outward	64.9	6.2	5.1	5.8	3.2	15.3	0.2	-	100

Table 11: Traffic levels in 1983

		Level MIO.T	Share of E.C. volume	Growth rate
GERMANY	inward	144.5	34.9	- 1.0
	outward	99.4	24.0	+ 0.3
FRANCE	inward	58.7	14.2	- 1.5
	outward	68.6	16.6	+ 0.8
ITALY	inward	25.9	6.3	- 0.4
	outward	17.0	4.1	- 0.4
NETHERLANDS	inward	78.0	18.9	+ 0.7
	outward	137.3	33.2	- 1.0
BELGIUM	inward	89.6	21.6	+ 0.8
	outward	77.1	18.5	- 0.6
U.K.	inward	11.4	2.8	+ 1.6
	outward	8.8	2.1	+ 2.4
IRELAND	inward	1.0	0.3	+ 2.9
	outward	1.1	0.3	+ 0.6
DENMARK	inward	4.7	1.1	+ 1.0
	outward	5.1	1.2	- 1.5

4.7. From these tables, it is possible to identify for each country which other E.C. countries are most important as places of origin and for destination. These are listed below:

Germany : the Netherlands, France and Belgium
France : Germany, Belgium, the Netherlands (origin)
Italy : Germany and France
Netherlands : Germany and Belgium
Belgium : France, Germany and the Netherlands
United Kingdom: Belgium, the Netherlands and France
Ireland : United Kingdom
Denmark : Germany and the United Kingdom.

4.8. Having established the markets of major interest for both the inward and outward traffic of each country, it is useful to concentrate on these important bilateral relations. Table 12 gives the estimated growth rates in 1982, and Table 13 the forecast rates of growth for 1983 for these specific transport links.

4.9. Table 12: Tonnage growth rates in significant markets (1982/1981)

		D	F	IT	NL	B	UK	Total
GERMANY	inward		- 7.6		1.5	4.6		0.1
	outward		+ 0.5		- 8.7	- 7.4		- 5.3
FRANCE	inward	+ 0.5			- 6.3	3.3		1.0
	outward	- 7.6		- 2.9		- 2.2		- 4.3
ITALY	inward	0.3	- 2.9					- 0.7
	outward	- 3.9	10.0					2.4
NETHERLANDS	inward	- 8.7				- 3.7		- 6.1
	outward	1.5				- 0.7		0.6
BELGIUM	inward	- 7.4	- 2.2		- 0.7			- 2.3
	outward	4.6	3.3		- 3.7			2.0
U.K.	inward		8.4		12.1	19.2		11.5
	outward		- 19.7		11.9	15.2		5.4
IRELAND	inward						9.2	9.5
	outward						4.8	4.5
DENMARK	inward						6.7	10.0
	outward						13.0	9.6

4.10. Table 13: Tonnage growth rates in significant markets (1983/1982)

		D	F	IT	NL	B	UK	Total
GERMANY	inward		1.7		- 1.9	- 1.4		- 0.1
	outward		- 2.0		1.3	0.4		0.3
FRANCE	inward	- 2.0			- 3.5	- 0.6		- 1.5
	outward	1.7		- 0.7		0.3		0.8
ITALY	inward	- 1.1	- 0.7					- 0.4
	outward	2.3	- 3.4					- 0.4
NETHERLANDS	inward	1.3				0.0		0.7
	outward	- 1.9				1.1		- 1.0
BELGIUM	inward	0.4	0.3		1.1			0.8
	outward	- 1.4	- 0.6		0.0			- 0.6
U.K.	inward		4.7		1.7	- 0.5		1.6
	outward		8.6		0.4	1.9		2.4
IRELAND	inward						1.8	2.9
	outward						0.2	0.6
DENMARK	inward						0.6	1.0
	outward						1.5	- 1.5

ANNEX I

Standard Goods Classification for Transport Statistics

NST 0. AGRICULTURAL PRODUCTS AND LIVE ANIMALS

Live animals, cereals, potatoes, other fresh and frozen fruit and vegetables, textiles, textile and man-made fibres, wood and cork, sugar-beet, other raw and vegetable materials.

NST 1. FOODSTUFFS AND ANIMAL FODDER

Sugars, beverages, stimulants and spices, perishable foodstuffs, other non-perishable foodstuffs and hops, animal food and foodstuff waste, oil seeds and oleaginous fruit and fats.

NST 2. SOLID MINERAL FUELS

Coal, lignite and peat, coke.

NST 3. PETROLEUM PRODUCTS

Crude petroleum, fuel derivatives, gaseous hydrocarbons (liquid or compressed) non-fuel derivatives.

NST 4. ORES AND METAL WASTE

Iron ore, non-ferrous ores and waste, iron and steel waste and blast-furnace dust.

NST 5. METAL PRODUCTS

Pig iron and crude steel; ferro-alloys, semi-finished rolled steel products, metal bars and rods, steel sheets, plates, hoop and strip, tubes, pipes, iron and steel castings and forgings, non-ferrous metals.

NST 6. CRUDE AND MANUFACTURED MINERALS, BUILDING MATERIALS

Sand, gravel, clay and slag, salt, iron pyrites, sulphur, other stone earths and minerals, cement lime, plasters, other manufactured building materials.

NST 7. FERTILIZERS

Natural fertilizers, chemical fertilizers.

NST 8. CHEMICALS

Basic chemicals, aluminium oxide and hydroxide, coal chemicals, paper pulp and waste paper, other chemical products.

NST 9. MACHINERY, TRANSPORT EQUIPMENT, MANUFACTURED ARTICLES AND MISCELLANEOUS ARTICLES

Transport equipment, tractors; agricultural machinery and equipment, other machinery apparatus and appliances, engines and parts, manufactures of material, glass, glassware, ceramic products, leather, textiles and clothing, other manufactured articles, miscellaneous articles.

ANNEX II

Goods Category and Modal Development

To give an overview of the elements that cause different growth rates for each of the modes, a set of three analytical tables has been developed (tables A, B, and C). Before attempting an interpretation of the results a few explanatory notes to the tables:

Column 1: share of each NST-category in road (table A), rail transport (table B) and inland waterway transport (table C) for 1982.

Column 3: idem (year 1983)

Column 2: ((column 3/column 1) - 1) x 100 (1)

Column 4: growth rates of total tonnage transported per NST-category (three modes)

Column 5: % change derived from the 1983 figures and 1982 figures in table 6 using formula (1)

Column 6: forecasted growth rates (1983) by NST-category for the different transport modes

Column 7: the figure at the bottom corresponds to the total growth rate (NST 0-9) for road (table A), rail (table B) and inland waterways (table C).

Table A reveals that in 1983 the larger part of expected growth for road transport comes from NST 6. A positive effect comes also from six other NST-categories which each contribute between 0.1 % and 0.3 % to growth. With the exception of NST 6, NST 8, and NST 9, where total transport demand is growing by 3.2 %, 1 %, and 0.5 % respectively (see column 4), the forecast increase in road transport activity is brought about by improved market shares which compensate for the negative growth rate of other NST categories.

Table B for rail transport indicates that, with exception of NST 6, all other NST-categories contribute negatively to growth. Although the potential market for NST 9 is growing at 0.5 % in 1983 (see column 4), its contribution to rail transport growth is negative at - 0.3 %, due to a loss of market share of 2.3 %. For the 7 other NST-categories the negative changes in overall demand are amplified by losses of market share. The loss of market share for NST 9 transport is probably the most dramatic factor, since this category was a probable source of future growth in rail transport.

Table C shows that inland waterways will receive a positive contribution to growth from NST 6, although its share in this market drops by 1.8 %. The expected improvement in the share of inland waterways in the transport of NST-3 goods nearly compensates the fall in overall demand in this market. The performance in the NST-9 market is weak, due to a loss of market share dominating the low growth of this market in 1983. For the other NST categories, the market share is not growing enough to avoid a negative contribution to the overall result for inland waterways.

The layout of these analytical tables makes it simple to formulate and test alternative modal developments as all the key variables are present. It should be clear that the growth of total tonnage transported (column 4) is dependent on general economic conditions and therefore has to be interpreted as an exogenous variable for the entire transport sector. Market shares can be interpreted as a "policy variable" (instrument), since a particular transport mode can achieve a higher than average growth rate by increasing its market share. The growth rate they want to reach becomes the "policy objective"; in the tables it is found at the bottom of column 7, the other elements in the column being "intermediate objectives". The ways in which the "policy-variable" can be interpreted are manifold: it can take the form of a deliberate government action; it is also possible that it represents autonomous action by transporters, e.g. increased competition via new investment, higher productivity, better service, new management, etc.

ANNEX III

Table A: Road Transport (1983)

	Share in road transport (1982)	% change in share	Share in road transport (1983)	Total tonnage transported by 3 modes (% growth)	% change in road market share	Growth rate of road transport	Contribution to road transport growth
	1	2	3	4	5	6	7
NST 0	11.6	- 1.7	11.4	- 1.3	+ 1.6	+ 0.3	+ 0.03
NST 1	16.4	- 0.6	16.3	- 0.5	+ 1.8	+ 1.3	+ 0.21
NST 2	1.3	- 7.7	1.2	- 3.5	- 0.9	- 4.3	- 0.05
NST 3	1.8	- 5.6	1.7	- 0.7	- 1.9	- 2.6	- 0.04
NST 4	1.5	- 6.7	1.4	- 2.4	+ 1.3	- 1.1	- 0.02
NST 5	8.9	- 2.2	8.7	- 2.7	+ 3.5	+ 0.7	+ 0.06
NST 6	18.8	+ 4.3	19.6	+ 3.2	+ 2.9	+ 6.2	+ 1.22
NST 7	1.7	- 5.9	1.6	- 2.4	+ 0.9	- 1.4	- 0.02
NST 8	15.3	0.0	15.3	+ 1.0	+ 1.2	+ 2.2	+ 0.34
NST 9	22.7	- 1.0	22.8	+ 0.5	+ 0.8	+ 1.3	+ 0.30
TOTAL			100.0				+ 2.0

Note: column 6 = ((1 + column 4/100) x (1 + column 5/100)) - 1
column 7 = column 3 x column 6

Table B: Rail Transport (1983)

	Share in rail transport (1982)	% change in share	Share in rail transport (1983)	Total tonnage transported by 3 modes (% growth)	% change in rail market share	Growth rate of rail transport	Contribution to rail transport growth
	1	2	3	4	5	6	7
NST 0	7.7	0.0	7.7	- 1.3	- 4.0	- 5.3	- 0.41
NST 1	4.2	0.0	4.2	- 0.5	- 3.7	- 4.2	- 0.17
NST 2	13.4	- 0.2	13.2	- 3.5	- 1.4	- 4.8	- 0.61
NST 3	1.4	0.0	1.4	- 0.7	- 0.4	- 1.0	- 0.01
NST 4	21.9	- 0.1	21.8	- 2.4	- 1.4	- 3.8	- 0.81
NST 5	19.1	- 0.3	18.8	- 2.7	- 2.4	- 5.0	- 0.94
NST 6	7.0	+ 0.3	7.3	+ 3.2	- 1.9	+ 1.2	+ 0.01
NST 7	4.1	- 0.1	4.0	- 2.4	- 1.7	-4.0	- 0.16
NST 8	6.0	+ 0.1	6.1	+ 1.0	- 1.7	- 0.7	- 0.04
NST 9	15.2	+ 0.3	15.5	+ 0.5	- 2.3	- 1.9	- 0.28
TOTAL	100.0		100.0				- 3.4

Note: column 6 = ((1 + column 4/100) x (1 + column 5/100)) - 1
column 7 = column 3 x column 6

Table C: Inland Waterway Transport (1983)

	Share in inland waterway transport (1982)	% change in share	Share in inland waterway transport (1983)	Total tonnage transported by 3 modes (% growth)	% change in inland waterway market share	Growth rate of inland waterway transport	Contribution to inland waterway transport growth
	1	2	3	4	5	6	7
NST 0	5.0	0.0	5.0	- 1.3	- 1.4	- 2.7	- 0.14
NST 1	7.7	- 0.2	7.5	- 0.5	- 3.0	- 3.5	- 0.26
NST 2	7.1	0.0	7.1	- 3.5	+ 1.0	- 2.5	- 0.18
NST 3	15.8	+ 0.1	15.9	- 0.7	+ 0.2	- 0.4	- 0.06
NST 4	21.6	- 0.1	21.5	- 2.4	+ 0.4	- 2.1	- 0.45
NST 5	5.4	- 0.2	5.2	- 2.7	- 2.6	- 5.2	- 0.27
NST 6	27.1	+ 0.5	27.6	+ 3.2	- 1.8	+ 1.3	+ 0.36
NST 7	3.6	0.0	3.6	- 2.4	+ 0.3	- 2.1	- 0.08
NST 8	4.7	- 0.1	4.6	+ 1.0	- 3.1	- 2.2	- 0.10
NST 9	2.0	0.0	2.0	+ 0.5	- 2.8	- 2.3	- 0.05
TOTAL	100.0		100.0				- 1.2

Note: column 6 = ((1 + column 4/100) x (1 + column 5/100)) - 1
column 7 = column 3 x column 6

International goods traffic between the Member Countries of the EC

(metric tonnes)

Mode: Road NST: 0-9

from \ to	Year	IRL	DK	B-LUX	NL	IT	UK	F	D	EC
IRL	1980	XXXXXXXXXXX	3975	68562	93488	6829	702817	99061	45731	1020463
	1981	XXXXXXXXXXX	2999	43100	80959	6733	750202	79525	43428	1006946
	1982	XXXXXXXXXXX	2704	48151	85813	6670	786196	83497	39419	1052450
	1983	XXXXXXXXXXX	2671	52663	86383	6851	787849	84829	37680	1058926
DK	1980	7615	XXXXXXXXXXX	109154	235000	196178	632064	248141	2842558	4270710
	1981	10181	XXXXXXXXXXX	108634	248000	203448	677869	251490	2861933	4361555
	1982	8879	XXXXXXXXXXX	119896	307000	213336	767460	288024	2743542	4448137
	1983	9268	XXXXXXXXXXX	125004	298000	211712	779029	298596	2842339	4563948
B-LUX	1980	50672	203247	XXXXXXXXXXX	10196200	1329886	2112468	15165500	9237793	38295766
	1981	74574	230125	XXXXXXXXXXX	10075800	1225769	2409816	15203141	9029632	38248857
	1982	83936	273607	XXXXXXXXXXX	10382400	1290980	2884738	15684541	9343689	39943891
	1983	86697	281688	XXXXXXXXXXX	10636561	1356120	2872006	15907023	9319798	40459893
NL	1980	27399	386000	11266900	XXXXXXXXXXX	1354185	2447826	4121980	14620074	34224364
	1981	33519	428000	11185500	XXXXXXXXXXX	1312000	2810952	4088823	14304665	34163459
	1982	38726	455000	11279800	XXXXXXXXXXX	1396000	3151077	4183025	14356131	34859759
	1983	39932	462000	11583992	XXXXXXXXXXX	1425791	3204362	4066009	14494246	35276332
IT	1980	184	114206	735491	646641	XXXXXXXXXXX	20996	3884258	5371566	10773342
	1981	327	113453	828708	663000	XXXXXXXXXXX	25706	4043298	5633827	11308319
	1982	398	126387	905554	712000	XXXXXXXXXXX	26245	4267439	5562532	11600555
	1983	439	127055	874329	712281	XXXXXXXXXXX	27862	4280165	5710551	11732682
UK	1980	649207	512503	2460593	1858481	71508	XXXXXXXXXXX	1246199	666413	7464904
	1981	693288	549348	2619227	1778264	70183	XXXXXXXXXXX	1464164	604778	7779252
	1982	757278	583955	3042691	1988987	76457	XXXXXXXXXXX	1167705	639876	8256949
	1983	770862	588071	3101376	1996860	78062	XXXXXXXXXXX	1274897	660033	8470161
F	1980	47650	259084	11454075	2447574	4885681	1523396	XXXXXXXXXXX	12707336	33324796
	1981	56977	275331	10253306	2521302	4775157	1692347	XXXXXXXXXXX	12483726	32058146
	1982	55119	285219	10429253	2512456	4771788	1833350	XXXXXXXXXXX	11957894	31845079
	1983	58290	286828	10892385	2509153	4856723	1932812	XXXXXXXXXXX	12327285	32863476
D	1980	27679	1595342	8584607	16399207	5049534	796663	8419686	XXXXXXXXXXX	40872718
	1981	35144	1783821	8479992	16241038	5129864	926440	8638304	XXXXXXXXXXX	41234603
	1982	44003	1904396	8859229	15942114	5423326	1027501	9612416	XXXXXXXXXXX	42812985
	1983	49687	1964809	9065211	16423583	5458161	1080546	9751631	XXXXXXXXXXX	43813628
EC	1980	810406	3074357	34679382	31876591	12893801	8236230	33184825	45491471	170247063
	1981	904010	3383077	33518467	31608363	12723154	9293332	33768745	44961989	170161137
	1982	988339	3631268	34684574	31930770	13178557	10476567	35286647	44643083	174819805
	1983	1015175	3713122	35714960	32662821	13393420	10684466	35663150	45391932	178239046

Source: IFO Institute
Munich

International goods traffic between the Member Countries of the EC

(metric tonnes)

Mode: Inland Waterway — NST: 0-9

from \ to	Year	IRL	DK	B-LUX	NL	IT	UK	F	D	EC
IRL	1980	XXXXXXXXXXX	-	-	-	-	-	-	-	-
	1981	XXXXXXXXXXX	-	-	-	-	-	-	-	-
	1982	XXXXXXXXXXX	-	-	-	-	-	-	-	-
	1983	XXXXXXXXXXX	-	-	-	-	-	-	-	-
DK	1980	-	XXXXXXXXXXX	-	-	-	-	-	-	-
	1981	-	XXXXXXXXXXX	-	-	-	-	-	-	-
	1982	-	XXXXXXXXXXX	-	-	-	-	-	-	-
	1983	-	XXXXXXXXXXX	-	-	-	-	-	-	-
B-LUX	1980	-	-	XXXXXXXXXXX	13757000	-	-	3912907	9636134	27306041
	1981	-	-	XXXXXXXXXXX	12615000	-	-	3552960	9461275	25629235
	1982	-	-	XXXXXXXXXXX	11470937	-	-	3876299	10591414	25938650
	1983	-	-	XXXXXXXXXXX	11190636	-	-	3833122	10284945	25308703
NL	1980	-	-	27952000	XXXXXXXXXXX	-	-	5662575	66685051	100299626
	1981	-	-	26791000	XXXXXXXXXXX	-	-	4175020	65274077	96240097
	1982	-	-	26374887	XXXXXXXXXXX	-	-	3354768	67741437	97471092
	1983	-	-	26577495	XXXXXXXXXXX	-	-	3268205	66147297	95992997
IT	1980	-	-	-	-	XXXXXXXXXXX	-	-	-	-
	1981	-	-	-	-	XXXXXXXXXXX	-	-	-	-
	1982	-	-	-	-	XXXXXXXXXXX	-	-	-	-
	1983	-	-	-	-	XXXXXXXXXXX	-	-	-	-
UK	1980	-	-	-	-	-	XXXXXXXXXXX	-	-	-
	1981	-	-	-	-	-	XXXXXXXXXXX	-	-	-
	1982	-	-	-	-	-	XXXXXXXXXXX	-	-	-
	1983	-	-	-	-	-	XXXXXXXXXXX	-	-	-
F	1980	-	-	3670806	3244185	-	-	XXXXXXXXXXX	10965889	17880880
	1981	-	-	3489604	2915226	-	-	XXXXXXXXXXX	10508465	16913295
	1982	-	-	2917129	2696577	-	-	XXXXXXXXXXX	9779265	15392971
	1983	-	-	2738011	2725502	-	-	XXXXXXXXXXX	10039652	15503165
D	1980	-	-	9147171	31612684	-	-	2813579	XXXXXXXXXXX	43573434
	1981	-	-	9696017	30540181	-	-	2449680	XXXXXXXXXXX	42685878
	1982	-	-	9003522	26915061	-	-	2490627	XXXXXXXXXXX	38409210
	1983	-	-	8947939	27001331	-	-	2260360	XXXXXXXXXXX	38209630
EC	1980	-	-	40769977	48613869	-	-	12389061	87287074	189059981
	1981	-	-	39976621	46070407	-	-	10177660	85243817	181468505
	1982	-	-	38295538	41082575	-	-	9721694	88112116	177211923
	1983	-	-	38263445	40917469	-	-	9361687	86471894	175014495

Source: IFO Institute
Munich

- = non existing

International goods traffic between the Member Countries of the EC

Mode: Rail (metric tonnes) NST: 0-9

from \ to	Year	IRL	DK	B-LUX	NL	IT	UK	F	D	EC
IRL	1980	XXXXXXXXXXX	41	358	.	749	.	384	0	1532
	1981	XXXXXXXXXXX	58	272	.	793	.	513	0	1636
	1982	XXXXXXXXXXX	39	256	.	752	.	488	0	1535
	1983	XXXXXXXXXXX	42	308	.	674	.	452	0	1476
DK	1980	942	XXXXXXXXXXX	56614	4574	62164	3840	19919	249989	398042
	1981	1547	XXXXXXXXXXX	47614	2078	50794	4263	21118	253505	380919
	1982	1969	XXXXXXXXXXX	39234	1182	49748	3511	19631	633062	748337
	1983	1814	XXXXXXXXXXX	37802	1018	49942	3188	18212	441720	553696
B-LUX	1980	7008	50284	XXXXXXXXXXX	1669500	1249220	59702	6246723	3708449	12990886
	1981	3039	50329	XXXXXXXXXXX	1690400	1126677	43367	5480199	3358427	11752438
	1982	5102	57657	XXXXXXXXXXX	1637211	1116116	38722	5462018	2928151	11244977
	1983	6210	56785	XXXXXXXXXXX	1660406	1114154	35985	5129594	2935353	10938487
NL	1980	.	12585	1947700	XXXXXXXXXXX	264762	.	912069	4639975	7777091
	1981	.	11526	1980200	XXXXXXXXXXX	294723	.	752323	4351876	7390648
	1982	.	13981	2006284	XXXXXXXXXXX	283425	.	908578	3103085	6315353
	1983	.	14704	1952064	XXXXXXXXXXX	279123	.	818805	2928609	5993305
IT	1980	200	14203	520966	478674	XXXXXXXXXXX	413783	1502725	2316304	5246855
	1981	9	13987	514412	517631	XXXXXXXXXXX	492657	1451687	2345714	5336097
	1982	7	12864	530504	513623	XXXXXXXXXXX	499251	1777021	2105238	5438508
	1983	14	12424	537139	504199	XXXXXXXXXXX	486661	1557005	2135790	5233232
UK	1980	.	1385	76061	.	241794	XXXXXXXXXXX	58188	106224	483652
	1981	.	1132	75279	.	144001	XXXXXXXXXXX	76677	118166	415255
	1982	.	3560	61414	.	137961	XXXXXXXXXXX	70298	105323	378556
	1983	.	2916	60309	.	140803	XXXXXXXXXXX	69083	102031	375142
F	1980	2938	66264	10854724	611795	7543928	121015	XXXXXXXXXXX	6513652	25714316
	1981	1842	69244	9299170	471419	6949931	139120	XXXXXXXXXXX	5192087	22122813
	1982	1403	82863	9180342	487042	6614334	151952	XXXXXXXXXXX	4308878	20826814
	1983	2150	79567	8972629	461803	6454472	145505	XXXXXXXXXXX	4112405	20228531
D	1980	431	571609	5956940	2067370	4988548	148788	9072165	XXXXXXXXXXX	22805851
	1981	24	669772	5545969	2178403	4836651	171822	7329624	XXXXXXXXXXX	20732265
	1982	10	815631	4100741	1833317	4571330	137949	6404367	XXXXXXXXXXX	17863345
	1983	19	782103	4023503	1838792	4425223	131973	6133274	XXXXXXXXXXX	17334887
EC	1980	11519	716371	19413363	4831913	14351165	747128	17812173	17534593	75418225
	1981	6461	816048	17462916	4859931	13403570	851229	15112141	15619775	68132071
	1982	8491	986595	15918775	4472375	12773666	831385	14642401	13183737	62817425
	1983	10207	948541	15583754	4466218	12464391	803312	13726425	12655908	60658756

Source: IFO Institute Munich

. = no figures available

International goods traffic between the Member Countries of the EC

Modes: all modes (metric tonnes) NST: 0-9

from \ to	Year	IRL	DK	B-LUX	NL	IT	UK	F	D	EC
IRL	1980	XXXXXXXXXXX	4016	68920	93488	7578	702817	99445	45731	1021995
	1981	XXXXXXXXXXX	3057	43372	80959	7526	750202	80038	43428	1008582
	1982	XXXXXXXXXXX	2743	48407	85813	7422	786196	83985	39419	1053985
	1983	XXXXXXXXXXX	2713	52971	86383	7525	787849	85281	37680	1060402
DK	1980	8557	XXXXXXXXXXX	165768	239574	258342	635904	268060	3092547	4668752
	1981	11728	XXXXXXXXXXX	156248	250078	254242	682132	272608	3115438	4742474
	1982	10848	XXXXXXXXXXX	159130	308182	263084	770971	307655	3376604	5196474
	1983	11082	XXXXXXXXXXX	162806	299018	261654	782217	316808	3284059	5117644
B-LUX	1980	57680	253531	XXXXXXXXXXX	25622700	2579106	2172170	25325130	22582376	78592693
	1981	77613	280454	XXXXXXXXXXX	24381200	2352446	2453183	24236300	21849334	75630530
	1982	89038	331264	XXXXXXXXXXX	23490548	2407096	2923460	25022858	22863254	77127518
	1983	92907	338473	XXXXXXXXXXX	23487603	2470274	2907991	24869739	22540096	76707083
NL	1980	27399	398585	41166600	XXXXXXXXXXX	1618947	2447826	10696624	85945100	142301081
	1981	33519	439526	39956700	XXXXXXXXXXX	1606723	2810952	9016166	83930618	137794204
	1982	38726	468981	39660971	XXXXXXXXXXX	1679425	3151077	8446371	85200653	138646204
	1983	39932	476704	40113551	XXXXXXXXXXX	1704914	3204362	8153019	83570152	137262634
IT	1980	384	128409	1256457	1125315	XXXXXXXXXXX	434779	5386983	7687870	16020197
	1981	336	127440	1343120	1180631	XXXXXXXXXXX	518363	5494985	7979541	16644416
	1982	405	139251	1436058	1225623	XXXXXXXXXXX	525496	6044460	7667770	17039063
	1983	453	139479	1411468	1216480	XXXXXXXXXXX	514523	5837170	7846341	16965914
UK	1980	649207	513888	2536654	1858481	313302	XXXXXXXXXXX	1304387	772637	7948556
	1981	693288	550480	2694506	1778264	214184	XXXXXXXXXXX	1540841	722944	8194507
	1982	757278	587515	3104105	1988987	214418	XXXXXXXXXXX	1238003	745199	8635505
	1983	770862	590987	3161685	1996860	218865	XXXXXXXXXXX	1343980	762064	8845303
F	1980	50588	325348	25979605	6303554	12429609	1644411	XXXXXXXXXXX	30186877	76919992
	1981	58819	344575	23042080	5907947	11725088	1831467	XXXXXXXXXXX	28184278	71094254
	1982	56522	368082	22526724	5696075	11386122	1985302	XXXXXXXXXXX	26046037	68064864
	1983	60440	366395	22603025	5696458	11311195	2078317	XXXXXXXXXXX	26479342	68595172
D	1980	28110	2166951	23688718	50079261	10038082	945451	20305430	XXXXXXXXXXX	107252003
	1981	35168	2453593	23721978	48959622	9966515	1098262	18417608	XXXXXXXXXXX	104652746
	1982	44013	2720027	21963492	44690492	9994656	1165450	18507410	XXXXXXXXXXX	99085540
	1983	49706	2746912	22056653	45263706	9883384	1212519	18145265	XXXXXXXXXXX	99358145
EC	1980	821925	3790728	94862722	85322373	27244966	8983358	63386059	150313138	434725269
	1981	910471	4199125	90958004	82538701	26126724	10144561	59058546	145825581	419761713
	1982	996830	4617863	88898887	77485720	25952223	11307952	59650742	145938936	414849153
	1983	1025382	4661663	89562159	78046508	25857811	11487778	58751262	144519734	413912297

Source: IFO Institute
Munich

European Communities — Commission

Analysis and forecasts - 1983

Luxembourg: Office for Official Publications of the European Communities

1983 — 28 p. — 21.0 X 29.7 cm

DE, EN, FR, IT

ISBN 92-825-3685-8

Catalogue number: CB-37-83-344-EN-C

Price (excluding VAT) in Luxembourg

ECU 2,24 BFR 100 IRL 1.60 UKL 1.40 USD 2.50

Description of general trends in transport activity in 1982 (estimates) and 1983 (forecast) including detailed analysis by mode of transport, goods categories and geographical relations.

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Tlf: (01) 12 11 95
Girokonto 200 11 95

Underagentur:

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Telex 19280 EUROIN DK

BR DEUTSCHLAND

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ISBN 92-825-3685-8