Japan International Cooperation Agency (JICA)
Ministry of Transport and Communications (MOTC)
Klaipeda State Seaport Authority (KSSA)

No.

KLAIPEDA

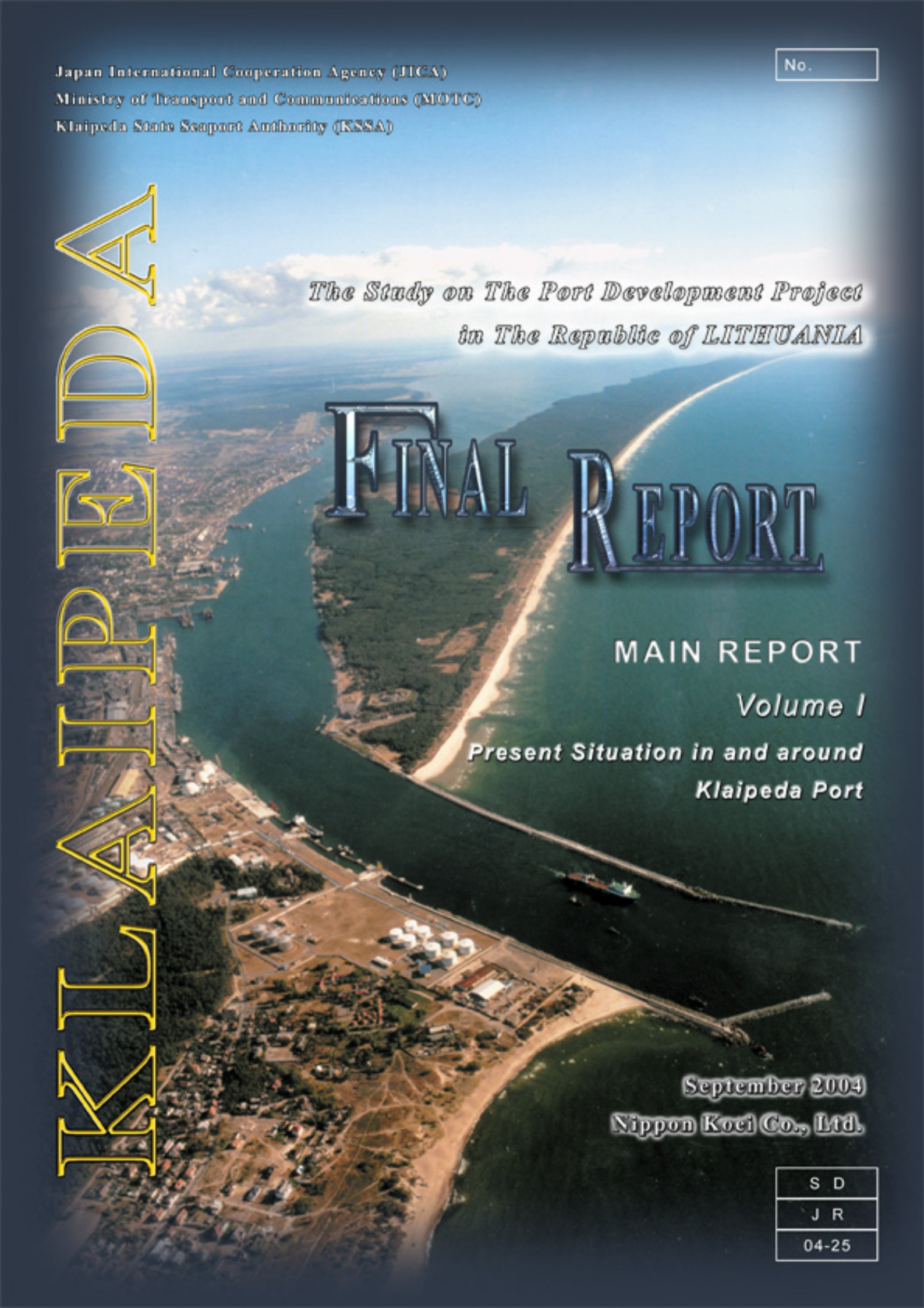
The Study on The Port Development Project in The Republic of LITHUANIA

FINAL REPORT

MAIN REPORT

Volume I

Present Situation in and around Klaipeda Port



September 2004

Nippon Koei Co., Ltd.

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EXCHANGE RATE

1 Euro = 1.238 US dollar = 3.44 Lytas = 130 Yen
(as of end of January 2004)

PREFACE

In response to a request from the Government of the Republic of Lithuania (hereinafter referred to as "GOL"), the Government of Japan decided to conduct a Study on the Port Development Project in the Republic of Lithuania and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team to Lithuania three times between March 2003 and June 2004, which was headed by Mr. Kiyokuni Okubo of Nippon Koei Co. Ltd. (NK).

The team held discussion with the officials concerned of the GOL and conducted the field surveys at the study area. Upon returning to Japan, the team conducted studies and prepared this report.

I hope that this report will contribute to the promotion of the project and to the enhancement of the friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of GOL for their close cooperation extended to the team.

September 2004

Kazuhisa Matsuoka
Vice President
Japan International Cooperation Agency

LETTER OF TRANSMITTAL

September 2004

Mr. Kazuhisa Matsuoka
Vice President
Japan International Cooperation Agency

Dear Mr. Matsuoka

It is my great pleasure to submit herewith the Final Report of "The Study on the Port Development Project in the Republic of Lithuania".

The study team comprised of Nippon Koei Co. Ltd. (NK) conducted surveys in the Republic of Lithuania over the period between March 2003 and June 2004 according to the contract with the Japan International Cooperation Agency (JICA).

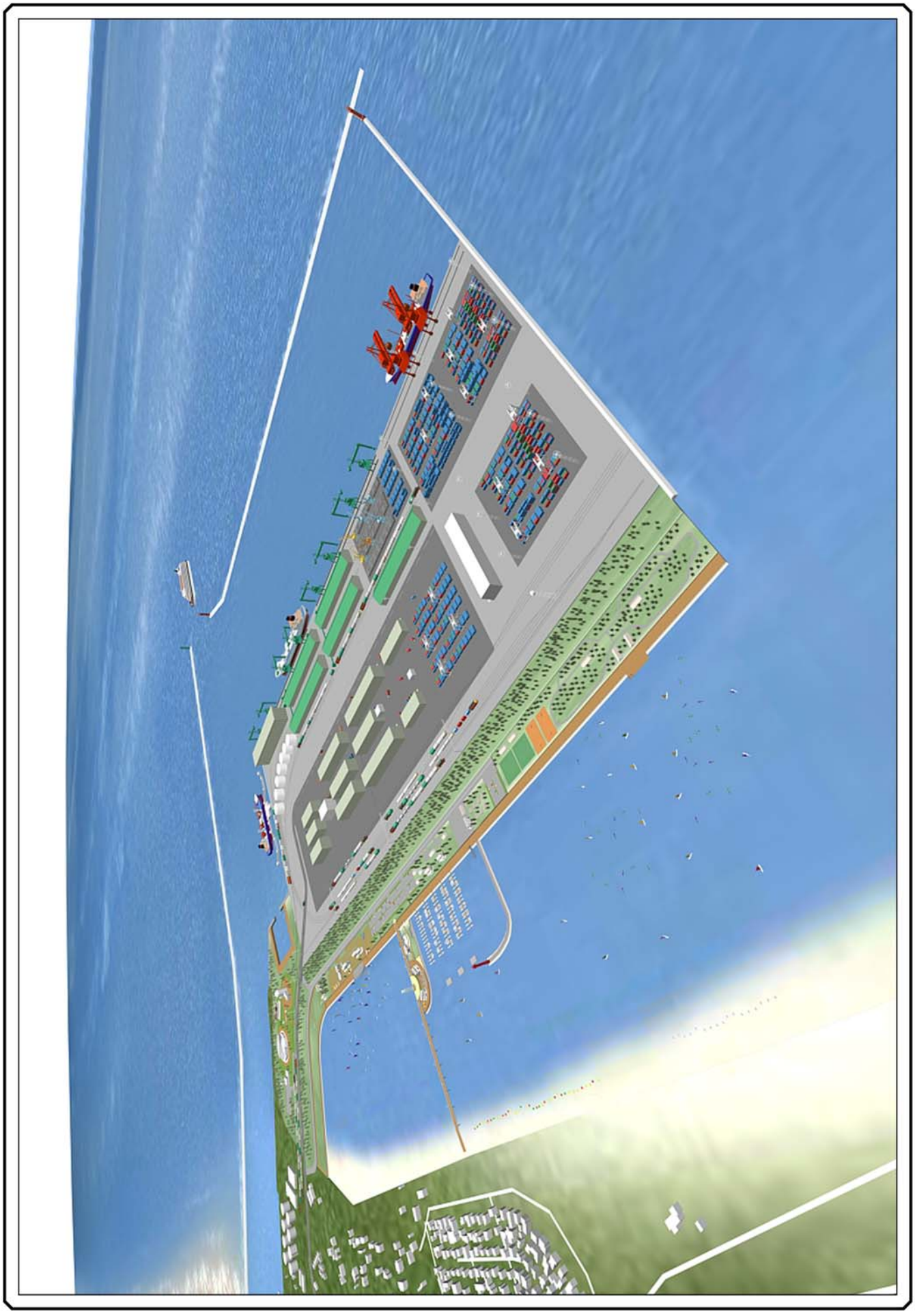
The study team compiled this report, which proposes the Master Plan and Short-term Development Plan of Klaipeda Port for 2025 and 2015 respectively, together with the feasibility study on the key projects, through close consultations with officials of the Ministry of Transport and Communications, Klaipeda State Seaport Authority and other authorities concerned.

On behalf of the study team, I would like to express my heartfelt appreciation to the Ministry of Transport and Communications and Klaipeda State Seaport Authority and other authorities concerned for their cooperation, assistance, and heartfelt hospitality extended to the study team.

I am also greatly grateful to the Japan International Cooperation Agency, the Ministry of Foreign Affairs, the Ministry of Land, Infrastructure and Transport, and the Embassy of Japan in Lithuania for valuable suggestions and assistance during the course of the study.

Yours faithfully,

Kiyokuni OKUBO
Team Leader
The Study on the Port Development Project
in the Republic of Lithuania



Master Plan of Klaipeda Port

Location Map of Klaipeda Port Area

THE PORT DEVELOPMENT PROJECT
IN THE REPUBLIC OF LITHUANIA

VOLUME I

MAIN REPORT
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ABBREVIATIONS TABLE

'E'	Road European Road Number
2K	Project K is the initial of Klaipeda Port and Kaliningrad Port
APEC	Asia Pacific Economic Cooperation
AIS	Automatic Identification System
BAF	Bunker Adjustment Fee
BBT	Baltic Bulk Terminal
BC	Belarusian Railways
B/C	Benefit/Cost
BOD	Biochemical Oxygen Demand
BOT	Build, Operate and Transfer
Bpd	Barrels per day
BSL	Baltic Sea Level
CARs	The Central Asian Republics
CD	Chart Datum
CEDA	Central Dredging Association
CFC	Standard Conversion Factor
CFS	Container Freight Station
CFSL	Conversion Factor for Skilled Labour
CFUL	Conversion Factor for Unskilled Labour
CIF	Cost, Insurance and Freight
CIM	Uniform Rules Concerning the Contract for International Carriage of Goods by Rail
CIS	Commonwealth of Independent States
CMR	Centre of Marine Research, Ministry of Environment
CNC	Compagnie Nouvelle de Conteneurs
DAP	Diammonium Phosphate
DEP	Department of Environment Protection
DGPS	Differential Global Positioning System
DIN	Deutsches Institut fur Normung e.V
DWT	Dead Weight Tonne
EBRD	European Bank for Reconstruction and Development
EC	European Communities
ECE	Economic Commission for Europe
EDI	Electronic Data Interchange
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EIRR	Economic Internal Rate of Return
EIU	Economist Intelligence Unit
EPD	Environmental Protection Department
ERR	Economic Rate of Return
ESN	European Shortsea Network
ESTO	European Sea Ports Organization
ETSNG	Unified Cargo Nomenclature of CIS (Russian Abbreviation)
EU	European Union
EVR	Estonian Railway
F/S	Feasibility Study

FAO	Food & Agriculture Organisation
FEC	Federal Energy Commission
FEZ	Free Economic Zone
FIRR	Financial Internal Rate of Return
FOB	Free on Board
FSU	Former Soviet Union
GDP	Gross Domestic Product
GOJ	Government of Japan
GTA	Global Trade Atlas
HKN	Harmonized Cargo Classifier (Russian Abbreviation)
IADC	International Association Dredging Companies
IBRD	International Bank for Reconstruction and Development
ICD	Inland Container Depot
ICF	Intercontainer-Interfrigo
IEE	Initial Environmental Examination
IMDG	International Maritime Dangerous Goods
IMF	International Monetary Fund
IMO	International Maritime Organisation
IPC	Implementation Provisions of the Community
IRR	Internal Rate of Return
ISPA	Instrument for Structural Policies for Pre-Accession
ISPS	International Ship and Port Facility Security
IT	Information Technology
JICA	Japan International Cooperation Agency
KSSA	Klaipeda State Seaport Authority
KUBIS	Klaipeda Port Community Information System
KZH	Kazakhstan Railways
LAN	Local Area Network
LCL	less-than-carload
LDZ	Latvian Railway
LEI	Lithuanian Energy Institute
LG	Lithuanian Railways
LINAVA	Lithuanian National Road Carriers Association
LOA	Length Overall
LRP	Level Repayment Principle
MLA	Multi-Lateral Agreement
MOE	Ministry of Environment
MOF	Ministry of Finance
MOTC	Ministry of Transport and Communications
MTT	International Transit Tariff (Russian Abbreviation)
N/A	Not available
NATO	North Atlantic Treaty Organisation
NCC	National Container Company
NEN	North European Network
NIB	Nordic Investment Bank
NMBS	Belgian National Railways
NPV	Net Present Value
OCJD	Organization of Cooperation of Railways (Russian Abbreviation)
OD	Origin and Destination
OECD	Organization for Economic Co-operation and Development

OSJD	Organization for Railway Cooperation
PAHs	Polycyclic Aromatic Hydrocarbons
PHARE	Poland, Hungary, Aid of Economic Reconstruction
PIANC	Permanent International Association of Navigation Congresses
PTMS	Port Traffic Management System
RF	Russian Federation
Ro/Ro	Roll on Roll off
RTG	Rubber-Tire Gantry Cranes
RZD	Russian Railways
SCF	Standard Conversion Factor
SMGS	Agreement on International Goods Transports by Rail
SOLAS	Safety of Life at Sea
SPM	Single Point Mooring Buoy
TACIS	Technical Assistance of the Commonwealth of Independent States
TBT	Tributyl Tin
TEN	Trans-European Network
TEU	Twenty Foot Equivalent Unit
TINA	Transport Infrastructure Needs Assessment
TIR	Carnet TIR (Transport Internationaux Routiers:French; International Road Transport)
TOR	Terms of Reference
TRACECA	Transport Corridor Europe Caucasus Asia
UAIS	Universal Automatic Identification System
UAN	Urea Ammonium Nitrate
UIC	International Union of Railways (French abbreviation of Union Internationale Des Chemins de Fer)
UN	United Nations
USD	United States Dollars
VAT	Value Added Tax
VLCC	Very Large Crude Carrier
VTS	Vessel Traffic System
VTT	Technical Research Centre of Finland
WGS 84	World Geodetic System 1984
WTO	World Trade Organization

Abbreviation of Common Weights Measures and Technical Terms

%	Percentage
$^{0}/_{00}$	Parts per thousand
_², m², sq. m	Square e.g. square metre(s)
_^{3}, m^3, cu. m	Cubic e.g. cubic metre(s)
Bn or 10^9	Billion
GT	Gross ton(s)
HP, PS	Horsepower
hr or h	Hour(s)
Hz	Hertz
In.	Inch(es)
Kl	kilolitre(s)
knots	Marine speed measurement
Kph	Kilometres Per Hour
l	Litre
mg O/l	Milligrams of Oxygen per litre
Mill	Million
NM	Nautical mile(s)
No	Number (serial number)
no(s)	(units)
^{0}	Degrees of latitude or longitude
^{o}C	Celsius Degrees (Centigrade)
ppm	Parts per million
Psi	Pound per square inch
rpm	Revolutions per minute
W	Width

MEASUREMENT UNITS TABLE

Extent

cm^2	Square-centimetres (1.0 cm x 1.0 cm)
m^2	Square-metres (1.0 m x 1.0 m)
km^2	Square-kilometres (1.0 Km x 1.0 Km)
ha.	Hectares (10,000 m^2)

Length

mm	Millimetres
cm	Centimetres (10 mm)
m	Metres (100 cm)
km	Kilometres (1,000 m)

Currency

US$	United State Dollars
J¥	Japanese Yen
∈	EURO
Lt.	Litas (3.4528Lt/∈)

Weight

mg	Milligram (s)
g	Gram (s) (1,000 mg)
Kg	Kilogram (s) (1,000 g)
Ton, t or MT	Metric tonne (1,000 kg)

Time

sec.	Seconds
min.	Minute (60 Sec.)
hr.	Hours (60 Min.)

Standard Conversions

1 inch = 25.4 mm
1 feet = 0.3048 m

CHAPTER 1 PRESENT SITUATION AND FUTURE PROSPECTS IN LITHUANIA AND SURROUNDING COUNTRIES

CHAPTER 1 PRESENT SITUATION AND FUTURE PROSPECTS IN LITHUANIA AND SURROUNDING COUNTRIES

1.1 Baltic Sea Ports

1.1.1 Location of Baltic Ports

The Baltic States of Lithuania, Latvia and Estonia occupy a strategic location on the Eastern edge of the Baltic Sea north of Poland and Kaliningrad (Russia). For many years they have provided transit routes between Russia/Central Asia and the trading markets in Europe and throughout the world. A map showing of the Baltic States and highlighting these routes and principal ports can be found in Figure I.1.1-1 below.

Figure I.1.1-1 Location of Principal Baltic Sea Ports

1.1.2 Estonian Ports

The main port of Estonia is Tallinn, which is composed of two port divisions, namely Old City Harbor and Muga Harbor. In addition to this large commercial port, there is a small port named Paldiski Harbor.

(1) Old City Harbor

Old City Harbor is located near the center of Tallinn City, and serves as a main international passenger terminal of Tallinn Port. The major ferry routes are linked to Helsinki and Stockholm. The annual traffic of passengers is more than 6 million, 90% of which travel to/from Finland. The harbor has a quay 3,700m long, and is capable of accommodating a maximum ship size of 240m in LOA. The Tallinn Port Authority has a plan to develop the Old City Harbor into a passenger terminal complex by shifting its cargo handling quays to Muga Harbor and Paldiski Harbor. (A general view of Old City Harbor is shown in Photo I.1.1-1)

(2) Muga Harbor

Muga Harbor is located 17km from the city center, and serves as a main cargo terminal of Tallinn Port. Muga Harbor handles 70% of total cargo throughputs and 90% of transit cargo through Estonia. It has six oil terminals and cargo terminals for dry bulk, general cargo, containers and grain. The harbor quay is 3,800m long and 17.4m deep at the maximum. (A general view of Muga Harbor is shown in Photo I.1.1-2)

(3) Paldiski Harbor

Paldiski Harbor is located about 50km north of Tallinn City. Paldiski Harbor, which was developed as a military port under the rule of the FSU, has been redeveloped into a commercial port. It handles metal, fertilizer, peat and Ro/Ro cargo. The total quay length is 783 m and the maximum water depth is 9.7 m. (A general view of Paldiski Harbor is shown in Photo I.1.1-3)

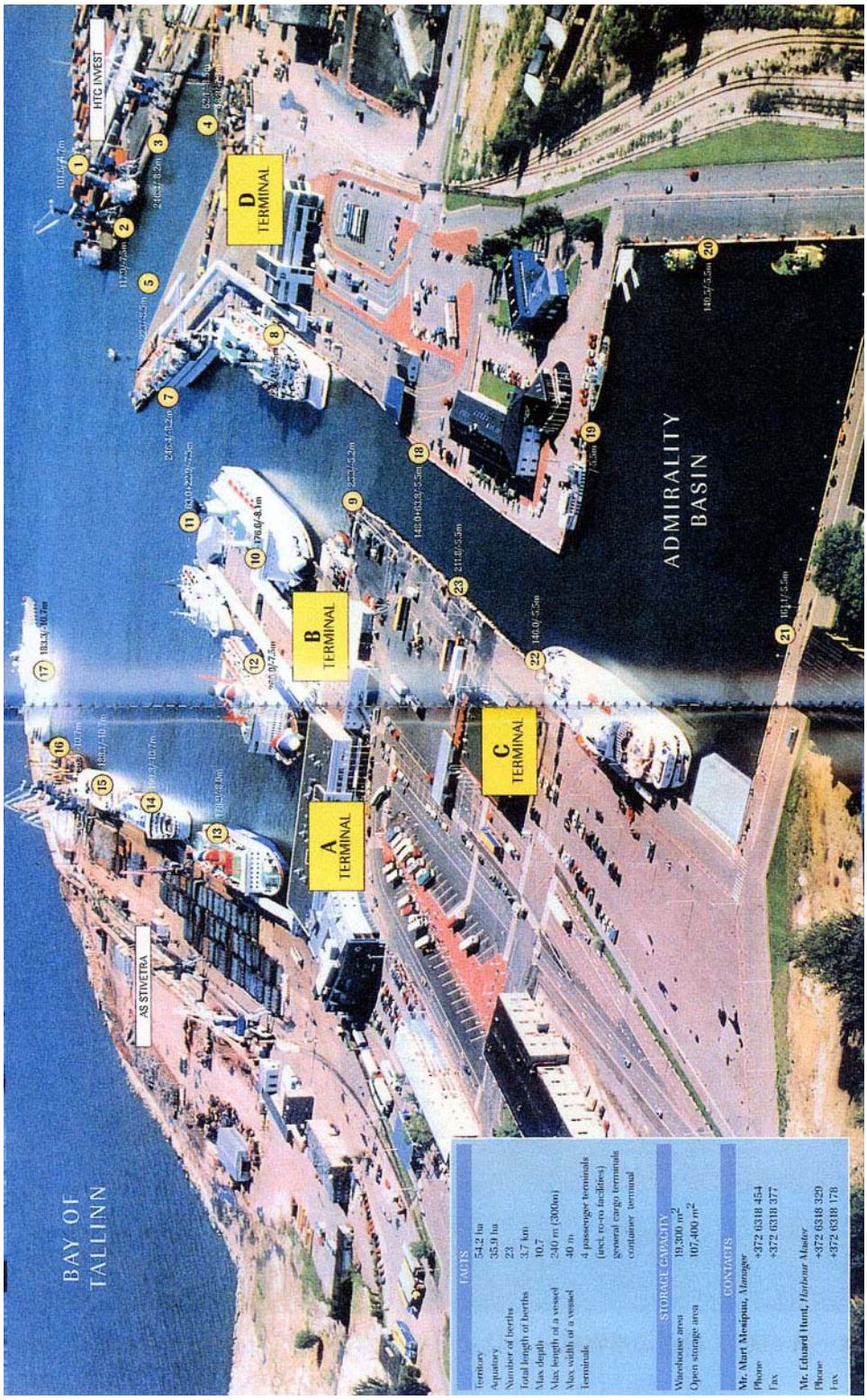


Photo-I.1.1-1 Old City Harbour of Tallinn Port

Photo I.1.1-2 Muuga Harbour of Tallinn Port

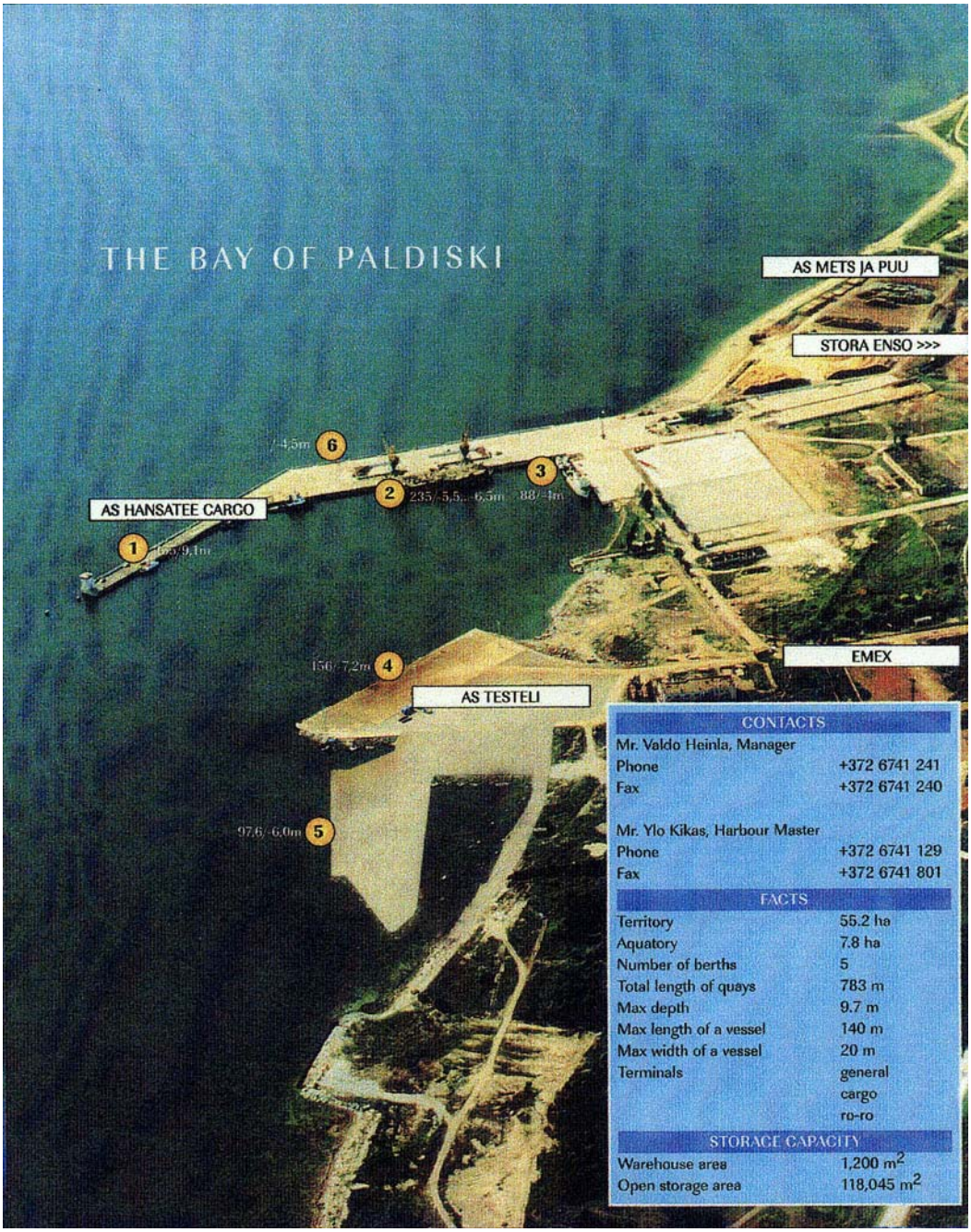


Photo I.1.1-3 Paldiski Harbour of Tallinn Port

1.1.3 Latvian Ports

In Latvia three ports are in operation, including Riga Port, Ventspils Port and Liepaja Port.

(1) Riga Port

Riga Port is a river port situated at the estuary of the River Daugava that flows into the Gulf of Riga. Riga Port, taking geographical advantage of being close to Moscow, handles a substantial amount of transit cargo to/from Russia. Its staple cargoes are timber, followed by metal. During winter time, the port is frozen, requiring ice-breaking operation. The quay is 12,662 m long and 10.6 m deep at the maximum. (A general plan of Riga Port is shown in Figure I.1.1-2)

(2) Ventspils Port

Ventspils Port is located outside the Gulf of Riga and about 160 km west of Riga Port. Ventspils Port is the largest port in Latvia, chiefly handling transit bulk cargoes such as crude oil and oil products from Russia. The total quay length is 11,012 m and the maximum quayside depth is 17 m. (A general plan of Ventspils Port is shown in Figure I.1.1-3)

(3) Liepaja Port

Liepaja Port is located about 100 km south of Ventspils Port. Originally it was developed as a navy base and redeveloped into a commercial port after 1994. Its port zone is as large as 1,180 ha. Now only the inner port basin has been used leaving the outer port basin undeveloped. The major commodities are metal, pulpwood and oil products. (A general plan of Liepaja Port is shown in Figure I.1.1-4)

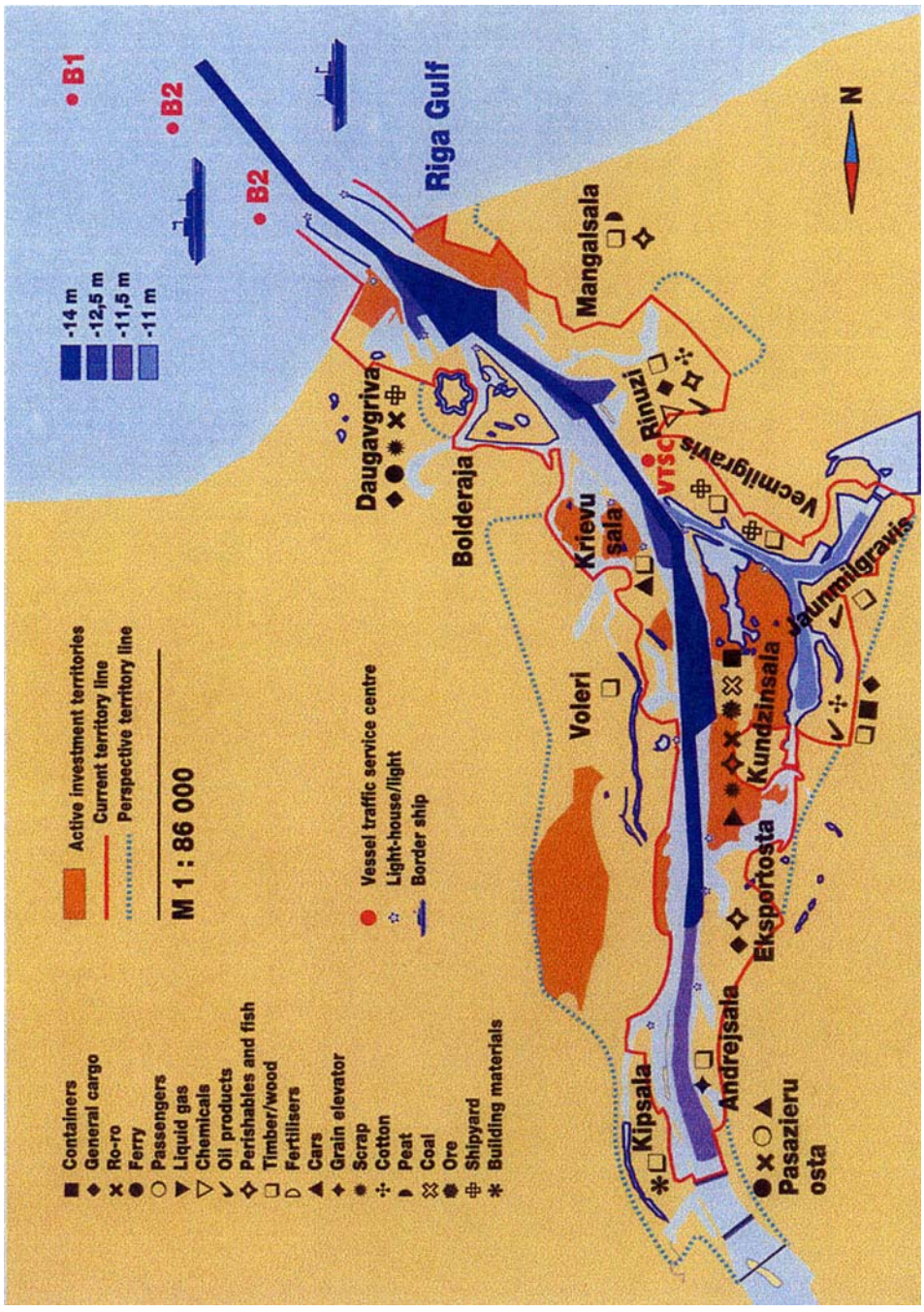


Figure I.1.1-2 Plan of Riga Port

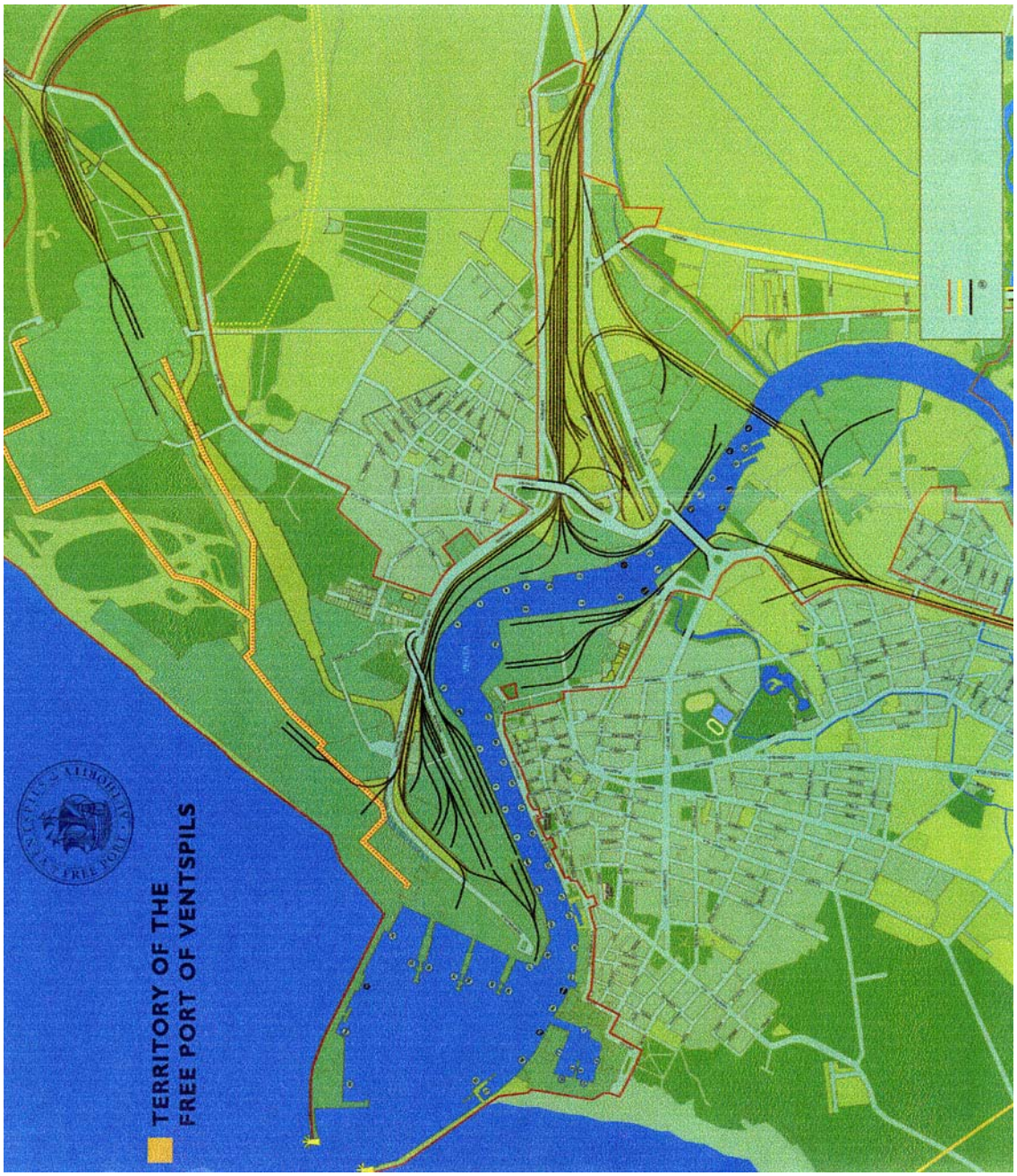


Figure I.1.1-3 Plan of Ventspile Port

Figure I.1.1-4 Plan of Liepaja Port

1.1.4 Lithuanian Ports

In Lithuania there are three ports, viz. Klaipeda Port and Sventoji Port.

(1) Klaipeda Port

Klaipeda Port is located in the eastern part of the Baltic Sea as the northernmost ice-free port. The port is a transit centre in Lithuania connecting the main transportation corridors between the East and West via sea routes. Its staple cargoes are petroleum, grains, fertilizer, iron and steel products, timber, container cargo and Ro/Ro cargo. The quay is 19,880 m long and 14 m deep at the maximum (see Sections 2.1 to 2.7 of Chapter 2 for details).

(2) Sventoji Port

Sventoji Port is located on the northernmost coast of Lithuania facing the Baltic Sea. The port was developed in the middle of the last century as a digging-type port whose entrance was protected by wooden-pile breakwaters stuffed with rubble stretching into the Baltic Sea from the sandy beach. Presently, however, the port is not in operation and is left with ruins of destroyed breakwaters and basins that are choked with sand. There is an idea to revive the port as a recreation port rather than a commercial port.

(3) Butinge Port

Butinge Port is located close to the Lithuania's border with Latvia, handles crude oil through SPM system.

1.1.5 Russian Ports in the Baltic Sea

There are two Russian port regions in the Baltic Sea, which are the Kaliningrad region and the St. Petersburg region. The Kaliningrad region has two ports. The first is in Kaliningrad city itself, approximately 46 km from the sea on the edge of the east shore of the lagoon. The second is at Baltiysk near the entrance to the lagoon on the north side of the channel of Kalinigrad. The St. Petersburg region has three ports. The first is St. Petersburg Port that is a main port of Russia now in operation. The other two ports are being developed further down the Gulf of Finland in deep water - Primorsk for oil on the north side and Ust Luga on the south side.

(1) Kaliningrad Port (Kaliningrad)

Kaliningrad Port is located on a river flowing east to west into the Kaliningrad lagoon through the former capital of East Prussia, Konigsburg (See Figure I.1.1-5). In the 19th and early 20th century, the western strip of Lithuania up to and including the Klaipeda region was part of East Prussia. Klaipeda itself was called Memel. Konigsburg was a German naval base in WWII, and was almost completely destroyed by Allied bombing in 1944. After reoccupation by Russia in 1945, Konigsburg was renamed Kaliningrad and the city was rebuilt.

The port has four main harbors (basins) angled southeast off the river, each up to about 1000m long. There are also riverside berths. Downstream, the river channel becomes a dredged channel 9m deep along the north edge of the lagoon. The natural depth of the lagoon is mostly 3m to 5m, and the channel is about 46km long. For large ships a convoy system operates, two convoys in and two convoys out per day, at 4-hourly intervals, and no night navigation.

In the commercial harbor, various kinds of cargoes are handled, including fertilizer, agri-products, steel products (plate, pig iron, coils, etc) and containers. Grain is handled by grain elevators and containers by 32t cranes. The terminal operation is very busy with storage areas being very full. Many sheds and railway lines are interrupting yard traffic, though, it can be said that the terminal is operated in a reasonably tidy manner and is organized. It is reported that the tariff at Kaliningrad is cheaper than that of St. Petersburg, and it is free of ice.

Figure I.1.1-5 Plan of Kaliningrad Port

(2) Baltiysk Port (Kaliningrad)

On the north side of the entrance to the lagoon is Baltiysk, which is located on a bit of a peninsula/spit from the north. Baltiysk is mainly a naval base for the Russian navy. The most easterly basin of the naval base has recently been developed as a Ro/Ro ferry terminal provided with renovated quay and stern ramp areas. Part of the terminal is still under construction, including a passenger terminal with a quay depth of 10.5m. By the year 2010, four quays up to 520m long in an echelon shape plus an oil terminal pier will be developed. Back-up areas around 800m to 1000m long will be provided for rail ferry, container and general cargo terminals. The rail ferry terminal will connect Kaliningrad, St. Petersburg and Mukran.

(3) St. Petersburg Port (St. Petersburg)

St. Petersburg Port consists of several terminals, including the Sea Port of Saint-Petersburg (JSC), Baltic Bulk Terminal (BBT), etc. (See Figure I.1.1-6). The JSC is a private group of eight stevedoring companies, plus a number of auxiliary companies (towage, security, personnel, agency, bunkering and others). The stevedoring companies within the group handle 55% to 60% of the total traffic through St. Petersburg Port.

The container terminal is tidy, but appears very full, operated in a straddle-carrier system, and almost all slots are stacked two-story high, including most of the reefer points. There is a CFS shed, but it is not used much (only 3% to 4%). No unpacking into rail wagons takes place in the terminal. About 90% of containers are hauled

in/out by truck. Apparently, a good tracking system has solved the container-tracking problem. It uses chips they add to the containers and there are real-time computer links between the terminal and customs.

A National Container Company (NCC) has been formed by individuals who own JSC, aiming to unite several container terminals (St. Petersburg and in due course Ust Luga, Moscow, Far East, Caspian Sea and Black Sea ports). It is taking the JSC systems as models for container tracking and custom clearance. NCC cannot control extension of railways or roads.

Baltic Bulk Terminal (BBT), (Berths 106-107) handles mineral fertilizer with a planning capacity of 7 million tons per year. The berths are equipped with 3,000 tons per hour loader capacity and two storage sheds. A bulk carrier Eira (19,600 DWT, 9m draft, geared with grabs) is used as a top-up ship. Panamax bulkers are loaded to the maximum permitted draft at BBT, and shifted out to buoys near Kronstadt Island to top up from Eira.

St. Petersburg Port is planning to expand in the SW corner by reclamation seawards alongside the channel, and extension of the back-up area along the shore. The port intends to move coal handling out of St. Petersburg altogether and much of the oil and some of the other bulk cargoes as well. There would seem to be plenty of room for development of major container facilities in the SW corner region. However, the road and rail connections are a problem. The port is within the greater city area, and the port access is very difficult.

The access channel to St. Petersburg is about 50 km long. It passes south of Krngstadt Island. The channel is 13m deep, allowing a maximum draft of 11m, and its traffic is restricted to one way for large vessels except in passing places. The port is planning to increase the permitted draft to 13m and widen the channel by 60m to allow two-way traffic.

Individual companies set the tariff level, but the JSC management control the strategy, analyse the market and competition, and set terms. The tariff is equal for all stevedoring companies within the group to avoid competition/undercutting on price.

(4) Ust Luga (St. Petersburg)

The Ust Luga Company is a joint stock company empowered by the Ministry of Transport to develop the Ust Luga port complex, which has leased a land area of 800 ha for 50 years. Subsidiary companies have been formed to operate the terminals and provide services such as electric power, marine services and water supply.

In practice, only a coal terminal exists, and that only in a preliminary form. The land has been reclaimed and only a small part of the planned storage area has been completed. The loading facilities are fairly simple (see Photo I.1.1-4 and I.1.1-5). At the time of writing a total of 23,000 tons of coal had been shipped so far in 2003. The terminal is not yet in a position to challenge the Riga coal terminal, but in a few years with investment in proper machinery, it could well be.

Recently, a memorandum has been signed with representatives of the German government to open a rail ferry between Ust Luga, Baltiysk and Mukran.

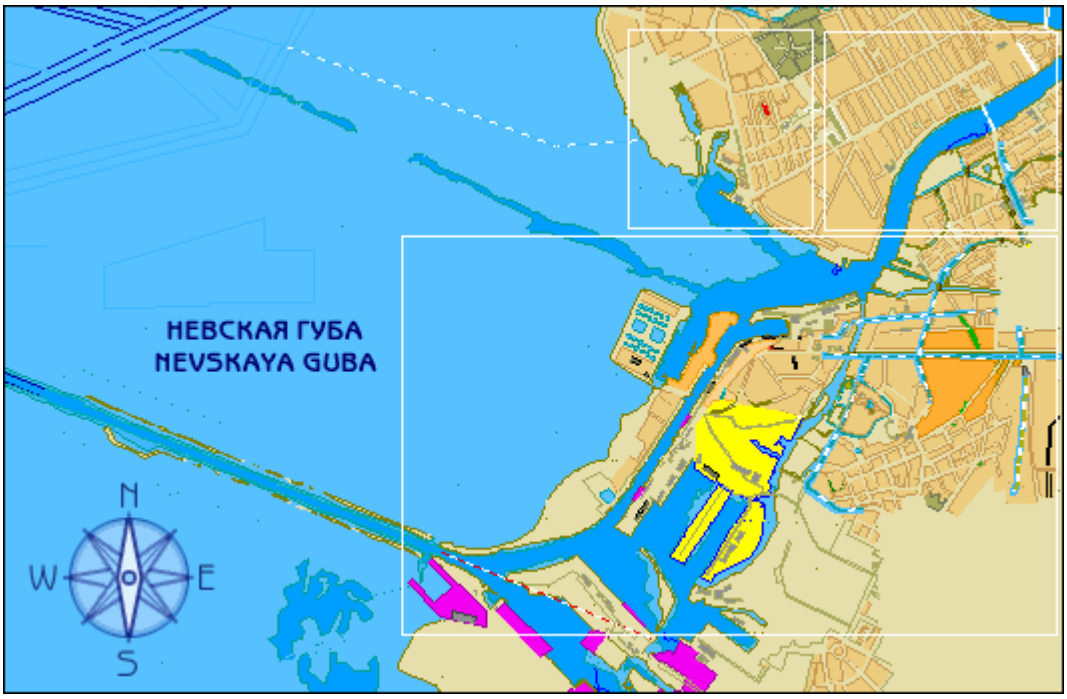


Figure I.1.1-6 Plan of St. Petersburg Port

Photo I.1.1-4 Ust Luga Coal Terminal, June 2003
(Main development area beyond)

Photo I.1.1-5 Ust Luga Coal Terminal, June 2003

1.1.6 Comparative Port Analysis

To illustrate the relative importance of Klaipeda with the other Eastern Baltic ports a number of comparative statistics for the ports of Kaliningrad, Klaipeda, Liepaja, Ventspils, Riga, Tallinn and St. Petersburg are shown in Tables I.1.1-1 and I.1.1-2 below.

Table I.1.1-1 Comparative Traffic Analysis of Eastern Baltic Ports

	Cargo Category						
PORTS	**Total Passengers** (Numbers)	**Total Freight** (Tons)	**Dry Bulk** (Tons)	**Liquid Bulk** (Tons)	**General Cargo** (Tons)	**Other Cargo** (Tons)	**Containers** (TEUs)
KALININGRAD							
1997	n/a	6,200,000	n/a	n/a	n/a	n/a	n/a
2002	0	9,855,000	3,467,000	4,874,000	1,514,000	0	21,313
Growth/Year (%)	*n/a*	*9.7%*	*n/a*	*N/a*	*N/a*	*N/a*	*'n/a*
KLAIPEDA							
1997	70,120	16,118,040	2,861,890	3,956,670	9,299,480	0	36,736
2002	107,741	19,739,700	5,705,950	7,979,170	6,056,170	0	71,589
Growth/Year (%)	*9.0%*	*4.1%*	*14.8%*	*15.1%*	*-8.2%*	*0.0%*	*14.3%*
LIEPAJA							
1997	n/a	2,295,800	214,800	360,200	1,720,800	0	3,568
2002	12,356 *	4,318,000	820,420	906,780	2,590,800	0	3,821
Growth/Year (%)	n/a	*13.5%*	*30.7%*	*20.3%*	*8.5%*	0.0%	*1.4%*
VENTSPILS							
1997	n/a	36,780,500	4,573,000	28,578,400	3,629,100	0	0
2002	8,370 *	28,704,000	6,203,000	20,021,000	2,480,000	0	0
Growth/Year (%)	n/a	*-4.8%*	*6.3%*	*-6.9%*	*-7.3%*	*0.0%*	*'n/a*
RIGA							
1997	n/a	11,213,100	2,205,900	2,215,100	6,792,100	0	132,559
2002	50,166 *	18,108,600	6,700,182	5,432,580	5,975,838	0	73,900
Growth/Year (%)	n/a	*10.1%*	*24.9%*	*19.7%*	*-2.5%*	0.0%	*-11.0%*
TALLINN							
1997	4,839,000	17,133,000	2,179,000	8,095,000	4,024,000	2,835,000	54,587
2002	5,945,000	37,855,000	5,877,000	24,301,000	2,490,000	5,187,000	87,912
Growth/Year (%)	*4.2%*	*17.2%*	*21.9%*	*24.6%*	*-9.2%*	*12.8%*	*10.0%*
ST PETERSBURG							
1998	n/a	21,450,900	5,773,100	8,873,200	6,804,600	0	202,350
2002	n/a	41,309,000	19,552,000	10,611,000	11,146,000	0	456,836
Growth/Year (%)	*n/a*	*17.8%*	*35.7%*	*4.6%*	*13.1%*	*0.0%*	*22.6%*

* 2001 Data

Sources: Baltic Ports Organisation,
Port Statistics,
Latvian National Agency,
Estimate by the JICA Study Team

A comparative traffic analysis is detailed in Table I.1.1-1 and a comparative facilities and capacity analysis in Table I.1.1-2. The former reveals the underlying traffic growth rates in passenger traffic and principal cargo categories over a five-year period (usually 1997 – 2002). The latter gives an indication of the relative resources available in the port and highlights when traffic levels are approaching capacity limits. The relative size of the land area of these ports is illustrated in Appendix A.

The following conclusions can be made for the analysis of the traffic levels:

a) Klaipeda is the second most important passenger port reflecting its frequent ferry services to Germany, Denmark and Sweden. Many of these passengers are accompanying vehicles on the ferries. With an annual compound growth of 9.0% a year there has been a significant increase in such traffic. In addition to ferries, Klaipeda has been developing its facilities to attract cruise ships to visit the port.

b) Klaipeda's passenger traffic is eclipsed by the Port of Tallinn with a large number of passengers who cross the Gulf of Finland each day between Tallinn and Helsinki. With almost 6 million passengers in 2002, Tallinn is one of the most heavily used passenger ports in the world.

c) Apart from Ventspils, all the Eastern Baltic ports have experienced a significant growth in freight traffic. This ranges from an annual increase of 4.1% at Klaipeda to a very significant annual increase of 17.8% at St. Petersburg. The annual increase at Klaipeda represents an additional 3.6 million tons from 1997 – 2002 despite losing 3.3 million tons of general cargo, principally as a result of the reduction in Russian steel traffic because of Russia's preferential railway tariff for cargoes using their own ports. The principal cause of the decline at Ventspils is the decision by Russia to cease crude oil shipments by pipeline from the port which led to a net reduction of 9.5 million tons of oil between 2001 and 2002. Were it not for this, Ventspils would also have registered a net increase in traffic over the last five years.

d) All the ports have experienced a very significant growth in dry bulk traffic, with annual growth rates ranging from 6.3% to 35.7%. Many have had growth of several million tons, with St. Petersburg by far the largest increase at 13.8 million tons. Klaipeda's growth in dry bulk cargo from 1997 – 2002 was 2.8 million tons.

e) Liquid bulk cargoes principally relate to oil products whether crude oil or refined products. Other than Ventspils, all the ports have experienced a significant growth in liquid bulk, principally due to the increase in exports of oil from Russia. Until recently Ventspils was the largest exporter of Russian oil in the Baltic. Shipments of oil products from Ventspils amounted to over 29 million tons in 2001 but these have suffered in 2002 – 2003 by Russia's decision to cease crude oil shipments by pipeline. This is a complicated issue which is discussed later in section 1.4.3 about Russian oil. The largest absolute increase was at Tallinn with oil products growing by 16.2 million tons from 1997 – 2002 and now has taken over as the largest exporter of Russian oil in the Baltic. The doubling of oil products from 4 million to 8 million during this period was also significant as this was exclusively of refined products rather than crude oil. Complementing these results is the development of the new Russian port of Primorsk north west of St. Petersburg over the last few years specifically for the export of Russian oil which reached 12.3 million tons in 2002.

f) Unlike the almost universal increase in bulk cargoes the trend in general cargoes is variable. Several of the ports have experienced a decline in traffic. One of the reasons for this will be the trend to containerise general cargoes. St. Petersburg and Liepaja stand out as they experienced significant increases. With the continuous growth in the Russian economy in the last five years and the policy to concentrate traffic on Russian ports, St. Petersburg has seen its traffic almost double during this period, with rapid growth in all the major cargo categories. Liepaja's growth in general cargo most likely reflects its transformation into a

commercial port from its previous role as a military base, and the shipments of metal products from Liepajas Metalurgs located in the town.

g) Tallinn's 'other' cargo is almost exclusively Ro/Ro ferry traffic which has experienced a significant annual increase (of 12.8%) from 1997 – 2002. This now amounts to over 5 million tons a year. For the other ports Ro/Ro ferry traffic is usually categorised as 'general' cargo.

h) Most ports have experienced an increase in container usage over the last five years although the extent has been variable. The exception is Riga which suffered a significant decline (about 40%) as a result of the diversion of Russian container traffic away to St. Petersburg. St. Petersburg is already the largest container port on the Eastern Baltic and has seen its traffic more than double (to 457,000 TEUs) in the last five years. Klaipeda has also seen its traffic almost double in five years and now rivals Riga as the third largest container port. Container growth at Klaipeda is accelerating and in the first three months of 2003 was 82% higher compared with the same period in 2002. The second largest container port is Tallinn which experienced a 60% increase in traffic in five years. Container traffic in the Baltic would appear therefore to mirror the significant worldwide growth in containerised cargo. As containerisation of cargoes in the CIS countries is still relatively new this growth is likely to continue in both the short and longer term.

Table I.1.1-2 Comparative Facilities and Capacities of Eastern Baltic Ports

	Facilities					Capacities		
PORTS/ YEAR	Max. Depth (Metres)	Berths (Number)	Quay Length (Metres)	Ro/Ro Berths (Number)	Liquid Berths (Number)	Port (Mill Tons)	Containers (TEUs)	Lifting (Tons)
KALININGRAD								
2002	8.2	50	6,130	3	3	15.0	30,000	40
KLAIPEDA								
2002	14.0	152	19,216	7	8	30.0	200,000	64
LIEPAJA								
2002	9.5	80	7,000	2	9	7.5	7,000	40
VENTSPILS								
2001	17.0	60	11,012	3	9	80.2	150,000	100
RIGA								
2002	12.2	114	13,818	5	6	20.0	300,000	40
TALLINN								
2002	17.4	59	10,175	12	8	47.0	150,000	60
ST PETERSBURG								
2002	11.5	78	11,640	10	1	50.0	550,000	300

Source: Baltic Ports Organisation.
Port Statistics

From Table I.1.1-2 the following conclusions can be made:

a) Ventspils and Tallinn have the deepest water depth of the Eastern Baltic ports at 17.0 - 17.4 metres, which is the maximum depth (17.0 metres) entering the Baltic through the Straights of Denmark. Klaipeda is the next deepest at 14.0 metres.

b) Klaipeda has the largest number of berths (152) and the longest quay length (19.2 kms) of the Eastern Baltic ports. The next largest is Riga with 114 berths and 13.8 kms of quays.

c) Ventspils has the largest capacity (80.2 million tons) of the seven ports, reflecting its status as a bulk cargo port, principally for oil products and for fertilisers. The next largest (50.0 million tons) is St. Petersburg which has been developed and expanded to accommodated the rapid growth in Russian traffic over the last five years. It also caters for bulk cargoes of oil products, fertilisers, metals and coal but some of these e.g. coal are slowly being moved to the new Russian port at Ust Luga to allow the space within St. Petersburg to be reallocated for higher value cargoes such as containers. At 30.0 million tons, Klaipeda has the fourth largest port capacity in the Eastern Baltic.

d) Comparison of the port capacity with the total traffic levels (Table I.1.1-1) indicates that many are operating at more the 70% of capacity, in particular Riga (at 91%), St. Petersburg (83%), and Tallinn (at 81%). Klaipeda (at 66%) is not far behind. Whilst it is recognised that there are many contributory factors which affect the efficiency of port operations, these utilisation rates indicate that several of the Eastern Baltic ports will need to expand to cater for long term traffic growth. Indeed, visits to the ports during the course of the Study confirmed that many of them have expansion plans.

e) Comparison of the port container capacity with the traffic levels indicates that there is a wide variation in the use of the container facilities. The highest utilisation rate (83%) is at St. Petersburg, suggests a degree of congestion there with a very rapid expansion in usage over the last five years. Klaipeda's usage is 36% reflecting the relative age of the facility and it has also experienced rapid growth over the last five years. Ventspils would appear to be an example of premature development as it has only handled a few hundred containers since it opened in 2001 even though built with a capacity of 150,000 TEUs per year. It is also close to the port of Riga which already has very good container facilities.

1.1.7 Sea Transport Network

Our understanding of the sea transport network in the Baltic can be summarised in the following pattern:

a) Bulk oil tankers for crude oil and oil products. Many of the ports on the Eastern Baltic export oil, principally to Western Europe, North America, and Scandinavia. The water depth restrictions through the Straights of Denmark, (17.0 metres) however, prevent the very largest tankers operating on the Baltic.

b) Dry bulk ships for the transport of various cargoes such as logs/wood products, fertilisers, grains, steel, cement and minerals to/from both European and worldwide countries.

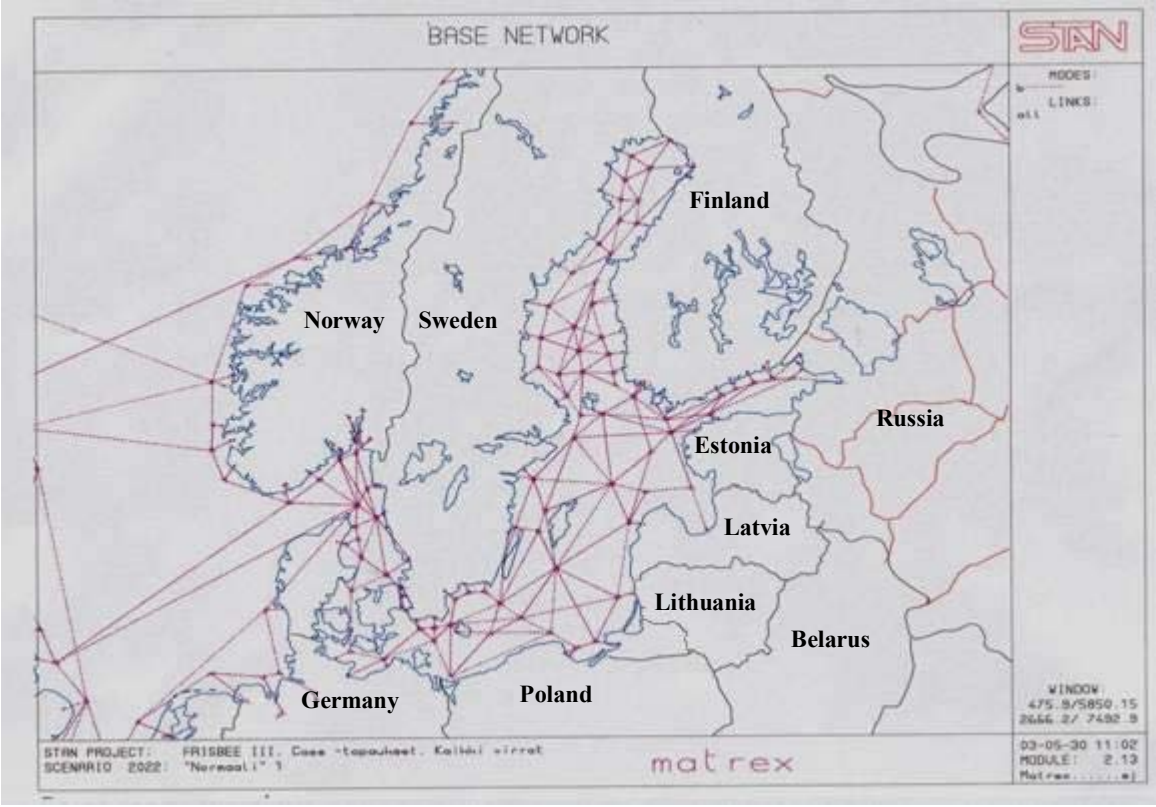
c) Container feeder ships between many of the Baltic ports and principal Western European ports such as Hamburg, Bremerhaven, and Rotterdam. Larger Baltic ports such as St. Petersburg are also developing direct container services as well as being served by feeder ships.

d) Refrigerated ships carrying fish products, meat and agricultural goods.

e) Minibulkers and general cargo ships transporting various cargoes within the Baltic area.

f) Frequent Ro/Ro ferry services between various countries carrying articulated trucks (on the shortest routes), unaccompanied trailers, and some containers and swap bodies/demountable tanks.

The pattern of main shipping services is illustrated in Figure I.1.1-7 below. This shows that there is a dense pattern of short sea routes across the Baltic to/from Scandinavia and a north/south pattern along the Baltic between northern Europe, the Baltic States, northern Finland/Sweden and North West Russia. The pattern of current ferry services are shown in Table I.1.1-3 overleaf.



Source: Matrix Oy, Finland

Figure I.1.1-7 Illustration of Ship Patterns in the Baltic Sea

Table I.1.1-3 Current Ferry Services to/from Baltic States

Routes	Weekly Frequency (Each Way)	Journey Times (Hours)	Ships in Service
Lithuania – Germany			
Klaipeda – Kiel	6	21	2
Klaipeda – Mukran	3	18	1
Lithuania - Sweden			
Klaipeda – Karlshamn	6	15	2
Lithuania - Denmark			
Klaipeda – Aabenraa - Aarhaus	2 1	Approx. 31	1
Klaipeda - Copenhagen	1	25	1
Klaipdea - Fredericia	2	N/A	1
Latvia – Germany			
Riga – Lubeck	4	35	2
Riga – Kiel	1	44	1
Liepaja – Rostock	2	26	1
Latvia – Sweden			
Riga – Stockholm	3	18	1
Liepaja - Karlshamn	3	15	1
Ventspils – Vestervik	3	12 - 13	1
Estonia – Germany			
Tallinn – Rostock *	3	22	1
Estonia – Finland			
Tallinn – Helsinki (fast)	208	1.5 – 3.75	12
Russia – Russia			
Kaliningrad/Baltijsk – St. Petersburg	1	37	1

* Summer service Helsinki/Tallinn - Rostock
Source: Ferry Schedules

This reveals there are frequent short sea shipping services between the Baltic States and Central EU countries (Germany & Denmark) and across the Baltic to Sweden. Ferry services have been growing steadily over the last 10 years and this trend can be expected to continue with the accession of the Baltic States to the EU. Indeed the poor road conditions in Poland may lead to a significant increase in such services to meet the need of the road haulage industry. The densest route is between Helsinki & Tallinn across the Gulf of Finland. The worldwide trend is for ferries to get larger and faster.

1.1.8 Ship Movements in the Baltic Sea

The most comprehensive research of shipping patterns and volumes within the Baltic Sea is detailed in a report produced by VTT Technical Research Centre of Finland for the Finnish Ministry of Traffic and Communications in September 2002. Whilst the report was principally commissioned to consider the environmental implications of increased oil tanker traffic in the Gulf of Finland and the Baltic it also provided a useful review of shipping movements.

For the purposes of this Progress Report only one of the many diagrams from the VTT report have been reproduced below to illustrate the current (2000) ship movements in the Baltic Sea. Table I.1.1-4 overleaf details the annual ship movements at the six locations marked.

Source: VTT Technical Research Centre of Finland

Figure I.1.1-8 Current Ship Movements in the Baltic Sea

Table I.1.1-4 Current Ship Movements at Baltic Sea Locations

Location	Year 2000
1	23388
2	34692
3	46476
4	58500
5	75696
6	85296

Source: VTT Technical Research Centre of Finland

As the VTT research excluded passenger traffic the analysis of current (2003) ferry timetables to/from the Baltic States was undertaken and was summarised in Table I.1.1-3 above.

1.2 Inland Transport Network

1.2.1 Transport Routes in Lithuania

The principal road and railway routes used in Lithuanian are illustrated in Figures I.1.2-1 – I.1.2-3 below. The first sets the transport network geographically in the context of the surrounding countries. The second and third show the individual road and rail networks within Lithuania.

Historically the principal road and railway routes have been east-west transit corridors from Russia and Belarus through Vilnius to the Baltic coast at Klaipeda and at Kaliningrad. With the prospective membership of the Baltic States to the European Union north-south routes are now becoming more important. Major improvements to the main north-south road route are underway and plans are being considered for a new north-south railway line.

Figure I.1.2-1 Principal Road and Railway Routes in Lithuania

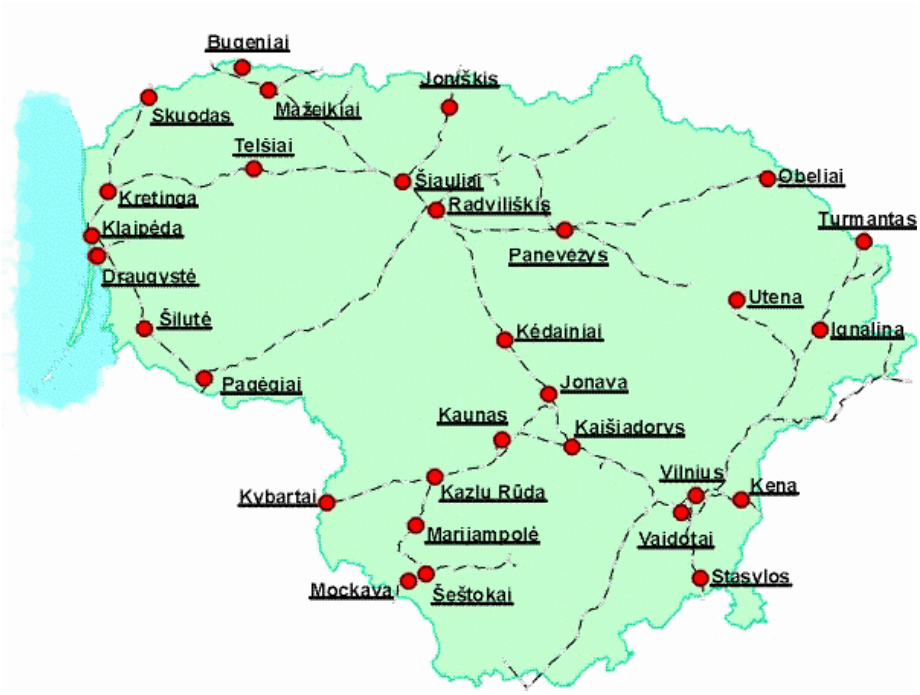


Figure I.1.2-2 Lithuanian Railway Routes

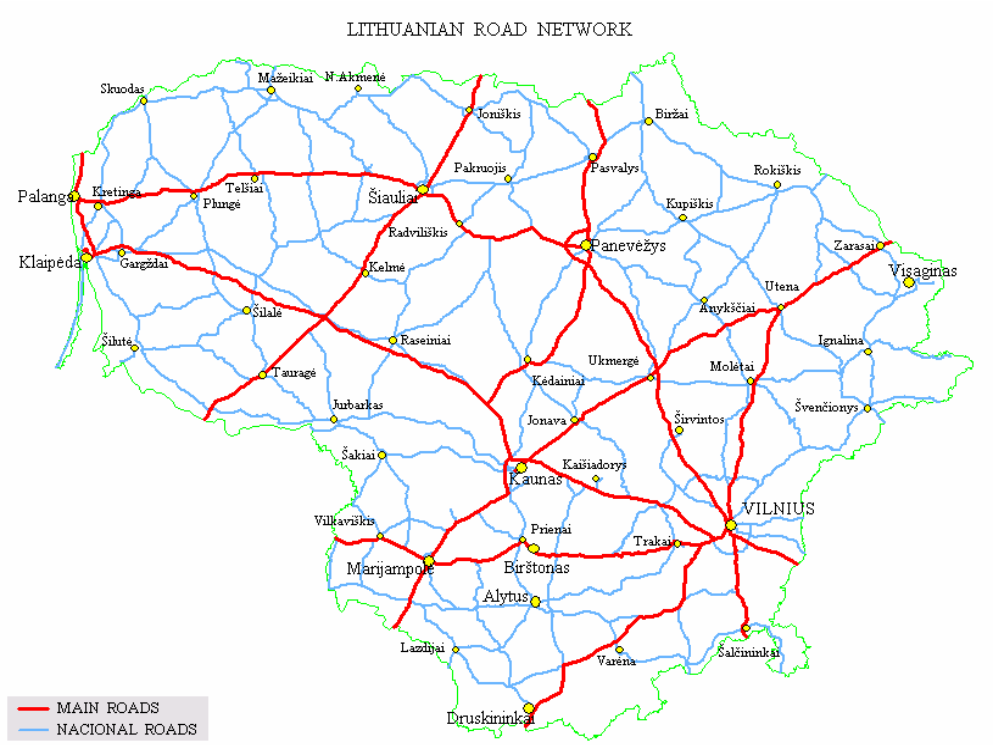


Figure I.1.2-3 Lithuanian Road Network

In addition to the road and railway network there is an important crude oil pipeline which runs across the northern part of Lithuania from Polotsk in Belarus to the Mazeikiai oil refinery in Lithuania and then to the Butinge oil terminal (north of Palanga), close to the Latvian border. A branch off this pipeline also supplies the port at Ventspils with crude oil although supplies of crude oil to the port have recently been curtailed. Whilst a separate refined oil products pipeline also serves Ventspils no such pipeline exists in Lithuania. Refined oil products for export are carried by rail tankers from the Mazeikiai oil terminal to Klaipeda Port. Refined oil products from Belarus are also transited by rail through Lithuania for export from Klaipeda Port.

Several of Lithuania's road and railway routes have been incorporated into the European Union's Trans European Network (TEN). The aim of the network is to identify the strategic transport corridors for passenger and freight traffic in the Central and Eastern European countries planning to join the EU and their immediate hinterland. These were originally defined at a conference in Crete in 1994 and reconfirmed and refined at another conference in Helsinki in 1997. The routes which affect Lithuania are:-

a) Corridor I 'Via Baltica' North/South road corridor from Warsaw (Poland) - Marijampole – Kaunas – Panevezys – Riga (Lativa) and Tallinn (Estonia). A separate branch of it (Corridor IA) runs from Gdansk (Poland) – Kaliningrad (Russia) – Taurage – Siauliai – Joniskis – Riga (Latvia).

b) Corridor IX is a complex network of predominantly North/South routes running from Kaliningrad/Klaipeda and also from Helsinki/St. Petersburg through to Kiev (Ukraine) to the Black Sea at Odessa and to the Mediterranean Sea at Alexandroupoli. Branches which run through Lithuania are: -

   - Corridor IXB and incorporates the main road from Klaipeda – Kanaus – Minsk (Belarus) and the main railway route from Klaipeda – Siaulai – Vilnius – Minsk (Belarus)
   - Corridor IXD which incorporates both the main road and main railway route through Kanaus – Vlikaviskis/Kybartai – Kaliningrad (Russia).

Some EU funding has been available to make improvements to the road and railway routes along these two corridors.

1.2.2 Transport Usage in Lithuania

The relative importance of each of the three transport modes (rail, road, and pipeline) is illustrated in the Table I.1.2-1 below.

Table I.1.2-1 Lithuanian Surface Transport Networks and Usage

	1995	1998	2001
Surfaced Road Kms	54,153	66,045	69,932
Rail Route Kms	2,002	1,997	1,696
Pipeline Length Kms	400	399	500
Rail Passenger Kms (Mill.)	1130	800	533
Average Rail Trip Length (Km)	74	66	69
Bus Passenger Kms (Mill.)	4169	2964	2119
Average Bus Trip Length (Km)	8	8	9
Passenger Cars (Mill.)	0.718	0.981	1.133
Rail Tonne Kms (Mill.)	7,220	8,265	7,741
Rail International Proportion	88.5%	83.4%	80.4%
Road Tonne Kms (Mill.)	5,160	5,611	8,274
Road International Proportion	47.4%	69.0%	81.7%
Pipeline Tonne Kms (Mill.)	2,006	2,964	4,780
Pipeline International Proportion	100%	100%	100%

Source: Statistical Yearbook of Lithuania 2002

The conclusions which can be made from these figures are:

a) There has been a steady increase in the surfaced road network in Lithuania, by almost 30% from 1995 to 2001. Of this, the premium network of motorways and European ('E') principal roads is comparatively small (1900 kms) but it is strategically very important to both the Lithuanian traffic and transit traffic.

b) There has been a decrease of 15% in the railway route network with the closure of some lines not served with the changing pattern of traffic.

c) The extension of the oil pipeline from the Mazeikiai refinery to the Butinge oil terminal is reflected in an additional 100 kms in the route.

d) There has been a significant decline in both road and rail passenger public transport usage, with both halving between 1995 and 2001. As the average distance travelled by rail (about 70 kms) and bus (about 8 kms) has remained mainly unchanged this implies an absolute decrease in public transport usage. Offsetting this, however, is a 55% increase in car ownership. Although car usage is not known it is anticipated that passenger kms by car will have far more than offset the decline in public transport passenger kms.

e) There has been a very significant (45%) increase in total freight transport between 1995 and 2001 amounting to 6.4 billion tonne kms. This is particularly the case for road which increased by more than 3.1 billion tonne kms and for pipeline which increased by 2.8 billion. The latter was particularly affected by the extension of the pipeline to Butinge.

f) All three modes are extremely important in the transport of freight. In terms of tonne kms rail has a market share of 37%, road 40% and pipeline 23%. Road and pipeline usage has steadily increased but this does not appear to have been at the expense of rail-freight which increased to almost 9.0 billion tonne kms in 2000 before falling back to 7.7 billion in 2001.

g) International traffic is an extremely important part of the economy, amounting to 85% of total tonne kms. It grew by 6.9 billion tonne kms (64%) from 1995 to 2001. It makes up 80% of rail tonne kms, 82% of road tonne kms, and 100% of pipeline tonne kms. The trend in these percentages over the period 1995 – 2001 reveals only a small decline for rail-freight (as domestic traffic grew) but a very significant increase for road-freight from 47% in 1995 to 82% in 2001. As domestic road freight tonne kms declined by 1.2 billion (44%) from 1995 to 2001 the road haulage industry would appear to be exploiting the opportunities in the growing international traffic.

1.2.3 Transport Network in Central and Eastern European Countries

(1) Importance of Transport Links to Ports

Discussions with the terminal operators at Klaipeda Port have confirmed that almost all bulk cargoes, particularly from neighbouring countries, are hauled by rail and most intermodal/container cargoes are by road. Good rail and road access is therefore important to the successful development of the port. This will involve the immediate operations and network in/around the port area as well as the principal rail and road routes to/from the port and proposals to improve the access have been identified at several of the Baltic ports.

These conclusions equally apply to all the ports along on the Eastern Baltic and good rail and road links have been provided during the Soviet era. In the case of Ventspils this is supplemented by pipelines for both crude oil and refined products. As mentioned above, crude oil shipments to Ventspils via the pipeline have been temporarily suspended and efforts are being made to transport crude oil from Russia to the port by rail but this will be significantly more expensive and have a lower capacity.

The existing transport infrastructure is principally a legacy from the Soviet era as the whole area of the Baltic States, much of Eastern Europe and Russia were under the jurisdiction of the Soviet government centred on Moscow. The Soviet economic model relied upon the concentration of means of production on a limited number of locations and on transport links to move goods from areas of production to areas of consumption. The transport infrastructure has been improved and adapted since the demise of the Former Soviet Union (FSU).

With the traffic volumes and geographical distances reliance was placed on the railways, supplemented by waterways and road transport for shorter distance movements. The break-up of the Soviet system in the late 1980s and early 1990s radically changed the nature of the transport flows and economic system. Railway routes frequently witnessed reductions in traffic levels by half or by two thirds leading to generous levels of spare capacity. Railway operations, however, frequently lagged behind the changes in the economic system and are still often based on wagonload shipments between a network of marshalling yards. Train lengths of 50+ wagons and 4000 – 5000 tons in weight are commonplace. Shorter block trains, particularly for intermodal and container traffic, are gradually emerging e.g. the ‘Viking’ Klaipeda – Odessa train.

Whilst route capacity is generally more than sufficient to meet future needs some of the Soviet era railway equipment is now in need of replacement. Lithuanian Railways is receiving funding from the European Union via the ISPA programme (Instrument

for Structural Policies for Pre-accession) to renew some of the route infrastructure along the main Corridor IX routes, including telecommunications equipment, electrical power supplies, and bridge reconstruction. Considerable work has already been done to renew the railway track. The intention is to raise maximum speeds of freight trains from 80 kph to 100 kph and maximum wagon axle-load weight from 22.5 to 25 tons. Passenger trains already achieve 120 kph maximum speed. Lithuanian Railways also has plans to renew some of its locomotives and wagons.

Lithuania has been blessed with one of the best motorway routes (from Klaipeda – Vilnius) built during the Soviet era. Klaipeda was a significant military transit route between Russia and the military forces stationed in East Germany. It provides Klaipeda with a significant competitive advantage compared with other Eastern Baltic ports. The quality of this route has been preserved through adequate maintenance and EU ISPA funds have also recently been available to undertake some maintenance work on it, along with the construction of some grade separated junctions. Traffic levels along this road are still relatively light compared with the capacity available although there will be some limited congestion at morning/evening peak periods on the heaviest part of the route between Vilnius and Kaunas.

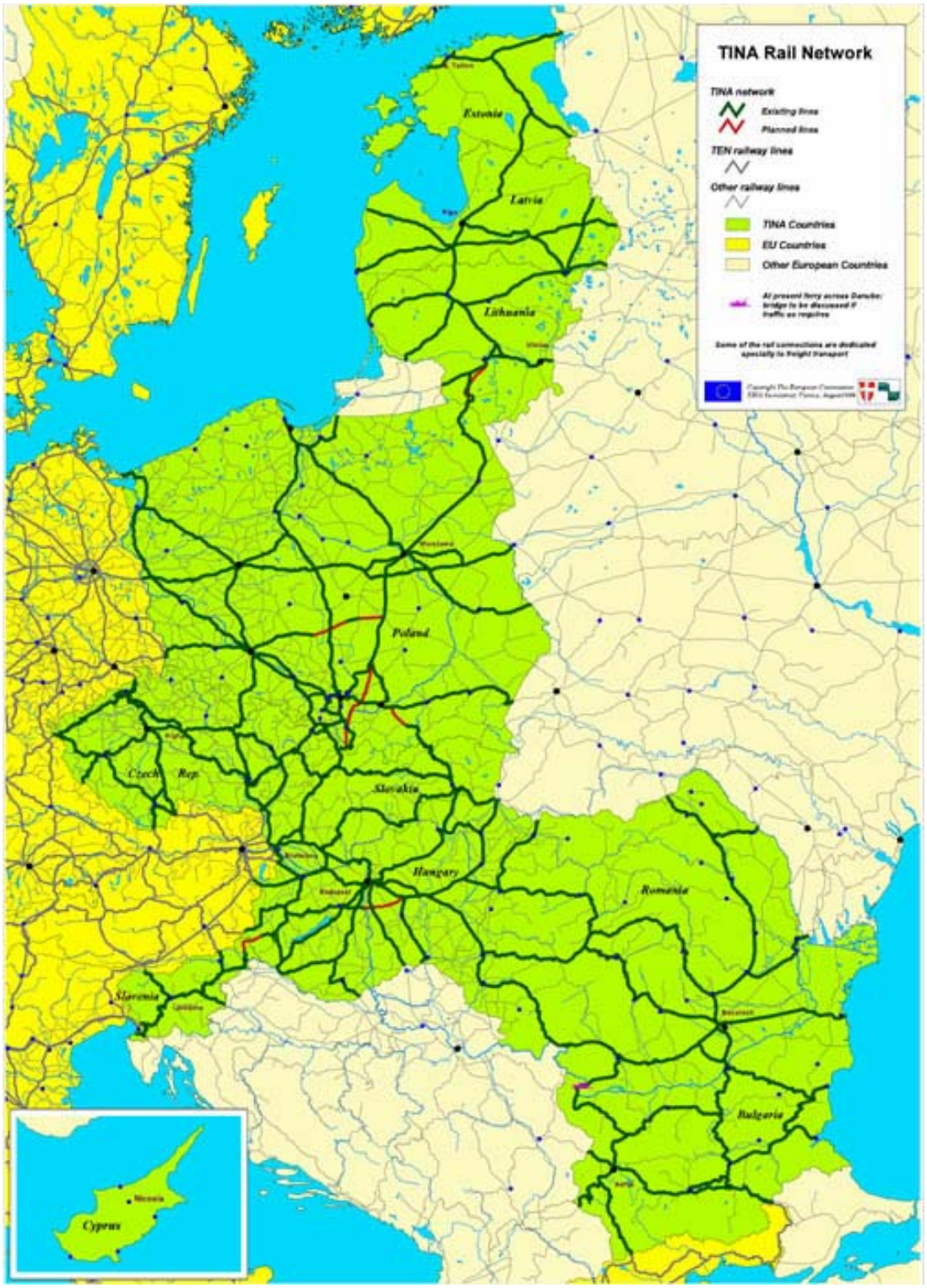
(2) Future Transport Developments

The principal transport development throughout the Baltic States over the last few years has been the construction of the Via Baltica road link linking all three Baltic States (Tallinn, Riga, Kaunus) with Finland (Helsinki) and with Poland (Warsaw). This north/south route complements the east/west transit routes constructed during the Soviet era to link the Baltic ports with Russia. East/west traffic in Lithuania is currently 8-10 times that of north/south traffic but this may change significantly with the accession of the Baltic States and Poland into the European Union in the next few years.

The plans for future transport developments in the Central and Eastern European countries planning to join the European Union were incorporated in the EU TINA (Transport Infrastructure Needs Assessment) organisation. This was established from 1996 - 1999 to identify the network components for a future Trans-European Network in 12 Central and Eastern European countries, with the proposal to implement the total network by 2015. The conclusions of this group are summarised in two network maps showing road and rail developments and are illustrated in Figures I.1.2-4 and I.1.2-5 below. New routes are marked in red. Table I.1.2-2 summarises the costs of the proposed transport improvements in the Baltic States and Poland.

Source: TINA

Figure I.1.2-4 TINA Road Network



Source: TINA

Figure I.1.2-5 TINA Rail Network

Table I.1.2-2 Transport Investment Proposed in TINA Study

(Units : Billions of Euros)

Countries/Mode	Rail	**Road**	Other	**Total**
Poland	14.61	17.55	4.26	36.42
Lithuania	1.32	0.52	0.48	2.32
Latvia	0.94	0.38	0.67	1.99
Estonia	0.26	0.29	0.08	0.63

Source: TINA

The major proposals within the Baltic States were:-

- The 'Via Baltica' road link mentioned above including upgrading sections of the existing road and the construction of bypasses.
- The construction of a new standard gauge railway link from the existing Polish/Lithuanian border station at Mockava to a proposed new freight distribution centre at Kaunas.
- Construction of a new road link in Latvia from the Riga ring road to Jekabpils to bypass the existing winding route along the Daugava River.
- Improvements to the existing main road/rail routes.

The TINA study incorporated many of the proposed National transport improvements of the Baltic States and has become part of their transport plans. Funding through the EU ISPA programme is already being invested in these infrastructure improvements and this is expected to increase on accession of the countries into the EU when additional funds will become available. Lithuania, Lativa, and Estonia have already held referendums which provided the mandate for joining the EU and this is due to occur in May 2003.

Of all the 12 countries included in the TINA study Poland was identified as the country requiring the largest improvement to their transport network, with 40% of total transport costs identified in the study. Poland has also recently voted in a referendum to become a member of the EU and will become a major transit route between central European countries and the Baltic States and the CIS. It already performs this role but transit cargo is expected to increase as trade flows always readjust when states join the EU.

Research has indicated that Polish roads are in a poor condition and this discourages transit traffic. Poland also has introduced a permit system for road transit traffic to regulate the volume. In addition the Polish railway system has the same gauge (1435 mm) as most of the rest of Europe. This is different from the gauge (1520 mm) used by CIS countries and the Baltic States. Until recently this required either cargo to be trans-shipped or for wagon wheel-sets to be changed at border stations. More recently an automatic mechanism within the wheel-sets has been available which adjusts between the two gauges. Each of these three systems, however, adds to the cost of crossing the border to/from Poland although the latter speeds up the process considerably and is already being used on an overnight train between Poland and Lithuania.

The net conclusion is that if Polish roads are deemed to be "poor" and rail transit deemed to be "expensive" and possibly "delayed" at the border this might increase the level of short sea shipping traffic between the Baltic States and central EU countries to get around the bottleneck. The transport infrastructure in Poland is being improved but the magnitude of the improvements identified in the TINA report indicate it will take many years before they will be completed. The timeframe of the TINA study was up to 2015.

1.2.4 Transport Network in CIS Countries

The principal transport network from the Baltic States into the CIS countries is illustrated in Figures I.1.2-6 and I.1.2-7. These have been drawn from two separate EU TACIS studies. Figure I.1.2-6 was taken from the 1999–2001 study Improvement of Traffic Flows on Corridor II & IX. Whilst the map details the individual railway projects considered in that study the alignment of road and rail along both corridors is similar. Efforts are being made using both national and some EU funds to maintain and improve the railway and road routes along these corridors. Figure I.1.2-7 was taken from the current EU TRACECA (Transport Corridor Europe Caucasus Asia) project. This is identifying many transport improvements from the Black Sea area to Central Asia to develop effective road and rail corridor routes underneath Russia. This map also shows the principal transport routes south and west of Moscow which are not revealed in Figure I.1.2-6.

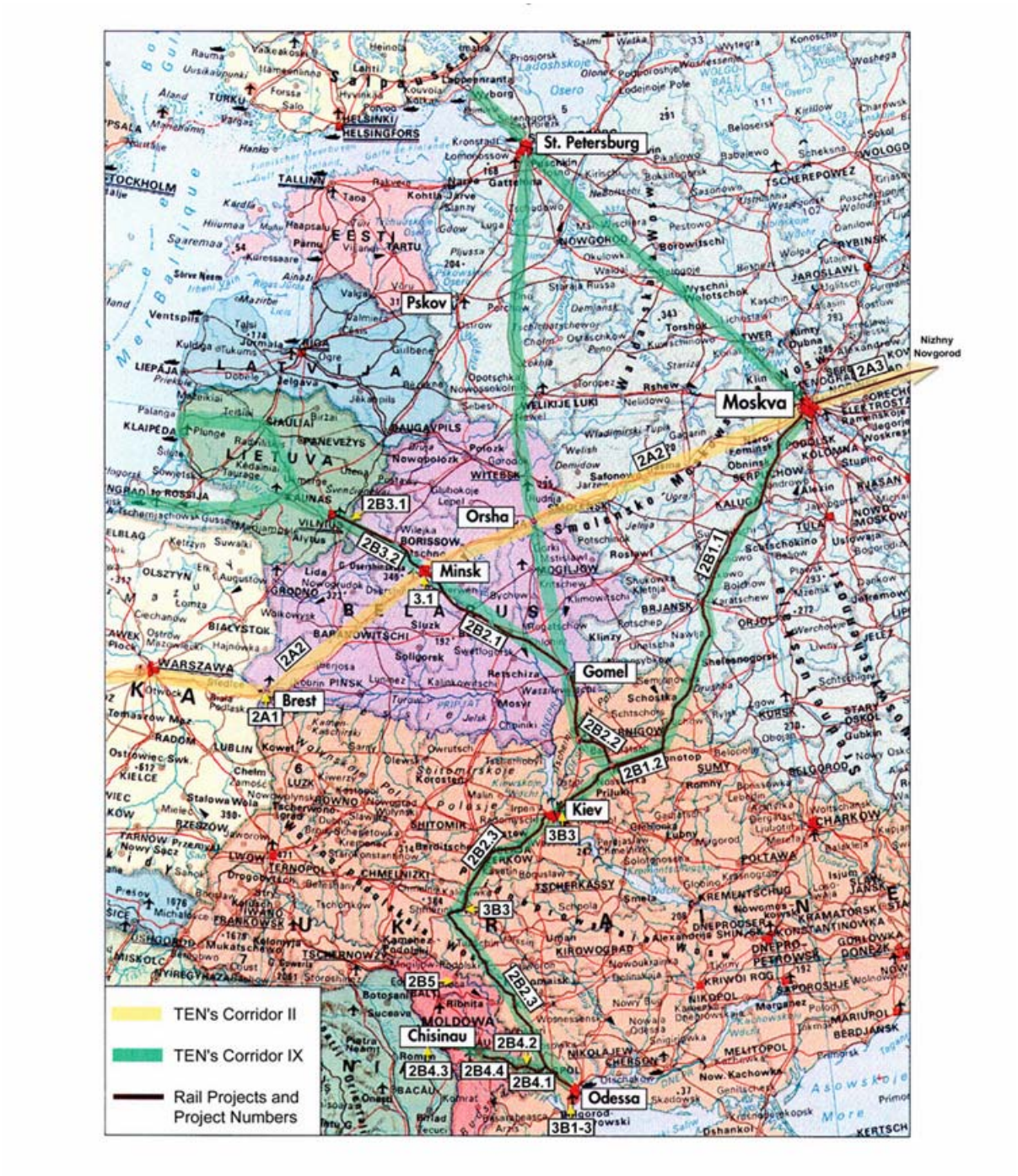


Figure I.1.2-6 Improvement of Traffic Flows on TENs Corridors II and IX Rail Projects

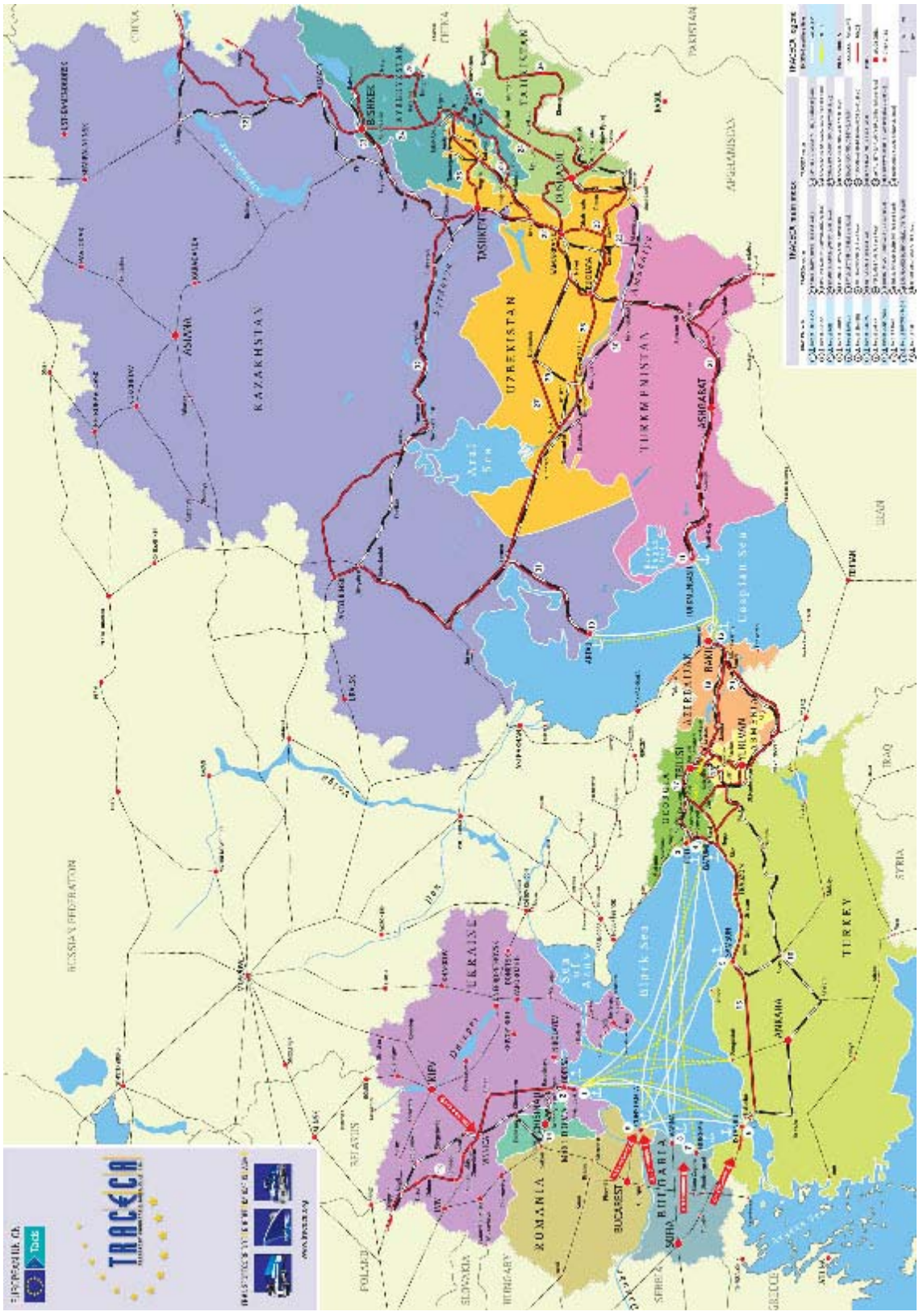


Figure I.1.2-7 EU TRACECA Network

1.3 Tariff System

1.3.1 Railway Tariff

(1) Tariff Level in Lithuanian Railways

The freight tariff of the Lithuanian Railways (LG) is reviewed every year by the Board of Directors which is composed of representative members from the Lithuanian Railways Company (LGC) and the Ministry of Transport. If the reasons for the tariff rise can be justified due to the likes of cost hikes in labour and fuel, the Board of Directors has the right to decide on a tariff increase. Once the decision for a tariff raise has been made, the proposal for the tariff rise is submitted to the General Director of the LGC and he finally approves it. This set tariff is the basic and maximum tariff. The actual tariff level is generally less than the basic tariff, reflecting the market situation. If the LGC agrees with a tariff decrease, the discount rate could be applied by route and by commodity. This discount rate is termed a "coefficient" which is a factor by which the basic tariff is to be multiplied.

(2) Tariff Structure in the Lithuanian Railway

The freight tariff of the Lithuanian Railways is categorized into three regulations:

1) Domestic tariff regulation is applied to intra regional and export and import freight transportation.

Transit tariff is based on the so-called MTT[1] tariff level, which has been revised in the OCJD (Organization of Cooperation of Railways) forums. The OCJD is an organization similar to the UIC (International Union of Railways), but regrouped into railway systems from the former eastern block. The tariff levels appear to be based on long-discredited costing methodologies dating back to the central planning era. The MTT tariff level allows heavy discounts, which eventually compensate for the lack of rational costing systems and create some commercial flexibility. In general, high transit tariffs appear to cross-subsidize domestic traffic. The former TRACECA project attempted to set up a new tariff system, but in reality the MTT tariff level has been too deeply implanted.

2) Additional services tariff regulates the freight in Klaipeda Port and border stations.

Table I.1.3-1 shows some examples of commodity-based transit tariff between the eastern Baltic Sea ports and hinterland. Table I.1.3-2 shows the comparison of tariff structure by railway and by tariff for the routes to ports. Table I.1.3-3 and I.1.3-4 show the coefficients by commodity to be applied to domestic and transit cargoes.

[1] International Transit Tariff to regulate the railway freight tariff for 15 member countries including the Baltic States, Eastern Europe and CIS.

Table I.1.3-1 International Transit Tariff between Eastern Baltic Seaboard Ports and Hinterland by Major Commodity

Commodity	Ports	RDZ	BC	LG	LDZ	EVR	Total	RDZ	BC	LG	LDZ	EVR	Total	RDZ	BC	LG	LDZ	EVR	Total
		From Novyy Lipetsk St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Steel Products	Tallin	1331				277	1608	42.54				3.37	45.91	3.20				1.22	2.86
	Riga	1210			288		1498	41.33			2.20		43.53	3.42			0.76		2.91
	Ventspilis	1210			459		1669	41.33			3.52		44.85	3.42			0.77		2.69
	Klaipeda	**654**	**503**	**419**			**1576**	**27.66**	**4.20**	**4.54**			**36.40**	**4.23**	**0.83**	**1.08**			**2.31**
	Kaliningrad	913	418	232			1563	8.99	3.40	6.00			18.39	0.98	0.81	2.59			1.18
	S.Peterburgas	1247					1247	14.47					14.47	1.16					1.16
		From Yanichkin St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Fuel Oil	Tallin	793				277	1070	30.32				4.56	34.88	3.82				1.65	3.26
	Ventspilis	703			459		1162	27.75			4.18		31.93	3.95			0.91		2.75
	Klaipeda	**560**	**418**	**419**			**1397**	**22.52**	**4.00**	**5.62**			**32.14**	**4.02**	**0.96**	**1.34**			**2.30**
	Kaliningrad	711	418	232			1361	6.06	4.00	6.00			16.06	0.85	0.96	2.59			1.18
	S.Peterburgas	709					709	9.37					9.37	1.32					1.32
		From Sevemaya St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Fertilizer	Tallin	1019				277	1296	17.51				3.37	20.88	1.72				1.22	1.61
	Ventspilis	697	247		473		1417	13.13	1.80		4.68		19.61	1.88			0.99		1.38
	Klaipeda	**689**	**418**	**419**			**1526**	**13.13**	**3.20**	**5.20**			**21.53**	**1.91**	**0.77**	**1.24**			**1.41**
	Kaliningrad	840	418	232			1490	3.39	3.20	5.40			11.99	0.40	0.77	2.33			0.80
	S.Peterburgas	935					935	6.32					6.32	0.68					0.68
		From Moscow St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Grain	Tallin	764				277	1041	14.52				5.66	20.18	1.90				2.04	1.94
	Ventspilis	685			459		1144	13.44			5.00		18.44	1.96			1.09		1.61
	Klaipeda	**542**	**418**	**419**			**1379**	**11.24**	**3.80**	**4.38**			**19.42**	**2.07**	**0.91**	**1.05**			**1.41**
	Kaliningrad	693	418	232			1343	3.07	3.80	6.00			12.87	0.44	0.91	2.59			0.96
	S.Peterburgas	680					680	5.10					5.10	0.75					0.75
		From Moscow St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Perishable	Tallin	764				277	1041	75.34				10.11	85.45	9.86				3.65	8.21
	Riga	685			288		973	68.96			10.80		79.76	10.07			3.75		8.20
	Ventspilis	685			459		1144	68.96			16.20		85.16	10.07			3.53		7.44
	Klaipeda	**542**	**418**	**419**			**1379**	**55.96**	**12.20**	**13.57**			**81.73**	**10.32**	**2.92**	**3.24**			**5.93**
	Kaliningrad	693	418	232			1343	15.49	12.20	10.52			38.21	2.24	2.92	4.53			2.85
	S.Peterburgas	680					680	23.42					23.42	3.44					3.44

Source: Marketing Division of Lithuanian Railways (Joint Stock Company)
Note: Abbreviations of railways are as follows.

Table I.1.3-2 Structure of International Transit Tariff between Eastern Baltic Seaboard Ports and Hinterland by Major Commodity

Commodity	Ports	RDZ	BC	LG	LDZ	EVR	Total	RDZ	BC	LG	LDZ	EVR	Total	RDZ	BC	LG	LDZ	EVR	Total
		From Novyy Lipetsk St. (Russia)																	
		Distance Structure (%)						Tariff Structure (%)						Comparison by Route for Tariffs, $/ 100 tkm(Railway Route to Klaipeda Port=100)					
Steel Products	Tallin	83				17	100	93				7	100	76					124
	Riga	81			19		100	95			5		100	81					126
	Ventspilis	72			28		100	92			8		100	81					116
	Klaipeda	**41**	**32**	**27**			**100**	**76**	**12**	**12**			**100**	**100**	**100**	**100**			**100**
	Kaliningrad	58	27	15			100	49	18	33			100	23	97	239			51
	S. Peterburgas	100					100	100					100	27					50
		From Anichkin St. (Russia)																	
		Distance Structure (%)						Tariff Structure (%)						Comparison by Route for Tariffs, $/ 100 tkm(Railway Route to Klaipeda Port=100)					
Fuel Oil	Tallin	74				26	100	87				13	100	95					142
	Ventspilis	60			40		100	87			13		100	98					119
	Klaipeda	**40**	**30**	**30**			**100**	**70**	**12**	**17**			**100**	**100**	**100**	**100**			**100**
	Kaliningrad	52	31	17			100	38	25	37			100	21	100	193			51
	S. Peterburgas	100					100	100					100	33					57
		From Severnaya St.(Russia)																	
		Distance, km						Tariff, $/t						Comparison by Route for Tariffs, $/ 100 tkm(Railway Route to Klaipeda Port=100)					
Fertilizer	Tallin	79				21	100	84				16	100	90					114
	Ventspilis	49	17		33		100	67	9		24		100	99					98
	Klaipeda	**45**	**27**	**27**			**100**	**61**	**15**	**24**			**100**	**100**	**100**	**100**			**100**
	Kaliningrad	56	28	16			100	28	27	45			100	21	100	188			57
	S. Peterburgas	100	-	-			100	100	-	-			100	35	-	-			48
		From Moscow St.(Russia)																	
		Distance Structure (%)						Tariff Structure (%)						Comparison by Route for Tariffs, $/ 100 tkm(Railway Route to Klaipeda Port=100)					
Grain	Tallin	73				27	100	72				5.66	100	92					138
	Ventspilis	60			40		100	73			27		100	95					114
	Klaipeda	**39**		**30**			**100**	**58**		**23**			**100**	**100**	**100**	**100**			**100**
	Kaliningrad	52	31	17			100	24	30	47			100	21	100	248			68
	S. Peterburgas	100					100	100					100	36					53
		From Moscow St.(Russia)																	
		Distance, km						Tariff, $/t						Tariffs, $/ 100 tkm					
Perishable	Tallin	73	-	-	-	27	100	88	-	-	-	12	100	**96**				44.48	139
	Riga	70	-	-	30	-	100	86	-	-	14	-	100	**98**			45.75		138
	Ventspilis	60	-	-	40	-	100	81	-	-	19	-	100	**98**			47.41		126
	Klaipeda	**39**	**30**	**30**	**-**	**-**	**100**	**68**	**15**	**17**	**-**	**-**	**100**	**100**	**100**	**100**			**100**
	Kaliningrad	52	31	17	-	-	100	41	32	28	-	-	100	**22**	100	140			48
	S. Peterburgas	100	-	-	-	-	100	100	-	-	-	-	100	**33**					58

Table I.1.3-3 Discount Coefficient Applicable for Baltic Railway Tariff, 2003 for Imported, Exported, and Domestic Cargoes

No	Cargo	ETSNG code	Route	Coefficient (factual tariff)	In force from	Expiration date	Notes
1	Crude oil (extracted in Lithuania)	201005	export from Rimkai station	0.9	2003/1/20	2003/12/31	defined for every quarter
2	Cement	281	export Akmene-Draugyste	0.91	2003/1/1	2003/12/31	by appointed trains
3	Cement	281	export, domestic	0.95	2003/1/1	2003/12/31	except exported by appointed trains via Draugyste s
4	Raw material for fertilizers	431-432	domestic, export	0.864	2003/1/10	2003/12/31	in wagons
5	Raw material for fertilizers	431-432	import	0.912	2003/1/10	2003/12/31	in wagons
6	Appatite concentrate	431036	from Klaipeda Port to Silainiai station trains which carried to Klaipeda Port from Silainiai station dry bulk cargo from sender in Silainiai	0.55	2003/1/1	2003/12/31	
7	Chemical and mineral fertilizers	433-436	import, export (except through Klaipeda Port)	0.95	2003/1/1	2003/12/31	in tank wagons
8	Chemical and mineral fertilizers	433-436	domestic,export through Klaipeda Port	0.96	2003/1/10	2003/12/31	in wagons, except tank
9	Chemical and mineral fertilizers	433-436	domestic,export through Klaipeda Port	0.912	2003/1/10	2003/12/31	in tank wagons
10	Plastic film	461385	ferry line Mukran-Klaipeda, route Paneriai	0.9	2003/1/1	2003/12/31	
11	Ammonia	488049, 488161	domestic, import, export	0.76	2003/3/10	2003/12/31	in wagons
12	Sugar syrup	521	export to Belarus	0.8	2003/3/10	2003/12/31	in tank wagons
13	Sulphur	787169	import	0.96	2003/1/10	2003/12/31	in wagons
14	20, 30 and 40 feet containers		impost, export	0.65	2003/1/1	2003/12/31	loaded and empty; ownership
15	Cargo		brought into Republic of Lithuania, stored in import-export terminals or stored and/or temporaly stored in warehouses of customs, and later carried from Republic Lithuania	0.9	2003/1/1	2003/12/31	

Source: Marketing Division of Lithuanian Railway

Table I.1.3-4 (A) Discount Coefficient Applicable for Baltic Railway Transit Tariff for 2003 for Wagon Shipment Carriage

Cargo	ETSNG code	Route	Discount coefficient applicable for basic tariff	Validity period	
				from	until
Klaipeda direction					
Grain	011-018	to Klaipėda Port	0.430	2003/1/1	2003/12/31
Grain	011-018	from Klaipėda Port	0.511	2003/1/1	2003/12/31
Sawn timber	091	to Draugystė station	0.612	2003/1/1	2003/12/31
Newsprint	132055	from Solikamsk station to Draugystė station	0.586	2003/1/1	2003/12/31
Iron ore	141	to Klaipėda Port	0.473	2003/1/1	2003/12/31
Coal	161	to Klaipėda Port	0.579	2003/1/1	2003/12/31
Peat	181	to Klaipėda Port	0.600	2003/2/17	2003/12/31
Fuel oil, diesel fuel, petrol	211, 214, 221	to AB „Klaipėdos nafta“	0.552	2003/1/1	2003/12/31
Gazolene	215031	to AB „Klaipėdos nafta“	0.579	2003/1/1	2003/12/31
Fuel oil, gasolene, diesel fuel, petrol	211, 214, 215031, 221	from AB „Klaipėdos nafta“	0.494	2003/1/1	2003/12/31
Paraffin	224	Kena-Draugystė (ferry line Klaipėda-Mukranas)	0.574	2003/3/10	2003/12/31
Petroleum waste	225048	to Draugystė station	0.579	2003/1/1	2003/12/31
Broken stone	232	to Klaipėda Port	0.600	2003/2/17	2003/12/31
Lime	233114	Kena/Stasylos-Klaipėda	0.573	2003/1/1	2003/12/31
Cast iron	311	to Klaipėda Port from Tula MK	0.406	2003/1/20	2003/12/31
Ferrous metals	311-324	to Klaipėda Port	0.446	2003/1/1	2003/12/31
Ferrous metals	311-324	to Klaipėda Port from Žlobino MK	0.391	2003/1/1	2003/12/31
Sheet steel	324	Klaipėda-Kena	0.494	2003/1/1	2003/12/31
Non-ferrous metals	331	to Klaipėda Port	0.588	2003/1/1	2003/12/31
Chemical and mineral fertilizers	431-436	to Klaipėda Port	0.567	2003/1/1	2003/12/31
Chemical and mineral fertilizers	431-436	to Klaipėda Port from Belarus	0.550	2003/3/10	2003/12/31
Slate oil	472093	to Klaipėda Port	0.552	2003/1/1	2003/12/31
Sugar	521016	from Klaipėda Port to Uzbekhistan	0.494	2003/1/1	2003/12/31
Raw sugar	521054	from Klaipėda Port to Russia	0.408	2003/1/1	2003/12/31
Raw sugar	521054	from Klaipėda Port to Kazakhstan	0.377	2003/1/1	2003/12/31
Raw sugar	521054	from Klaipėdos Port in other directions	0.436	2003/1/1	2003/12/31
Oil cake, fodder meal	542	to Klaipėda Port	0.579	2003/1/1	2003/12/31
Cotton	611	to Klaipėda Port	0.500	2003/1/1	2003/12/31
Acetic anhydride	723070	to Klaipėda Port	0.547	2003/1/1	2003/12/31
Acetic acid	724209, 724213	to Klaipėda Port	0.547	2003/1/1	2003/12/31
Ethylacetate	725362	to Klaipėda Port	0.522	2003/1/1	2003/12/31
Cargo in LG refrigerated wagons		from Klaipėda Port	0.746	2003/1/1	2003/12/31
Cargo in LDZ refrigerated wagons		from Klaipėda Port	0.634	2003/1/1	2003/12/31
Cargo in refrigerated wagons of other		from Klaipėda Port	0.746	2003/1/1	2003/12/31
Kaliningrad direction					
Iron ore	141	to Kaliningrad area	0.802	2003/1/1	2003/12/31
Coal	161	to Kaliningrad area	0.620	2003/2/10	2003/12/31
Coke	171	to Kaliningrad area	0.808	2003/1/1	2003/12/31
Broken stone	232395	to Kaliningrad area from Belarus	0.900	2003/1/1	2003/12/31
Ferroalovs	313	to Kaliningrad area from Kazakhstan	0.792	2003/1/1	2003/12/31
Glass tare	662	Kybartai-Kena	0.750	2003/1/1	2003/12/31
Cargo in LDZ refrigerated wagons		to and from Kaliningrad area	0.850	2003/1/1	2003/12/31
Cargo in LG refrigerated wagons		to and from Kaliningrad area	1.000	2003/1/1	2003/12/31
Cargo in refrigerated wagons of other		to and from Kaliningrad area	1.000	2003/1/1	2003/12/31
Other transit directions					
Potassium fertilizers	434	Stasylos - Joniškis from GS Belaruskalij	0.521	2003/1/1	2003/12/31
Cargo in LG refrigerated wagons		in all directions, except Kaliningrad area and from Klaipėda Port	0.785	2003/1/1	2003/12/31
Cargo in LDZ refrigerated wagons		in all directions, except Kaliningrad area and from Klaipėda Port	0.667	2003/1/1	2003/12/31
Cargo in refrigerated wagons of other countries		in all directions, except Kaliningrad area and from Klaipėda Port	0.785	2003/1/1	2003/12/31
Liquefied gas, hydrocarbons (in tank wagons)	226 (išskyrus 226021, 226069, 226106), 488, 711	in all directions, except Kaliningrad area	0.644	2003/1/1	2003/12/31
Motor cars and semitrailers		in all directions, except Kaliningrad area	0.803	2003/1/1	2003/12/31

Table I.1.3-4 (B) Discount Coefficient for Cargo Other than (A) and (C)

Cargo	ETSNG code	Route	Discount coefficient applicable for basic tariff	Validity period	
				from	until
Other cargo, except listed in (A) & (C)		to Klaipėda Port	0.644	2003/1/1	2003/12/31
Other cargo, except listed in Tables (A) & (C)		from Klaipėda Port	0.549	2003/1/1	2003/12/31
Other cargo, except listed in Tables (A) & (C)		Mockava-Joniškis	0.506	2003/1/1	2003/12/31
Other cargo, except listed in Tables (A) & (C)		Joniškis-Mockava	0.506	2003/1/1	2003/12/31
Other cargo, except listed in Tables (A) & (C)		via Mockava station in other directions	0.597	2003/1/1	2003/12/31
Other cargo, except listed in Tables (A) & (C)		in all directions, except Klaipėda Port, Mockava station and Kaliningrad area	0.644	2003/1/1	2003/12/31

Table I.1.3-4 (C) Cargo That Cannot Apply Wagon Shipment Basic Tariff Coefficient Listed in (A) & (B)

Cargo	ETSNG code	Route	Discount coefficient applicable for basic tariff	Validity period	
				from	until
Motor cars	381087	in all directions	1.000	2003/1/1	2003/12/31
Wine, spirits,phenol (in tank wagons)	591, 594, 721, 722	in all directions	1.000	2003/1/1	2003/12/31
Cargo in insulated wagons		in all directions	1.000	2003/1/1	2003/12/31
Oversized cargo and cargo carried in transporter wagons		in all directions	1.000	2003/1/1	2003/12/31
Long cargo		in all directions	1.000	2003/1/1	2003/12/31
Dangerous cargo		in all directions	1.000	2003/1/1	2003/12/31
Military shipments		in all directions	1.000	2003/1/1	2003/12/31

Table I.1.3-4 (D) Discount Coefficient Applicable for Baltic Railway Transit Tariff for 2003 for Container Shipment Carriage

Cargo	ETSNG code	Route	Discount coefficient applicable for basic tariff	Validity period	
				from	until
20, 30, 40 feet loaded and empty all type containers		in all directions except Kaliningrad area	0.650	2003/1/1	2003/12/31
20, 30, 40 feet loaded and empty all type containers		to/from Kaliningrad area	0.900	2003/1/1	2003/12/31
Dangerous cargo		in all directions	1.000	2003/1/1	2003/12/31
Military shipments		in all directions	1.000	2003/1/1	2003/12/31

Source: Marketing Division of Lithuanian Railway

Note:
(1) For transit cargo carried to and from Kaliningrad area via Klaipeda Port tariffs, Klaipeda direction coefficients are applied.
(2) For transit cargo carried via Mockava station to and from Klaipeda Port or Kaliningrad area tariffs, Mockavoa direction coefficients are applied.
(3) LG stands for Lithuanian Railways and LDZ stands for Latvian Railways
(4) Basic tariff - tariff estimated according to Domestic Transit cargo tariff book TKT-LG/2003.
(5) Factual tariff - tariffs estimated applying coefficients listed in Tables 1, 2 or 4 to basic tariff.
(6) ETSNG stands for Unified Cargo Nomenclature of CIS (Russian abbreviation)

It is obvious that Russian Railway's transit tariffs for the Russian Ports such as Kaliningrad Port and St. Petersburg Port are the lowest for six commodities among the ports. The highest tariffs of the two Russian Ports are around 50 to 60% of those to Klaipeda Port. By comparing the tariff per 100 ton km, the lowest tariff is shown by fertilizer between St. Petersburg Port and Sevemaya Station in Russia as 0.68 US$ followed by Kaliningard Port as 0.80 US$. The tariffs less than 1 US$ are shown for grain between Moscow and the two Russian Ports as 0.75 US$ to St. Petersburg Port and 0.96 US$ to Kaliningrad Port respectively. The Russian Railway's tariffs for steel products are 1.18 US$/100 ton km to Kaliningrad Port and 1.16 US$/100 ton km to St. Petersburg respectively. These tariffs are almost doubled to that to Klaipeda Port at 2.31 US$/100 ton km.

The weight of railway distance of Russian railway is the largest of all railways of other countries. Then the tariff reduction policy of Russian railway has an effective and positive impact on cargo demand on the routes to the two Russian ports, but has a negative impact on cargo demand to other ports. In particular, the tariffs of the Russian railway to Kaliningrad Port are the lowest of all commodities. Comparing with the tariffs of the Russian railway to Klaipeda port, the tariffs to Kaliningrad Port is only 23% of that to Klaipeda Port for steel products, 21% for fuel oil, fertilizer and grain, and 22% for perishable goods. To cope with this tariff reduction policy of the Russian railway, the Lithuanian Railways Company has tried to stop the cargo flow from converting from the Klaipeda route to the Kaliningrad port by using a tariff lowering policy. For example, the tariffs of the Lithuanian railway are 1/2.4 for steel products and 1/2.5 for grain, but the weight of distance for the Lithuanian railway is extremely low (less than 15% of the total railway distance). The result is that the tariff reduction by the Lithuanian Railway for this short distance has not been effective in reducing of the total tariff between Russia and the Klaipeda Port, though this policy should have contributed to more cargo to Klaipeda Port.

As can be seen above, the Russian Railway's rates are significantly lower and easily compensate for any additional stevedoring costs at Russian ports or shipping costs to/from the Russian ports in the Gulf of Finland. As a result of this Russian policy, the transit cargo through Klaipeda Port fell drastically.

It is reported that the current Russian tariff policy has triggered significant traffic congestion at St. Petersburg Port and caused long shipping delays. Russian cargo owners are said to be dissatisfied with this situation and proposals have been made to normalize the tariffs, but this has yet to be implemented.

(3) Tariff Policy of Lithuanian Railways Company

After the restoration of Lithuanian independence, the Lithuanian Railways Company started to determine the freight tariff themselves. As a result, price adjustment on the cargo flows has become evident. Since they are working on the market research for international economic tendencies as well as transportation service, they can operatively react to the price changing. The Lithuanian Railway's tariff since 2001 has remained unchanged. In order to draw as much cargo as possible into transit lines, particularly the corridor I and IX, a flexible discount system needs to be applied. To this end, the Lithuanian Railways Company is also actively working to simplify the customs procedures on transit cargo.

(4) Border Barriers (Railway)

Major border barriers in railway transport are customs clearance and the gauge difference between the Polish Railway (standard gauge: 1,435mm) and the Lithuanian Railway (broad gauge: 1,688mm). It consumes too much time and costs to transfer cargo from wagons on the broad gauge to those on the standard gauge and vice versa. The north-eastern part of Europe such as Finland, Russia, and the CIS countries has the broad gauge and other south western parts of Europe (except Spain and Portugal which have broad gauge) have the standard gauge. The railway transport crossing between these two groups of countries has been a major obstruction. This fact seems to be one of the major factors inhibiting railway transport between the north and the south.

(5) Tariff Policy of Russian Railway Ministry

Russian tariff policy for railway including its arbitrary decision on tariff level has been influencing not only to Russia itself but also other countries' railway traffic. In particular, the drastic reduction of tariff for international transit since 2001 has created serious problems for the Baltic States-demand-cargo except to Russian ports such as Kaliningrad and St. Petersburg. This tariff-lowering policy by the Russian Railway Ministry is attributed, not to the market forces, but more to political factors in order to increase the cargo throughputs through the Russian seaports.

1.3.2 Truck Tariff

(1) Tariff Level in Lithuania (Truck)

Truck services are provided by truck companies, associations such as LINAVA (Lithuanian National Road Carriers Association), brokers and forwarders. The JICA Study Team interviewed the management of LINAVA and some international truck companies.

The investigation has disclosed that the market for freight transport is free and competitive. Transport by truck is usually conducted on an individual contract basis between forwarder/truck company and shipper. Those contracts include the tariff, which is negotiated between forwarder and truck company, taking into account the characteristics of the cargo: (i) category such as fresh fruits, fresh vegetables, textiles, electric machines, high-tech audio goods, textile, oil and gas, (ii) type such as box, bug, tank and container, (iii) weight, (iv) cubic volume, and (v) distance.

(2) Tariff Structure (Truck)

The systems used to establish the trucking tariff level have a wide diversity and are based on a contract between forwarder/trucking company and shipper. According to the interviews with several forwarder and truck companies, they seem to use a zone system of tariff, which has not been determined accurately by distance.

According to the interviews with several trucking companies and forwarders, the following facts have become clear.

- The zoning tariff is based on some grouping of countries. It means that the truck tariff has not been set up by exact distance for transportation.
- The interview with an international transit truck forwarder has established tariffs between major OD as follows:

- (Lithuania ~ Europe through Klaipeda Port)
- Lithuania~Germany Zone: 900~1,200 €
- Lithuania~France Zone: 1,200~1,500 €
- Lithuania~Italy Zone: 1,500~1,700 €
- (Moscow ~ Europe)
- Moscow~France Zone: 3,000~3,500 €
- Moscow~Spain Zone: 4,000 €
- Moscow~Italy Zone: 5,000 €

- The tariff on the Moscow~Europe route is the same as that through Klaipeda Port.
- The tariff for a trailer with refrigerator is higher by 30% than that without refrigerator.
- Route selection between road and sea depends not only on tariff but also on transport time including waiting time at the border.
- One Example of Potential Truck Traffic Generation through the Klaipeda Port.

As shown in Figure I.1.3-1, there are three zones for potential market demand for truck transportation, namely the Klaipeda Zone, the Vilnius Zone and the German Zone. Generally, truck cargoes in the Klaipeda Zone travel through the Klaipeda Port to the German Zone, while those to/from the Vilnius Zone move directly to/from the German Zone by truck on the road.

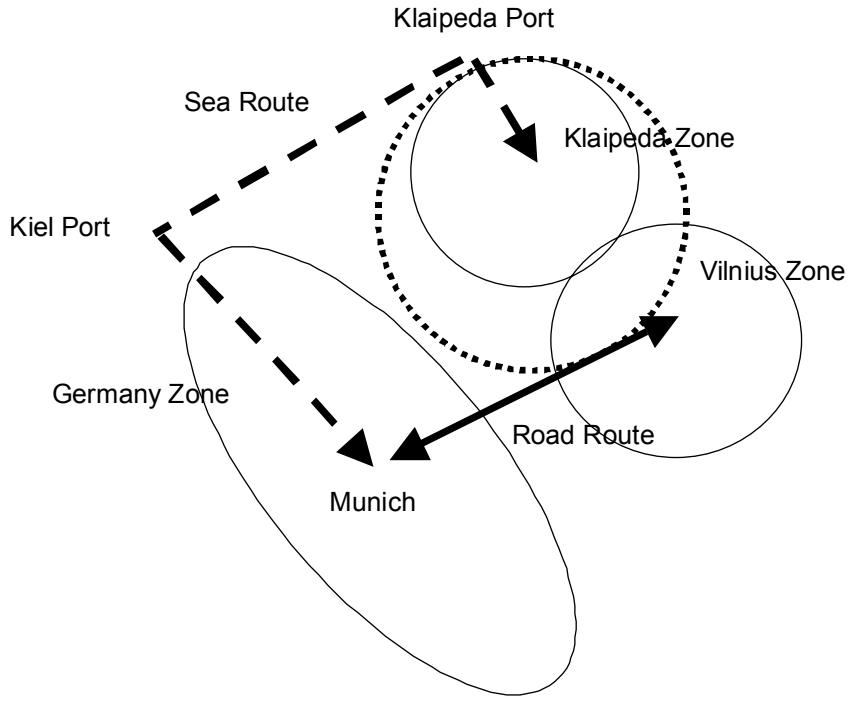
There seem to be two major truck routes in the hinterland and foreland of the Klaipeda Port. Table I.1.3-5 shows the comparison of the tariff estimated on the basis of cost between sea route and inland (road) route.

Table I.1.3-5 Comparison of Tariff between Vilnius and Munich

Route		Distance(km)	Tariff (€/Vehicle)	Time
Sea Route (Through Klaipeda Port)	Klaipeda-Kiel	770	700	30 hours
	Vilnius	340	221	1 day
	Kiel-Munich	650	420	1 day
	Total	1,750	1,341	2day+30hour
Road		1,650	1,073	2.0 days

Source: The JICA Study Team's interview with an International forwarding company in Vilnius.

The above table indicates that the conditions of diversion of traffic demand from "Land Route" to "Sea Route" (through Klaipeda Port) depend on (i) tariff reduction of the Ro/Ro ferry, and (ii) time reduction for the "Sea Route", including the time for navigating and staying in port for customs clearances. If these existing conditions do not change, the traffic demand for the Vilnius zone will not take the sea route through Klaipeda Port. The above conditions could provide a boundary of two zones in the hinterland of the Klaipeda Port to separate the traffic volume into two routes.



Note: The dotted circle shows the expanded Klaipeda Zone formed by the diversion of road traffic demand from the road route to the sea route.

Figure I.1.3-1 Potential of Hinterland of Klaipeda Port for Cargo Demand by Truck

(3) Border Bottleneck (Truck)

There are many obstacles for international road transportation such as: i) customs clearance, ii) quota of the quantity of specified imports (Russia set the import quota for meat which led to a decrease in the meat import from the southern part of Europe), iii) number of permits to cross the borders (Table I.1.3-6), iv) limit of weight of cargo to be loaded on trucks (Russia and Belarus: 38 ton/traillor, Poland and the Baltic States: 40 ton/trailor, Sweden: 60ton/trailer), v) bad road conditions (Poland is famous for having the worst road condition in Europe) and road tax (Italy, Spain and France: 0.27 Euro/km, Germany: 0.15 Euro/km implemented from August, 2003).

- TIR (Transport Internationaux Routiers)

  The principal legislation governing the TIR procedure is the TIR Convention 1975, prepared under the auspices of the United Nations Economic Commission for Europe (UN/ECE). It was adopted on behalf of the Member States by the European Community under EC Reg. No. 2112/78 of 25 July 1978. The movement of goods within the Community under cover of a TIR carnet is provided for in Articles 451-457b of the IPC (Implementation Provisions of the Community Customs Code).

  As the Convention stipulates that procedures and checks applied for the Customs authorities of one country are recognized by the Customs authorities of all other countries involved in the transport, the goods theoretically are only inspected at departure and again at destination. There is no need for physical checks of the

goods while they are in transit (unless, of course, Customs authorities find a reason to do so). This saves a lot of time and manpower on the part of Customs.

The TIR Transit system is composed of five pillars: (i) Secure vehicles or containers, (ii) International guarantee, (iii) TIR Carnet (Customs Document), (iv) Mutual recognition of customs controls, (v) Controlled access.

- Green Card Insurance

  People who travel by motorcycle in Western Europe need the Green Card Insurance. The Green Card Insurance is only minimum liability Insurance and the minimum liability is different for each country. The Green Card Insurance is valid in the following countries: Austria, Belgium, Germany, Denmark, Spain, France, Finland, Great Britain, Greece, Italy, Ireland, Iceland, Luxembourg, Netherlands, Norway, Portugal, Sweden, and Switzerland. In all other European countries, especially in east European countries, travelers have to buy insurance on the border and can buy up to 6 months of Green Card Insurance. However, this "green card" system is not applicable in the territory of Lithuania, because Lithuania has not yet adhered to the international compulsory third party liability insurance system according to "National Legislation Applicable to International Road Transport, Lithuanian National Road Carriers Associations (LINAVA)", March 2003.

1.3.3 Ocean Tariff

(1) Tariff Level (Ship)

The ocean tariff is mostly market oriented because the price of loaded cargo is decided by a market mechanism and is closely related to the ocean tariff. The ocean tariff is decided by negotiation between a shipping company and shippers.

(2) Tariff Structure (Ship)

Unlike railway tariff, there is no basic tariff for shipping trade. The ocean tariff varies by route, type of cargo and type of ship. Table I.1.3-6 shows the ocean tariffs by main route and by cargo and Table I.1.3-7 shows the tariff by ferry boat for Ro/Ro cargo respectively.

Table I.1.3-6 Ocean Tariff by Commodity and by Route

Commodity	Route	Type of Vessel	Tariff [2]
Fertilizer & Grain	American Gulf~Japan	**Panamax**	30.59
	North America Japan		23.06
Coal	East Coast of USA~Japan	**Cape**	17.90
	East Coast of USA~Western Europe		9.18
	East Coast of Australia~Japan		8.09
	East Coast of Australia~Western Europe		16.72
Iron Ore	Brazil~Japan	Cape	16.05
	Brazil~Western Europe		9.06
Logs	North America~Japan	25 Type	780.00
Wheat	North America~Japan	20 Cape	34.30
Crude Oil	Middle East~Japan	VLCC	74.75

Source: "Japan Marine Newspaper", July 2, 2003. (website)

Note: 1. The tariff is dated June 30, 2003
2. Unit of Tariff:
(1) Dry cargo: US$/ton
(2) Logs: 1,000 US$ per voyage
(3) Crude Oil: World Scale (WS) of Tariff Index
3. DWT by type of vessel is as follows: Panamax (50,000 to 80,000); Cape (more than 80,000); 25 type (), 20 Cape (), VLCC (200,000 to 300,000)

1.3.4 Port Tariff

(1) Tariff Level (Port)

The port tariff is mainly composed of two categories. One is port dues and the other is the stevedoring service charges. The port dues of the Baltic seaboard ports are mostly regulated and controlled by the port authority under the Ministry of Transport. The port dues of Klaipeda Port are based on "the Rules of Application of Klaipeda State Sea Port Dues" approved by Decree No. 3-322 of the Minister of Transport and Communications of the Republic of Lithuania of 26 June 2002. An amendment of these regulations has been requested by a variety of organizations and companies such as associations of ship owners, shipping companies and port users. They request an amendment in two ways. One is to request directly to the MOTC to amend it. The other is to make a request to the KSSA to amend it. In the case of a direct request to the MOTC, MOTC will ask the KSSA to deliberate on the requests and the KSSA submit the request to the MOTC after deliberation when the MOTC will make the final decision. On the other hand, in the case of a request to the KSSA, the KSSA submits the request to the MOTC after deliberation and the MOTC then makes the final decision.

However, the stevedoring service charges are mostly cargo handling charges. These charges are basically decided on the basis of a market mechanism, namely, negotiation between the stevedoring companies and shipping companies (carriers).

Table I.1.3-7 Cargo Tariff by Ferry Boat between Klaipeda Port and Kiel Port (Valid from January 2003)

Type of unit / vehicle	Lane meter / unit	Freight in Litas	Freight in Euro
Truck, incl. 1st driver / Trailer	per commencing lane meter	150	42
Truck / Trailer up to 8 m	per unit		
- with driver		1,190.00	336.00
- without driver		1,035.00	300.00
2nd and subsequent drivers	per person	430.00	125.00
20' Container	per unit	1,345.00	390.00
20' Roll trailer			
30' Container	per unit	1,620.00	470.00
30' Roll trailer			
40' Container	per unit	2,175.00	630.00
40' Roll trailer			
Swap-body	per unit	1,550.00	450.00
Empty units	on request only		
Minibus/Van new	per unit	1,070.00	310.00
Car new	per unit	1,070.00	310.00
2nd hand		655.00	190.00
LCL Cargo (minimum)	per ton or m^3	145.00 w/m	42.00 w/m
	up to 10 ts/m^3	110.00 w/m	32.00 w/m
	more than 10 ts/m^3	260.00	75.00
		consignment	consignment
Bunker adjustment fee (BAF)	per commencing lane meter, per ton, per m^3	based on monthly review	
Currency adjustment fee (CAF)		based on monthly review	
Surcharges			
Reefer plug in	all per unit	140.00	40.00
Roofer on diesel *)		65.00	19.00
IMDG goods	> = 2.500 kg	280.00	80.00
IMDG goods	< 2.500 kg	150.00	42.00
Over width	2,51 - 3,00 m	25% of basic rate	25% of basic rate
	3,01 - 4,50 m	50% of basic rate	50% of basic rate
Over weight	per 15 ton over 40 ton	10% of basic rate	10% of basic rate
Dead freight		10% of basic rate	10% of basic rate

Source: Krantas Shipping Company.(Website)
Note: 1.* for control only, tank must be filled minimum half way.
2. IMDG stands for "International Maritime Dangerous Goods".

(2) Tariff Structure (Port)

[Port Dues]

The port dues of eastern Baltic Sea ports are as follows.

Klaipeda Port

- Vessel Dues, calculated according to gross tonnage of the vessel (GT);
- Navigation Dues, calculated according to GT;
- Tonnage Dues, calculated according to GT or cargo unit;
- Berth Dues, calculated according to GT;
- Sanitary Dues, calculated according to GT;
- Passenger Dues, calculated for each passenger;

Therefore, there are six port dues that are officially announced in the Rules of the Port Dues. According to the Order of the Minister of Communications, there are minimum and maximum charges for pilotage services established, but they are not included in the dues of the port.

Butinge Terminal

This terminal does not apply any dues. It was established by the State and in this respect it is the only case on the Eastern Sea Port of the Baltic Sea, and, probably, in Europe.

Ventspils Port

- Tonnage Dues, calculated according to GT;
- Channel Dues, calculated according to GT;
- Pilotage Dues, calculated according to GT;
- Sanitary Dues, calculated according to GT;
- Small Vessels Dues, calculated according to GT;
- Cargo Dues, calculated according to the amount (size) of handled cargo in metric tones (in this case no Tonnage and Channel Dues are applied);

In addition to that, the Port has the following services and the tariffs for them announced:

- Mooring Dues, calculated according to GT;
- Towage Dues, calculated according to GT;
- Fire Prevention services, hourly tariff applied;
- Services of the port fleet, hourly tariff applied;
- Supply of fresh water, the tariff for the amount applied;
- Reception of contaminated ballast, the tariff for the amount applied;
- Reception of water left after washing the tanks of a ship, the tariff for the amount applied;

- Reception of thick waste of oil and oil products and garbage contaminated with oil, the tariff for the amount applied.

Thus, six port dues and eight tariffs for the services provided are applied in the Port of Ventspils. The rate of dues and the tariffs for the services provided are officially announced in the Rules of the Ventspils Port Dues.

It should be noted here that the Port of Ventspils does not apply berth dues. The user of the berth (port operator) pays separate dues to the port administration for the use of the berth.

Riga Port

- Tonnage Dues, calculated according to GT;
- Channel Dues, calculated according to GT;
- Sanitary Dues, calculated according to GT;
- Berth Dues, calculated according to GT;
- Pilotage Dues, calculated according to GT;
- Small Vessels Dues, calculated according to GT;
- Ice Dues, calculated according to GT;
- Passenger Dues, calculated for each passenger.

Riga Port has announced the maximum tariffs for the services offered as follows:

- Towage Dues, calculated according to GT or an hourly tariff is applied;
- Floating Crane, hourly tariff applied;
- Fire prevention services, hourly tariff applied;
- Reception of waste and contaminated water, the tariff for the amount applied;
- Supply of fresh water, the tariff for the amount applied.

Thus, the Port of Riga applies eight port dues and five tariffs for the services offered. Besides these, it has been officially announced that the services of the mooring provider are free.

The Sea Administration of Estonia has established the following dues, approved by the head of the Administration:

- Pilotage Dues, calculated according to GT ;
- Lighthouse Dues, calculated according to GT ;
- Ice Dues, calculated according to GT.

Tallinn Port

- Lighthouse Dues according to GT,
- Tonnage Dues, calculated according to GT;
- Berth Dues, calculated according to GT;
- Mooring Dues, calculated according to GT;

- Roadstead (without mooring to the berth), calculated according to GT;
- Passenger Dues, calculated for each passenger;
- Pilotage Dues (within the boundaries of the port), calculated according to GT.

Besides these, the Rules of the Tallinn Port Dues provide information on the services offered in the port:

- supply of electricity, the tariffs are set by the Port Administration;
- switching of a telephone, the tariffs are set by the provider of the service;
- water supply, the tariffs are set by the Port Administration;
- reception of garbage, the tariffs are set by the provider of the service;
- reception of oily (contaminated) water, the tariffs are set by the provider of the service;
- reception of oily (contaminated) water from the engine room, included into port dues;
- ship rental for elimination of pollution (contamination), hourly tariff applied;
- use of booms, hourly tariff applied;
- rental of the port ships, hourly tariff applied.

Thus, there are seven dues and nine charges for services provided, the tariffs or terms of which are officially announced in the official port dues, applied in the Port of Tallinn. The operators of the port pay cargo charges to the Port Administration according to agreements signed.

The Port of St. Petersburg

- Tonnage Dues, calculated according to M^3
- Lighthouse Dues, calculated according to M^3
- Canal Dues, calculated according to M^3
- Berth Dues, calculated according to M^3
- Anchorage Dues, calculated according to M^3
- Environmental Dues, calculated according to M^3
- Navigation Dues, calculated according to M^3
- Icebreaker Dues, calculated according to M^3
- Pilotage Dues, calculated according to M^3 x Miles

Presenting the rates of port dues and the rules of applying them are usual practice, and all the ports keep to it. The structure of the port dues and their presenting in the officially announced port dues have the following two aims:

- to inform about the valid port dues and the ways of applying them;
- to inform about the services provided in the port and the tariffs that are often harmonized (port advertising, in a way).

While comparing the Eastern Seaboard Ports of the Baltic Sea, it should be noted that all the ports, except for the Port of Klaipeda, apply pilotage dues and that only the Port of St.Petersburg applies M^3 as the calculation unit. The minimum and maximum rates for the pilotage services provided are approved by Order of the Minister of Communications No.3-316 of 24 June 2002, and the procedure of payment is approved by Order of Director General of the Seaport Authority No.V-176 of 28 June 2002. For the purpose of comparison of the ports, dues for pilotage services are included into the total sum of the Klaipeda Port Dues.

The rate of port dues for separate categories of vessels is important, as the decision on attractiveness of a port, in respect to port dues, is made taking this into account. On the other hand, the importance of port dues should not be overestimated, as in most cases it is not port dues that regulate the flows of cargo, especially of the regular continuous flows, because ships go in the direction of places where cargo is. In this respect, a discussion is always held among the port administration, managers of vessels, stevedoring and other companies providing services for the port, as the total sum paid in the port for a conditional unit, e.g. a container, a vehicle or a tone, is of much greater importance. Most often, the market relationships make this sum similar (equalized) in the competitive ports.

Table I.1.3-8 and I.1.3-9 (Litas/GT) shows the comparison of unit tariff of port dues for cargo vessels of major eastern Baltic Seaboard Ports. According to a comparison in Litas/GT, the characteristics of port dues of five ports are as follows:

- The common items of port dues for all ports are four port dues from (i) navigation due, (ii) tonnage due, (iii) vessel due, (iv) sanitary due and (v) berth due. These port dues for Klaipeda Port are the highest of all five ports. The difference of port dues depend mainly on the scale of port infrastructure and costing procedure as the base of dues.
- The ice breaker due is levied by the ports of Tallinn, Riga and St. Petersburg. The ice breaker due of Tallinn is not fixed but 10% of all compulsory dues. The ice breaker due of Kaliningrad (0.135 Litas/GT) is more than that of St. Petersburg (0.0825 Litas/M^3) on the condition that GT is almost the same as M^3.
- The pilotage due of Kaliningrad is much higher than that of the other three Ports.
- The light-house due is levied by the two ports of Kaliningrad and St. Petersburg. Kaliningrad port's due (0.135Litas/GT) is much higher than that of St. Petersburg.

Table I.1.3-10 and Figure I.1.3-2 and I.1.3-3 show the comparison of port dues of the major Eastern Baltic Seaboard Ports in different currencies and Table I.1.3-11 shows the comparison of port dues of those major Eastern Baltic Seaboard Ports in Litas/GT.

The comparative analysis of port dues was made for each category of vessel for similar conditions in each of the ports, not taking into account special discounts that the port administrations have the right to apply.

- Port dues for tankers in the Port of Klaipeda are 25-40 percent higher than in the other ports.
- Port dues for dry bulk cargo vessels in the Port of Klaipeda are up to 30 percent higher, and in comparison to Tallinn up to 55 percent. Dues for small dry bulk cargo vessels in Riga exceed the dues of Klaipeda by nearly 10 percent.

- The dues for general cargo vessels in Klaipeda are on the same level as in Riga and Ventspils, but exceed the dues of Tallinn by approximately 20 percent.
- The dues for container vessels in Klaipeda are equal to those in Tallinn and Riga. If the amount of transferred containers make up approximately 0.5 of the vessel capacity, and are lower if the number of transferred containers is less than 0.3 of the vessel capacity. This is a favorable situation for newly opened (to be opened) container lines. The dues in the Port of Ventspils are lowest, but cargo handling volumes in the new container terminal are practically equal to zero.

Table I.1.3-8 Comparison of Unit Tariff of Port Dues among the Eastern Baltic Seaboard Ports (1): Different Currency

	DEM/GT	USD/GT	USD/GT	USD/M^3	Litas/GT
	Tallinn	Riga	Kaliningrad	St. Petersburg	Klaipeda
Light House Due	-	-	0.041	0.025	-
Ice Breaker Due	10% of all compulsory port dues	0.05	-	0.070	-
Navigation Due	-	-	0.021	0.013	0.40
Tonnage Due	0.40	0.13~0.28 (Small Tonnage Duty:0.05)	-	0.240	2.5~6.0
Vessel Due	-		0.267		2.00
Channel Due	-	0.08~0.19	0.260	0.070	
Sanitary Due	-	0.050~0.093	0.0093~0.093	0.027~0.038	0.025~0.25
Berth Due	GT:1~50,000:100~0.18/GT GT>50,001:0.19/GT	0.10	0.020	0.0031	0.40
Pilotage Due (in Port Operation)	GT:1~60,000:0.4~0.03/GT GT>60,001:0.04/GT	0.10	0.220	0.0058	-
Mooring Charges	GT:1~50,000:30~0.009/GT GT>50,001:0.01/GT				
Road Charges	GT:1~50,000:100~0.18/GT GT>50,001:0.19/GT				
Pilotage Due (Outside Port)	-	-	-	0.0009	-
Anchorage Due	-	-	-	0.0001	-

Source: Port Dues Regulation of the Respective Port Authorities.
Note: The exchange rate of Litas to EURO, US dollars and German marks are taken as: 3.452 Litas/EURO, 3.300 Litas/USD, 1.873 Litas/D respectively EM

Table I.1.3-9 Comparison of Unit Tariff of Port Dues among Eastern Baltic Seaboard Ports (2): Litas/GT

	Tallinn	Riga	Kaliningrad	St. Petersburg	Klaipeda
Light House Due	-	-	0.135	0.0825	-
Ice Breaker Due	10% of all compulsory port dues	0.17	-	0.2310	-
Navigation Due	-	-	0.069	0.0429	0.40
Tonnage Due	0.75	0.43~0.92 (Small Tonnage Duty:0.17)	-	0.7920	2.5~6.0
Vessel Due	-	-	0.881	-	2.00
Channel Due	-	0.26~0.63	0.858	0.2310	
Sanitary Due	-	0.175~0.307	0.0093~0.093	0.027~0.038	0.025~0.25
Berth Due	GT:1~50,000:187~0.34/GT GT>50,001:0.36/GT	0.33	0.066	0.0102	0.40
Pilotage Due (in Port Operation)	GT:1~60,000:0.75~0.06/GT GT>60,001:0.07/GT	0.33	0.726	0.0191	-
Pilotage Due (Outside Port)	-	-	-	0.0030	-
Mooring Due	GT:1~50,000:56~0.017/GT GT>50,001:0.018/GT				
Road Charges	GT:1~50,000:187~0.34/GT GT>50,001:0.36/GT				
Anchorage Due	-	-	-	0.0003	-

Source: Port Dues Regulation of the Respective Port Authorities.

Note: 1.Exchange rate of Litas to EURO, US dollars and German marks are taken as: 3.452 Litas/EURO, 3.300 Litas/USD, 1.873 Litas/DEM respectively.
2. Unit of port dues for St. Petersburg is in Litas/M^3

Table I.1.3-10 (1) Comparison of Port Dues among Major Eastern Baltic Seaboard Ports by Type of Vessel (1)

Port Dues	Tanker					Tanker					Dry Bulk Cargo			
	GT	NT Without Separate Ballast Room	DWT	No. of Vessel Entries into Port	Vessel Discharging Time (Hours)	GT	NT Without Separate Ballast Room	DWT	No. of Vessel Entries into	Vessel Discharging Time (Hours)	GT	DWT	No. of Vessel Entries into Port	Vessel Discharging Time (Hours)
	17,521	14,002	29,690	1	34	32,221	25,777	57,211	1	100	5,381	6,790	1	48
	EUR		USD	USD	Lita	EUR	USD	USD	Lita		EUR	USD	USD	Lita
	Talinn	Riga	Ventspills	Klaipeda		Talinn	Riga	Ventspills	Klaipeda		Talinn	Riga	Ventspills	Klaipeda
Light House Due	900	1,540	1,540	-		1,917	3,544	2,835	-		409	592	592	-
Ice Breaker Due (Jan.~ Nov.)	1,349	700	-	-		3,195	1,289	-	-		575	269	-	-
Navigation Due	-	-	-	7,008		-	-	-	12,888		-	-	-	2,152
Tonnage Due	15,418	7,841	7,141	52,563		28,354	10,826	13,146	96,663		2,152	3,013	4,583	6,726
Vessel Due	-	-	-	28,034		-	-	-	51,554		-	-	-	10,762
Canal Due	-	5,321	5,881	-		-	9,795	10,826	-		-	2,045	-	-
Sanitary Due	-	700	490	4,380		-	1,289	1,289	8,055		-	269	188	1,345
Berth Due	2,816	1,400	-	7,008		4,610	2,578	-	12,888		1,080	538	-	2,152
Pilotage Due(in Port Operation)	981	2,800	2,576	3,749		1,800	5,155	4,743	6,895		614	1,076	990	1,819
Pilotage Due(Outside Port)	621	1,120	280	-		1,278	2,062	1,031	-		409	430	108	-
Total	22,085	21,422	17,908	102,742		41,154	36,538	33,870	188,943		5,239	8,232	6,461	24,956
Total per One Entry(Lit.)	76,258	70,696	59,098	102,743		142,095	120,577	111,773	188,943		18,090	27,169	21,322	24,957
Comparison with Klaipeda(%)	74%	69%	58%	100%		75%	64%	59%	100%		72%	109%	85%	100%
Total per One Entry(Lt./t)	2.57	2.38	1.99	3.46		2.48	2.11	1.95	3.30		2.66	4.00	3.14	3.68

Source: Comparison of Port Dues in the Eastern Seaboard Ports, Strategic Planning Department of Klaipeda Seaport Authority
Note: Exchange rate of Litas to EURO and US dollars are 3.452 Litas/EURO and 3.300 Litas/USD respectively.

Table I.1.3-10 (2) Comparison of Port Dues among Major Eastern Baltic Seaboard Ports by Type of Vessel (2)

Port Dues	Dry Bulk Cargo				General Cargo				Container				
	GT	DWT	No. of Vessel Entries into Port	Vessel Discharging Time (Hours)	GT	DWT	No. of Vessel Entries into Port	Vessel Discharging Time (Hours)	GT	DWT	No. of Vessel Entries into Port	No of TEUs Handled per Call	Full/Empty
	41,643	69,461	1	120	2,900	4,515	1	72	2,658	3,200	52	160	128/32
	EUR	USD	USD	Lita	EUR	USD	USD	Lita	EUR	USD	USD	Lita	
	Talinn	Riga	Ventspills	Klaipeda	Talinn	Riga	Ventspills	Klaipeda	Talinn	Riga	Ventspills	Klaipeda	
Light House Due	2453	4,581	4,581	-	245	319	319	-	9,568	1,403	1,403	-	
Ice Breaker Due (Jan.~ Nov.)	3833	2,082	-	-	311	145	-	-	1,863	638	-	-	
Navigation Due	-	-	-	16,657	-	-	-	1,160	-	-	-	15,565	
Tonnage Due	16657	23,320	21,238	104,108	1,160	1,218	3,048	3,625	40,402	30,477	49,920	144,768	
Vessel Due	-	-	-	83,286	-	-	-	5,800	-	-	-	97,602	
Canal Due	-	15,824	17,490	-	-	1,102	-	-	-	18,755	-	-	
Sanitary Due	-	2,082	2,082	10,411	-	145	102	725	-	5,861	4,838	34,554	
Berth Due	4610	4,164	-	16,657	620	290	-	1,160	23,560	11,722	-	34,554	
Pilotage Due(in Port Operation)	2064	8,329	7,662	8,912	410	580	534	980	10,660	11,722	12,716	-	
Pilotage Due(Without Port)	1407	3,331	833	-	311	232	58	-	2,990	-	-	-	
Total	31,024	63,713	53,886	240,031	3,057	4,031	4,061	13,450	89,043	80,578	68,877	327,043	
Total per One Entry(Lit.)	107,123	210,256	177,824	240,030	10,553	13,302	13,397	13,450	1,712	5,114	4,371	6,289	
Comparison with Klaipeda(%)	45%	88%	74%	100%	78%	99%	100%	100%	94%	81%	69%	100%	
Total per One Entry(Lt./t)	1.54	3.03	2.56	3.46	2.34	2.95	2.97	2.98	1.07	3.20	2.73	3.93	

Source: Comparison of Port Dues in the Eastern Seaboard Ports, Strategic Planning Department of Klaipeda Seaport Authority
Note: 1.Exchange rate of Litas to EURO and US dollars are 3.452 Litas/EURO and 3.300 Litas/USD respectively.
2.Total per one entry (Lt./t) for container vessel is derived from dividing total per one entry (Lt.) by total ton of container cargo (160TEU x 10ton).

Table I.1.3-10 (3) Comparison of Port Dues among Major Eastern Baltic Seaboard Ports by Type of Vessel (3)

Port Dues	Ro-Ro Cargo				Ro-Ro Passenger					Cruise Vessel			
	GT	No. of Vessel Entries into Port	No of Units Handled per Call	Full/Empty	GT	No of Passengers per Call	No. of Vessel Entries into Port	No of Units Handled per Call	Full/Empty	GT	No of Passengers per Call	No. of Vessel Entries into Port	
	18,205	52	100	90/10	18,205	200	52	100	90/10	59,652	1,600	1	
	EUR	USD	USD	Lita	EUR	USD	USD	Lita		EUR	USD	USD	Lita
	Talinn	Riga	Ventspills	Klaipeda	Talinn	Riga	Ventspills	Klaipeda		Talinn	Riga	Ventspills	Klaipeda
Light House Due	63,788	9,612	9,612	-	63,788	9,612	9,612	-		1,963	4,593	4,593	-
Ice Breaker Due (Jan.~ Nov.)	11,040	4,369	-	-	11,040	4,369	-	-		-	2,088	-	-
Navigation Due	-	-	-	99,945	-	-	-	33,315		-	-	-	11,930
Tonnage Due	276,716	208,739	283,998	97,240	7,282	1,606	-	97,240		17,896	119	-	-
Vessel Due	-	-	-	626,707	-	-	-	92,846		-	-	-	47,722
Canal Due	-	128,454	318,078	-	-	803	-	-		-	60	-	-
Sanitary Due	-	40,142	33,133	52,000	-	40,142	33,133	52,000		-	2,983	2,088	14,913
Berth Due	97,280	80,284	-	94,666	89,088	80,284	-	94,666		4,900	5,965	-	2,386
Passenger Due	-	-	-	-	13,312	15,600	-	41,600		1,632	3,200	-	12,800
Pilotage Due(in Port Operation)	34,008	80,284	87,093	-	34,008	80,284	87,093	-		2,064	11,930	7,683	-
Pilotage Due(Without Port)	23,821	-	-	-	23,281	-	-	-		1,125	-	-	-
Total	506,653	551,884	731,914	970,558	241,799	232,700	129,838	411,667		29,580	30,938	14,364	89,751
Total per One Entry(Lit.)	33,642	35,023	46,448	18,665	16,052	14,768	8,240	7,917		102,133	102,096	47,402	89,751
Comparison with Klaipeda(%)	180%	188%	249%	100%	203%	187%	104%	100%		114%	114%	53%	100%
Total per One Entry(Lt./t)	1.85	1.92	2.55	1.03	0.88	0.81	0.45	0.43		1.71	1.71	0.79	1.50

Source: Comparison of Port Dues in the Eastern Seaboard Ports, Strategic Planning Department of Klaipeda Seaport Authority

Note: 1. Exchange rate of Litas to EURO and US dollars are 3.452 Litas/EURO and 3.300 Litas/USD respectively.

2. Total per one entry (Lt./t) for Ro/Ro vessels and passenger cruise is derived from dividing total per one entry(Lt.) by GT

Table I.1.3-11 (1) Comparison of Structure of Port Dues among Major Eastern Baltic Seaboard Ports by Type of Vessel (1)

Port Dues	Tanker					Tanker					Dry Bulk Cargo			
	GT	NT Without Separate Ballast	DWT	No. of Vessel Entries into Port	Vessel Discharging Time (Hours)	GT	NT Without Separate Ballast Room	DWT	No. of Vessel Entries into	Vessel Discharging Time	GT	DWT	No. of Vessel Entries into	Vessel Discharging Time
	17,521	14,002	29,690	1	34	32,221	25,777	57,211	1	100	5,381	6,790	1	48
	EUR	USD	USD	Lita		EUR	USD	USD	Lita		EUR	USD	USD	Lita
	Talinn	Riga	Ventspills	Klaipeda		Talinn	Riga	Ventspills	Klaipeda		Talinn	Riga	Ventspills	Klaipeda
Light House Due	4	7	9	-		5	10	8	-		8	7	9	-
Ice Breaker Due (Jan.~ Nov.)	6	3	-	-		8	4	-	-		11	3	-	-
Navigation Due	-	-	-	7		-	-	-	7		-	-	-	9
Tonnage Due	70	37	40	51		69	30	39	51		41	37	71	27
Vessel Due	-	-	-	27		-	-	-	27		-	-	-	43
Canal Due	-	25	33	-		-	27	32	-		-	25	-	-
Sanitary Due	-	3	3	4		-	4	4	4		-	3	3	5
Berth Due	13	7	-	7		11	7	-	7		21	7	-	9
Pilotage Due(in Port Operation)	4	13	14	4		4	14	14	4		12	13	15	7
Pilotage Due(Outside Port)	3	5	2	-		3	6	3	-		8	5	2	-
Total	100	100	100	100		100	100	100	100		100	100	100	100

Source: Comparison of Port Dues in the Eastern Seaboard Ports, Strategic Planning Department of Klaipeda Seaport Authority

Table I.1.3-11 (2) Comparison of Structure of Port Dues among Major Eastern Baltic Seaboard Ports (2)

Port Dues	Dry Bulk Cargo				General Cargo				Container				
	GT	DWT	No. of Vessel Entries into Port	Vessel Discharging Time (Hours)	GT	DWT	No. of Vessel Entries into Port	Vessel Discharging Time (Hours)	GT	DWT	No. of Vessel Entries into Port	No of TEUs Handled per Call	Full/Empty
	41,643	69,461	1	120	2,900	4,515	1	72	2,658	3,200	52	160	128/32
	EUR	USD	USD	Lita	EUR	USD	USD	Lita	EUR	USD	USD	Lita	
	Talinn	Riga	Ventspills	Klaipeda	Talinn	Riga	Ventspills	Klaipeda	Talinn	Riga	Ventspills	Klaipeda	
Light House Due	8	7	9	-	8	8	8	-	11	2	2	-	
Ice Breaker Due (Jan.~	12	3	-	-	10	4	-	-	2	1	-	-	
Navigation Due	-	-	-	7	-	-	-	9	-	-	-	5	
Tonnage Due	54	37	39	43	38	30	75	27	45	38	72	44	
Vessel Due	-	-	-	35	-	-	-	43	-	-	-	30	
Canal Due	-	25	32	-	-	27	-	-	-	23	-	-	
Sanitary Due	-	3	4	4	-	4	3	5	-	7	7	11	
Berth Due	15	7	-	7	20	7	-	9	26	15	-	11	
Pilotage Due(in Port	7	13	14	4	13	14	13	7	12	15	18	-	
Pilotage Due(Without Port)	5	5	2	-	10	6	1	-	3	-	-	-	
Total	100	100	100	100	100	100	100	100	100	100	100	100	

Source: Comparison of Port Dues in the Eastern Seaboard Ports, Strategic Planning Department of Klaipeda State Seaport Authority.

Table I.1.3-11 (3) Comparison of Structure of Port Dues among Major Eastern Baltic Seaboard Ports (3)

Port Dues	Ro-Ro Cargo				Ro-Ro Passenger					Cruise Vessel			
	GT	No. of Vessel Entries into Port	No of Units Handled per Call	Full/Empty	GT	No of Passengers per Call	No. of Vessel Entries into Port	No of Units Handled per Call	Full/Empty	GT	No of Passengers per Call	No. of Vessel Entries into Port	
	18,205	52	100	90/10	18,205	200	52	100	90/10	59,652	1,600	1	
	EUR	USD	USD	Lita	EUR	USD	USD	Lita		EUR	USD	USD	Lita
	Talinn	Riga	Ventspills	Klaipeda	Talinn	Riga	Ventspills	Klaipeda		Talinn	Riga	Ventspills	Klaipeda
Light House Due	13	2	1	-	26	4	7	-		7	14.8	32.0	-
Ice Breaker Due (Jan.~ Nov.)	2	1	-	-	5	2	-	-		-	6.7	-	-
Navigation Due	-	-	-	10	-	-	-	8		-	-	-	13.3
Tonnage Due	55	38	39	10	3	1	-	24		61	0.4	-	-
Vessel Due	-	-	-	65	-	-	-	23		-	-	-	53.2
Canal Due	-	23	43	-	-	0	-	-		-	0.2	-	-
Sanitary Due	-	7	5	5	-	17	26	13		-	9.6	14.5	16.6
Berth Due	19	15	-	10	37	35	-	23		17	19.3	-	2.7
Passenger Due	-	-	-	-	6	7	-	10		6	10.3	-	14.3
Pilotage Due(in Port Operation)	7	15	12	-	14	35	67	-		7	38.6	53.5	-
Pilotage Due(Without Port)	5	-	-	-	10	-	-	-		4	-	-	-
Total	100	100	100	100	100	100	100	100		100	100	100	100

Source: Comparison of Port Dues in the Eastern Seaboard Ports, Strategic Planning Department of Klaipeda State Seaport Authority

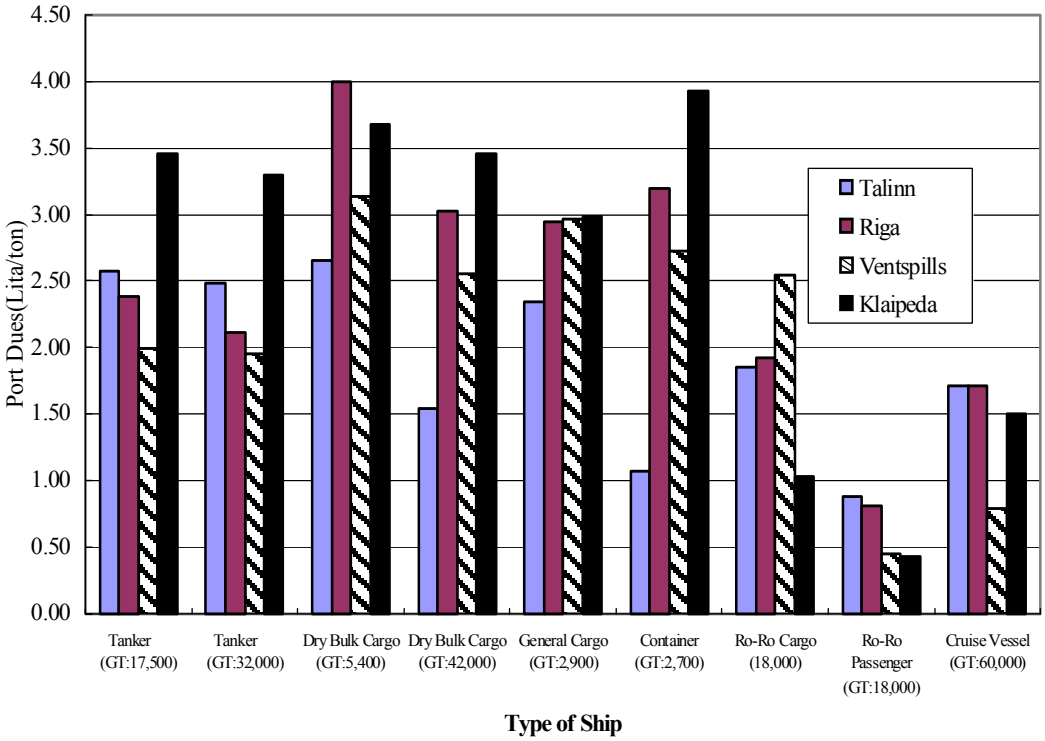


Figure I.1.3-2 Comparison of Port Dues (Unit Rate) by Type of Vessel for Eastern Baltic Seaboard Port

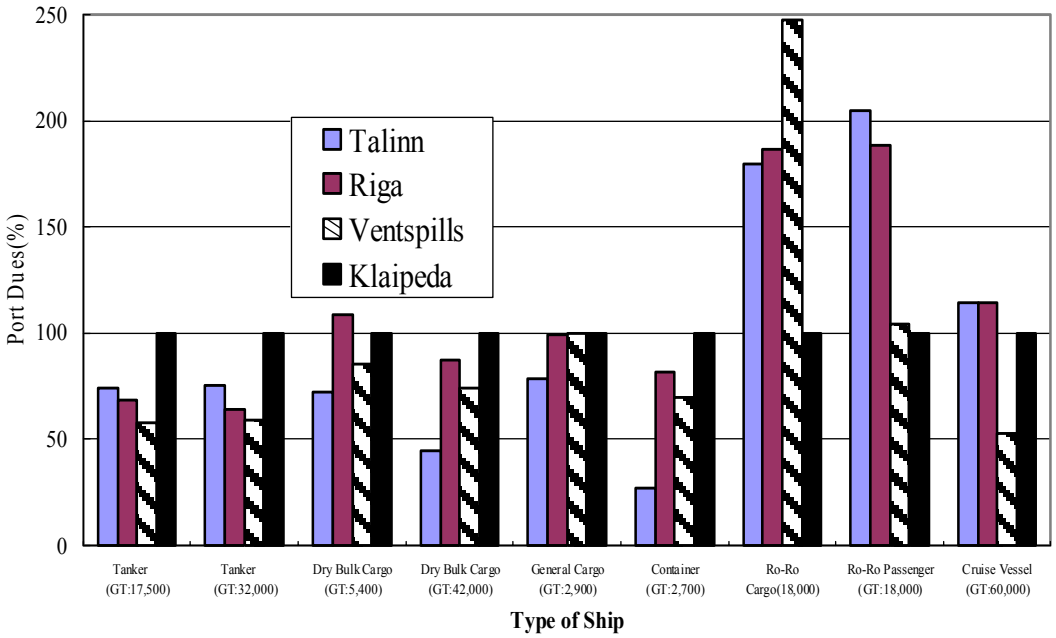


Figure I.1.3-3 Comparison of Port Dues (Klaipeda = 100%) by Type of Vessel for Eastern Baltic Seaboard Ports

- The port dues for Ro/Ro vessels in the Port of Klaipeda are up to two times lower than in the other ports.
- The port dues for cruise vessels in the Port of Klaipeda are approximately 10 percent lower than in Tallinn and Riga. Although the port dues in the Port of Ventspils are by a half lower (no Passenger Due is available), cruise vessels practically do not call in.

The transit of cargo through the Port of Klaipeda can be divided into two cargo flows that are dependent upon the competition in the Eastern Seaboard Ports of the Baltic Sea (from Kaliningrad to the ports in Finland).

The first one is made up of commodities transported from the East to the West. These are mainly raw materials and primary industrial products, i.e. bulk cargo. Therefore, this flow makes up to approximately 85 percent of the total transit cargo. The majority of this cargo is transported FOB by tramps. The port dues in this case are included into the sea freight. The further the distance to the port of destination is, the higher the sea freight is. Therefore, the share of port dues in it is lower. The same could be said about the value of the cargo: the higher it is, the lower the share of port dues in the sea freight is. Theoretically, the Port of Klaipeda is in a more favorable situation as compared to the other competitive ports, i.e. the distance by sea to the ports of destination is shorter. Practically, the sea freight to the same port of destination is nearly the same as compared to the other ports.

Thus, the costs of transportation by land to the port are of paramount importance. In this case, the Port of Klaipeda is in an unfavorable situation concerning export from Russia because Lithuania and Russia have no common border (excluding the border to the Kaliningrad region), and the distance from the place of origin to Klaipeda is in many cases longer than to the other ports. It has become clearly evident since the moment Russia abolished the discounts on railway tariffs for cargo going in the direction of Klaipeda. The location of the Port of Klaipeda is more favorable for cargo from Belarus because these countries have a common border, and the distance is shorter than to the other ports.

Port dues are not the main factor that influence the flow of the above-mentioned bulk cargo. The port dues of the Klaipeda Port for these vessels make up a small portion of the sea freight (up to 10 percent). The longer the distance to the port of destination is, the lower the influence of port dues on the cost of transportation. This influence could not by any means be compared to that of the Russian railway tariffs on the flows of cargo.

With the introduction of new port dues in the Port of Klaipeda in 1998, the dues for tankers practically dropped by 20 percent, but the transportation of oil products in 1998, as compared to that in 1997, has decreased by 1.4 million ton, or by 39 percent. Handling of oil products was fluctuating because of the changes in the general situation of the oil market, mostly due to changes in oil prices. In addition to fluctuations in oil prices, the market of oil transportation by vessels is very unstable too. During the last three years, when transportation cost in February of this year (10 USA dollars per tone) was two times higher than in January, and three times higher than three years ago.

The same could be said of the market for carrying dry bulk cargo by vessels, where the prices at the moment are 60 percent higher than they were a year ago. The 'Baltic

Handymax Index', where the meanings correspond to the rental price of the 40,000 DWT vessel in USA dollars per day at time charter (a lease holder covers the expenses for fuel and in ports, including port dues).

It can be stated here that the supply and demand for vessels and the costs (price) of transported cargo is of much more importance to the carrying of bulk cargo than port dues.

The second flow is made up of consumer goods and primary industrial products. It accounts for approximately 15 percent of the total transit via the Port of Klaipeda. The major part of this flow is made up of relatively expensive cargo (consumer goods) that is carried by liner vessels. The tariff for the line includes not only the sea freight, but charges for cargo handling as well. The share of port dues in the line tariff mostly depends upon the amount of transported cargo, i.e. if the amount of cargo loaded/unloaded in the Port of Klaipeda on/off the vessel is smaller, then the share of dues in the total of port expenses of the line is larger. Therefore, port dues become a very important factor in attracting vessels from new lines that have not yet established their own particular flow of cargo.

While applying a flexible system of port dues, it is possible to attract new lines that, in their own turn, would attract cargo flows. Information on the cargo, which is relatively expensive, i.e. its state and location, is another important factor. Therefore, the introduction of such a port information system would be an advantage in comparison to the ports where it was not available. This system is in the process of introduction at the Port of Klaipeda.

Table I.1.3-12 shows the comparison of port dues for GT 3,000 as an example. Total port dues are 4,824 EURO for Klaipeda Port and 4,332 EURO for Kaliningrad respectively. The Klaipeda port dues are slightly higher than that of Kaliningrad. The biggest share is occupied by tonnage dues at 45% followed by vessel dues at 36% for Klaipeda Port. On the other hand, for Kaliningrad the vessel dues occupy the biggest share at 35% followed by canal dues at 34%.

[Service Charges (Port)]

The average stevedoring service charges for Klaipeda Port are shown in Table I.1.3-13. Liquid cargo and dry bulk cargo are publicly fixed but some ranges of cargo tonnage depend on stevedored quantity, season, forwarding services and destination places. General cargo is based on full loading (vehicle, warehouse, ship) and package type. Container and Ro/Ro cargoes are based on the transport unit.

Table I.1.3-12 Comparison of Port Dues between Klaipeda Port and Kaliningrad Port

[Example of GT:3,000] (Unit: €/GT)

Port Dues	Klaipeda	Kaliningrad
Light House Due	-	236
Navigation Due	348	120
Tonnage Due	2,173	-
Vessel Due	1,738	1,531
Canal Due	-	1,491
Sanitary Due	217	267
Berth Due	348	57
Pilotage Due	-	630
Total	4,824	4,332

Source: Port Dues Regulation of two ports.

Table I.1.3-14 shows the stevedoring service charges of St. Petersburg Port. The service charges are basically decided by the market situation but are indirectly supervised by St. Petersburg Sea Port Company. The *St. Petersburg Sea Port* was registered in St. Petersburg as a joint-stock company on December 8, 1992. It currently owns seven stevedore companies, including *First Container Terminal*, the largest stevedore company in the Baltic. A controlling stake in the company (50% plus one share) is held by *Nasdor* (registered in Liechtenstein). St. Petersburg's City Property Committee holds 28.79% of the company's privileged shares, and the Property Ministry has a 20% stake in the company. The structure of charges are systematic and comprehensive and the charges are classified into nine categories according to type of cargo such as packed unit cargo, bulk cargo, timber cargo, auto equipment, container, Ro/Ro trailer and so on. The charges are composed of cargo transfer and storage. The charges for cargo transfer are classified into two types of tariff. One is the direct charges type which is a flat rate and the other is divided into three categories based on the movement of cargo inside port.

Comparing the charges of major cargoes between two ports, the differences are as follows:

The charges of bulky and general cargo such as fertilizer, food products and raw sugar in St. Petersburg are slightly higher than those of Klaipeda Port. However, other St. Petersburg charges are much higher than those of Klaipeda Port. For example, the St. Petersburg charges for sawn timber and containers are 5.5 times and 2 times those of Klaipeda Port respectively.

Table I.1.3-13 Stevedoring Service Charges of Klaipeda Port

	Cargo	Tariff	Currency.	Notes
1.	Liquid cargo			
1.1	Fuel oil, technical Fuel, vacuum gasoline	4.5-5.2	$/t	Tariff depends on stevedored quantity >900t.t - <100t.t
1.2	Petrol, diesel fuel, aviation fuel	4-4.6	$/t	Tariff depends on stevedored quantity >900t.t - <100t.t
1.3	Mazeikiu Nafta cargo	14.4	LT/t	According to contract
1.4	Liquid fertilizers, agriculture technical cultures	10-11.5	LT/t	Tariff depends on stevedored quantity, on season, forwarding services and on destination place
2.	Dry bulk cargo			
2.1	Fertilizers	8.5-9.5	LT/t	Tariff depends on stevedored quantity, on season, forwarding services and on destination place
2.1.1	Fertilizers (through warehouse)	14-15.5	LT/t	Tariff depends on stevedored quantity, on season, forwarding services and on destination place
2.2	Agriculture technical cultures (export)	10-11.5	LT/t	Tariff depends on stevedored quantity, on season, forwarding services and on destination place
2.2.1	Agriculture technical cultures (export through warehouse)	14.5-16	LT/t	Tariff depends on stevedored quantity, on season, forwarding services and on destination place
2.2.2	Agriculture technical cultures (import)	6-7	LT/t	Tariff depends on stevedored quantity, on season, forwarding services and on destination place
2.3	Cement	7.25-7.75	LT/t	
2.4	Raw sugar	11.5-12.5	LT/t	
2.5	Peat	1.12	€/m³	
2.6	Timber shavings	3.8-4	LT/ m³	
2.7	Metal scrap	3.2	€/t	Full loading (vehicle, warehouse, ship)
2.8	Frozen carcass	11	€/t	Full loading (vehicle, warehouse, ship)
3.	General cargo			
3.1	Fruit, vegetable, frozen foodstuff in boxes	12	€/t	Full loading (vehicle, warehouse, ship)
3.2	Sawn timber, packed	6.6	€/m³	Full loading (vehicle, warehouse, ship)
3.3	General cargo in different packages	8-14	€/t	Tariff belongs on package type. Full loading (vehicle, warehouse, ship)
3.4	Equipment not packed	13	€/t	Full loading (vehicle, warehouse, ship)
3.5	Motor cars	18	€/ps.	
3.6	Motor vehicles (2-5t)	30	€/ps.	
3.7	Mot. vehicles (above 5t)	60	€/ps.	
3.8	Vehicles from container	24	€/ps.	
3.9	Peat in sacks	5.37	€/pallet	
4.	Containers			
4.1	Empty 20’ container	105-110	LT/TEU	
4.2	Empty 40’ container	105-170	LT/TEU	
4.3	Full 20’ container	140-170	LT/TEU	
4.4	Full 40’ container	140-230	LT/TEU	
5.	Ro/Ro			
5.1	Busses, motor cars, tractors (self-propelled)	18	€/unit	
5.2	Busses, motor cars, tractors (towed)	30	€/unit	

Source: Prepared by Marketing Division of KSSA, 2002.11.07
Note: Exchange rate: 1US$=3.405 LT

Table I.1.3-14 Stevedoring Service Charges of St. Petersburg Port

(I) Packed Unit Cargo (Universal Crane Charges)

# of cargo group	Name of cargo group	Cargo transfer (USD/t)				Storage (USD/t-day
		Direct Charges	Movements inside port			
			Cat. 1	Cat. 2	Cat. 3	
1.	Cargo in bags (bags)	18.5	19.3	12.7	6.6	0.63
2.	Cargo in bags (bags) Vessels BI-BO	8.0	8.7	5.2	3.5	0.28
3.	Cargo in boxes unpacked up to 250 kg (boxes unpacked)	14.7	15.3	10.4	4.9	0.38
4.	Cargo in boxes unpacked 251 – 3000 kg (boxes unpacked)	9.9	18.3	12.0	6.3	0.51
5.	Cargo in boxes unpacked above 3000 kg (boxes unpacked)	8.1	13.6	8.1	5.5	0.33
6.	Cargo in packs and rollers up to 250 kg (packs, rollers)	10.2	12.7	6.3	6.4	0.41
7.	Cellulose in packs, average weight up to 250 kg	11.7	12.9	7.0	5.9	0.42
8.	Cargo in packs and rollers above 250 kg (packs, rollers)	12.2	14.1	7.8	6.3	0.46
9.	Paper and cardboard in rollers up to 500 kg (rollers)	11.3	12.0	6.3	5.7	0.40
10.	Paper and cardboard in rollers 501 – 1500 kg (rollers)	9.0	10.0	5.9	4.1	0.33
27.	Paper and cardboard in rollers 1501 – 3000 kg (rollers)	10.3	11.2	6.8	4.4	0.37
11.	Cargo round shape - barrels up to 80 kg barrels, drums and etc.	16.2	16.4	10.2	6.2	0.53
12.	Cargo round shape – barrels above 80 kg barrels, drums and etc.	9.1	9.5	5.5	4.0	0.30
26.	Packed unit cargos (up to 600 kg)	7.4	8.7	5.5	3.2	0.28
	- packets on pallet,					
	- packets formed in packing strops (slings),					
	- Big-bags,					
	- cellulose in packs					
13.	Packed unit cargos (from 601 up to 2100 kg)	6.1	7.6	4.3	3.3	0.23
	- packets on pallet,					
	- packets formed in packing strops (slings),					
	- Big-bags,					
	- cellulose in packs					
25.	Mineral fertilizers in packets formed in packing strops (Big-bags without taking of additional package, slings)	5.2	5.9	3.3	2.6	0.16
28.	Mineral fertilizers in Big-bags (with taking of additional package)	5.6	6.2	3.6	2.6	0.16
14.	Non-ferrous metals: weight of unit up to 1 t (excluding loading of non-ferrous metals onto sea ships specialized for carriage of bulk cargos with side slopes (bulkers)	7.1	8.3	6.1	2.2	0.23
29.	Non-ferrous metals: weight of unit up to 1 t (loading of non-ferrous metals onto sea ships specialized for carriage of bulk cargos with side slopes (bulkers)	7.4	8.5	6.3	2.2	0.23
Exp.	Non-ferrous metals: weight of unit up to 1 t (loading using experimental technology into/out of vessel/vessels of refrigerator type)	8.9	8.9	6.8	2.1	0.23
15.	Non-ferrous metals: weight of unit above 1 t (excluding loading of non-ferrous metals onto sea ships specialized for carriage of bulk cargos with side slopes (bulkers)	6.0	6.6	4.0	2.6	0.18
30.	Non-ferrous metals: weight of unit above 1 t (loading of non-ferrous metals onto sea ships specialized for carriage of bulk cargos with side slopes (bulkers)	6.3	6.9	4.3	2.6	0.18
Exp.	Non-ferrous metals: weight of unit above 1 t (loading using experimental technology into/out of vessel/vessels of refrigerator type)	8.9	8.9	6.5	2.4	0.18
16.	Ferrous metals including metal sheets, rails, pipes, wire (weight of unit up to 3 t)	6.5	7.1	4.5	2.6	0.24
17.	Ferrous metals including metal sheets, rails, pipes, wire (weight of unit above 3 t)	5.6	6.3	3.2	3.1	0.19
24.	Scrap metal (unpacked)	5.50	7.30	5.24	2.60	0.23
18.	Cast iron (bulk)	4.0	5.0	2.0	3.0	0.16
19.	Big size cargo: means of metal transportation (any packages)	11.4	21.8	15.4	6.4	0.71
20.	Meat by carcass, quarters and so on (unpacked) (up to 50 kg)	25.2	30.7	19.5	11.2	1.02
21.	Meat by carcass, quarters and so on (unpacked) (51 kg and more)	28.6	39.1	23.4	15.7	1.29
22.	Food products (boxes, crates)	14.50	14.50	9.00	5.5	0.53
23.	Food products in packages on pallets and in packages formed by packing strops (big-bag, sling)	7.5	9.2	5.3	3.9	0.30

(II) Bulk Cargo

# of cargo group	Name of cargo group	Cargo transfer (USD/t)				Storage (USD/t-day
		Direct Charges	Movements inside port			
			Cat. 1	Cat. 2	Cat. 3	
1.	Grain and seeds (bulk)	3.4	6.4	3.0	3.4	
2.	Grist (bulk)	6.2	6.0	3.1	2.9	-
3.	Food: raw sugar, salt and so on (bulk)	5.0	7.1	4.7	2.4	-
4.	Coal (bulk)	2.1	2.7	1.2	1.5	0.07
5.	Mineral fertilizers (bulk) (excluding potassium salt)	3.2	4.5	2.9	1.6	-
6.	Metal ore (bulk)	2.70	5.0	2.30	2.70	0.16
8.1	Bauxites (bulk)	1.35	2.5	1.15	1.35	0.1
9.	Ferroalloy (bulk)	3.3	5.4	1.8	3.6	0.13
10.	Grain and seeds (bulk) (pneumatic loader)	5.7	-	-	-	-
12.	Mineral fertilizers and other bulk cargos (in mineral material carriers) (per 1 t)	5.4	-	-	-	-
14.	Clayey soil (bulk)	2.7	3.0	2.0	1.0	
18.	Mineral fertilizers (specialized complex)	-	3.2	2.0	1.2	0.2
19.	Sunflower seeds bulk in hopper-wagons, loaded by duplex cranes or floating cranes (per 1 t)	5.7	6.2	3.6	2.6	-
21.	Mineral fertilizers and other bulk cargos (in mineral material carriers using PK client)	3.5	-	-	-	-

(III) Timber Cargo (Universal Crane Charges)

# of cargo group	Name of cargo group	Cargo transfer (USD/t)				Storage (USD/t-day
		Direct Charges	Movements inside port			
			Cat. 1	Cat. 2	Cat. 3	
1.	Round timber (unpacked)	4.56	6.0	4.4	1.6	0.19
2.	Sawn lumber, plywood (packages)	10.5	12.1	6.9	5.2	0.39

(IV) Auto Equipment (Universal Crane Charges)

# of cargo group	Name of cargo group	Cargo transfer (USD/unit)				Storage (USD/t-day
		Direct Charges	Movements inside port			
			Cat. 1	Cat. 2	Cat. 3	
1.	Motor-cars up to 1.8 t (without package)	33.8	38.2	21.7	16.5	0.91
2.	Auto equipment up to 3 t (including UAZ, PAF, micro-busses, mini-trucks, special transport) (without package)	44.2	49.1	29.1	20.1	1.09
3.	Auto equipment up to 5 t (without package)	51.6	79.3	31.3	48.0	1.87
4.	Auto equipment above 5 t (without package)	81.6	107.5	48.6	58.9	2.42

(V) Auto Equipment (Ro/Ro)

# of cargo group	Name of cargo group	Cargo transfer (USD/unit)				Storage (USD/t-day
		Direct Charges	Movements inside port			
			Cat. 1	Cat. 2	Cat. 3	
1.	Motor-cars up to 1.8 t (without package)	16.5	21.8	11.6	10.2	0.91
2.	Auto equipment up to 3 t (including UAZ, PAF, micro-busses, mini-trucks, special transport) (without package)	33.0	44.6	23.0	21.6	1.09
3.	Auto equipment up to 5 t (without package)	35.1	50.7	28.1	22.6	1.87
4.	Auto equipment above 5 t (without package)	42.1	62.5	38.1	24.4	2.42
5.	Not-self-propelled auto equipment, carried by ferry ships and loaded by trucks: trailers and so on (without package)	-	-	65.7		1.52
6.	Auto-trains (auto-truck and 1 trailer) carried by ferry ships and self-loaded.	46.8	-	-	-	-

(VI) Containers

# of cargo group	Name of cargo group	Cargo transfer (USD/container)				Storage (USD/cont./day)		
		Direct Charges	Movements inside port			Number of days of storage over norm		
			cat. 1	cat. 2	cat. 3	Up to 15 days; up to 5 days (for loaded ref. containers)	From 16 up to 30 days; from 6 up to 15 days (for loaded ref. containers)	Over 30 days; over 15 days (for loaded ref. containers)
1.	10, 20 foot loaded containers	92.4	115.5	71.5	44.0	3.3	11.0	17.6
2.	30, 40 foot loaded containers	104.5	132.0	79.2	52.8	4.0	13.2	21.12
3.	20 foot loaded ref. containers	92.4	115.5	71.5	44.0	30.96	32.25	33.54
4.	40 foot loaded ref. containers	104.5	132.0	79.2	52.8	33.96	35.38	36.79
5.1	10, 20 foot empty containers	63.7	91.0	55.9	35.1	2.13	8.78	14.04
5.2	10, 20 foot empty ref. containers	63.7	91.0	55.9	35.1	2.66	8.78	14.04
6.1	30, 40 foot empty containers	72.8	105.0	59.8	45.2	2.50	11.30	18.08
6.2	30, 40 foot empty ref. containers	72.8	105.0	59.8	45.2	3.13	11.30	18.08
7.	Stowage of containers with unloading onto quay	-	70.0	-	-			
8.	Stowage of containers on board of vessel	-	35.0	-	-			

(VII) Special Containers (Crane Charges)

# of cargo group	Name of cargo group	Cargo transfer (USD/container)				Storage (USD/ cont./day
		Direct Charges	Movements inside port			
			Cat. 1	Cat. 2	Cat. 3	
1.	Ore in special containers (special containers)	54	64	50	14	2
2.	20 foot special containers with bulk cargo (phosphates and so on)	69	105	69	36	2.84

(VIII) Ro/Ro Trailers

# of cargo group	Name of cargo group	Cargo transfer (USD/trailer)				Storage (USD/ trailer./ day
		Direct Charges	Movements inside port			
			Cat. 1	Cat. 2	Cat. 3	
1.	20 foot loaded roll-trailers	-	-	23.0	-	0.60
2.	40 foot loaded roll-trailers	-	-	24.9	-	0.66
3.	20 foot empty roll-trailers	-	-	22.2	-	0.57
4.	40 foot empty roll-trailers	-	-	24.2	-	0.64

(IX) Heavy Cargos (Loading by Floating Crane Charges)

# of cargo group	Name of cargo group	Cargo transfer (USD/unit)				Storage (USD/ t / day)
		Direct Charges	Movements inside port			
			Cat. 1	Cat. 2	Cat. 3	
2.	Heavy cargos up to 90 t (floating crane 300 t)	2,298.4	3,178.5	1,705.6	1,472.9	0.71
3.	Heavy cargos more than 90 t up to 180 t (floating crane 300 t)	2,836.6	3,911.7	2,099.5	1,812.2	0.71
4.	Heavy cargos more than 180 t up to 300 t (floating crane 300 t)	3,165.5	4,351.1	2,336.1	2,015.0	0.71
Exp.*	Heavy cargos (loading according experimental technology using floating crane of client)	4,108.0	4,882.0	3,048.0	1,834.0	0.71

Source: "Valid Rates for Loading-Unloading Works and Related Services within the Groups of Companies" of St. Petersburg Sea Port.

Note: 1.* Given rates don't include cost of client's crane work and don't include cost of towing and mooring of floating crane of client

Table I.1.3-15 Comparison of Stevedoring Service Charges between Klaipeda Port and St. Petersburg Port

Category of Cargoes	Port	Charges per Ton
1. Fertilizer	Klaipeda	2.5~4.6(US$);8.5~15.5(Litas)
	St. Petersburg	3.1~5.6(US$)
2. Food Products	Klaipeda	12.5(US$);12€/t
	St. Petersburg	7.5~14.5(US$)
3. Sawn Timber	Klaipeda	1.9US$;6.6(Litas)
	St. Petersburg	10.5(US$)
4. Raw Sugar	Klaipeda	3.8~3.7(US$);11.5~12.5(Litas)
	St. Petersburg	5.0(US$)
5. Motor Car	Klaipeda	5.3~8.8(US$);18~30(Litas)
	St. Petersburg	16.5(US$)
6. Container(20 feet:Full)	Klaipeda	41~50(US$);140~170(Litas)
	St. Petersburg	92.4(US$)
7. Container (40 feet:Full)	Klaipeda	41~68(US$);140~230(Litas)
	St. Petersburg	104.5(US$)

Note: 1.The exchange rate: (1) 3.405Litas/US$, (2) 3.452Litas/€ and (3) 1.04US$/€
2. The charges of St. Petersburg are based on the direct charges.
Source: Estimate by the JICA Study Team

As long as the charges are based on the cost for providing services, the difference of charges between two ports is assumed to reflect the difference of cost for handling cargoes**.** If the charges with a big difference between the two ports such as sawn timber, motor cars and containers reflect the cost structure, the service level of these cargoes in St. Petersburg must be higher than that of Klaipeda Port. But if their service level does not correspond to the level of charges, there are some arbitrary factors used to set up these charge levels**.** This will tend to obstruct fair competition between the two ports.

Unfortunately, the information about the stevedoring charges of other Baltic seaboard ports has not been acquired because these charges are not officially released as they are decided by negotiation between stevedoring company and shipping company.

1.3.5 Comparison of Tariff by Mode and by Route

(1) Relation between Distance and Tariff by Mode

The relation between distance and tariff by mode is shown in Table I.1.3-16 and Figure I.1.3-4. This table and figure show the indicative relation between distance and tariff by mode with regard to bulky cargo (railway: grain; truck: general cargo and ship: grain and fertilizer). The data and information to prepare the table and figure are based on the materials provided by the Lithuanian Railways Company, for railway tariff, the trucking forwarders for truck tariff and shipping forwarders for ocean tariff which are already mentioned in the previous sections (1.3.1 to 1.3.4).

The tariffs by mode are basically on the transport costs but the actual tariffs vary with economic situation such as inflation, cargo prices and negotiation between transport companies and customers and so on.

The transport distance by railway in the hinterland of the eastern Baltic Seaboard Ports ranges approximately from 200km to 3,000km. On the other hand, the distance by truck is shorter than that by railway and ranges approximately from 100km to 500km. The tariff by truck per ton is less than the railway tariff up to 500km but it is twice that of railway at 1,000km. The commodities transported by truck are mostly in the range from specialized to general cargo such as garments, processed foods (beverages and canned food, etc.), electronics products and perishables such as fresh food, vegetables and fish. These commodities need the shorter travel time and have high value added. Travel time is more important for truck customers when selecting the mode of transport. The speed of railway is relatively slower than that of trucks but railway is suitable to transport large amounts of commodity with the big capacity of the transport units (trains) and the transport cost is lower than that of trucks. The customers of railway select railway for its capacity and low level of tariff. Table I.1.3-17 and Figure I.1.3-5 show the relationship between distance and time by mode.

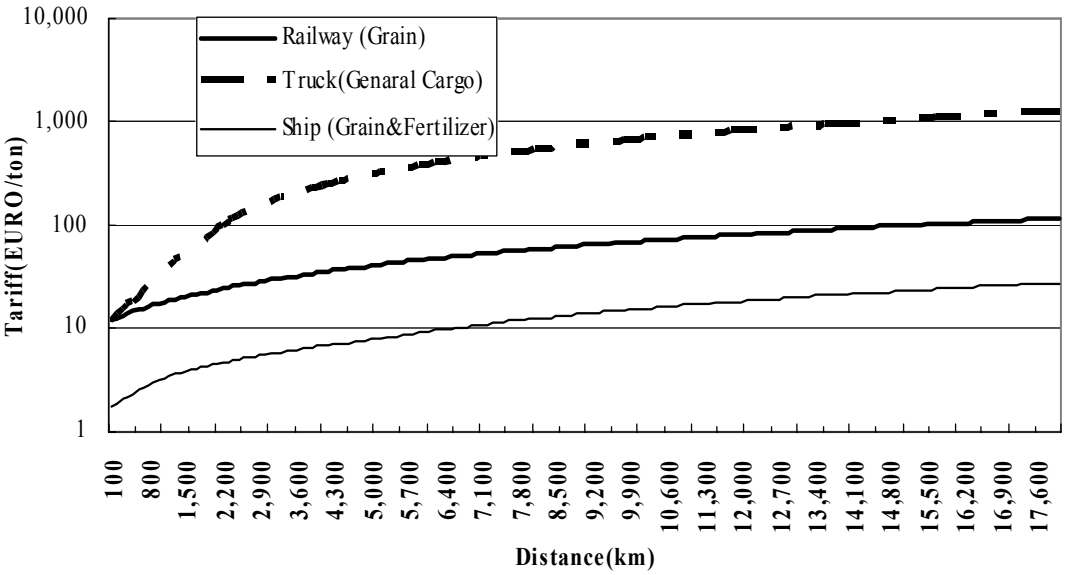


Figure I.1.3-4 Indicative Relation between Distance and Tariff by Mode

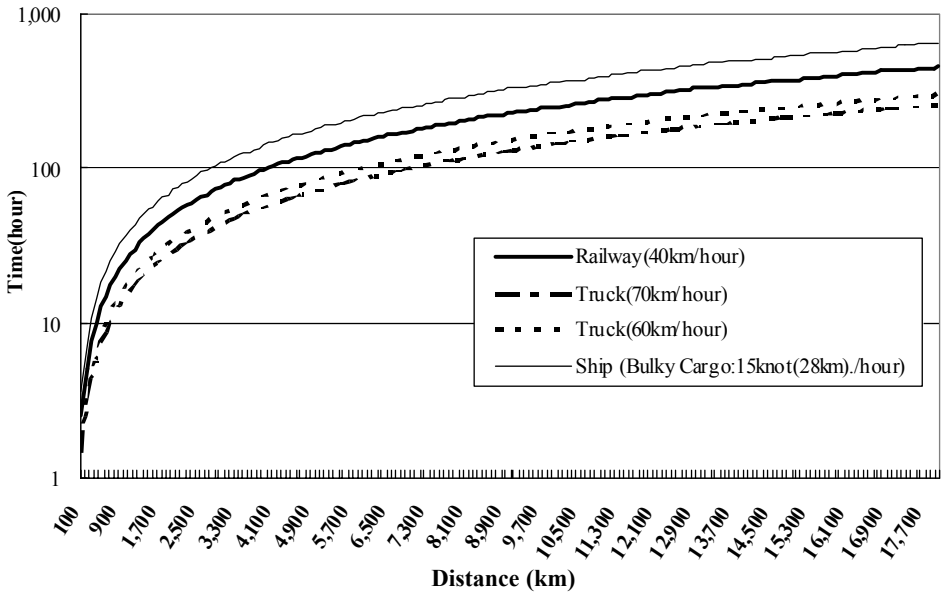


Figure I.1.3-5 Indicative Relation of Distance and Time by Mode

Table I.1.3-16 Indicative Relation between Distance and Tariff by Mode

(Unit: Euro/ton)

Distance (km)	Railway (Grain)	Truck (General Cargo)	Ship (Grain & Fertilizer)
100	12.06	12.0	1.72
500	14.35	18.1	2.33
1000	17.21	34.0	3.09
1500	20.07	51.5	3.85
2000	22.93	83.8	4.43
2500	25.79	119.7	4.97
3000	28.65	155.6	5.50
3500	31.52	191.6	6.04
4000	34.38	227.5	6.58
4500	37.24	263.4	7.11
5000	40.10	299.4	7.65
5500	42.96	335.3	8.34
6000	45.82	371.3	9.10
6500	48.68	407.2	9.86
7000	51.54	443.1	10.62
7500	54.40	479.1	11.38
8000	57.26	515.0	12.14
8500	60.12	550.9	12.89
9000	62.98	586.9	13.65
9500	65.84	622.8	14.41
10000	68.70	658.8	15.17
10500	71.57	694.7	15.93
11000	74.43	730.6	16.69
11500	77.29	766.6	17.45
12000	80.15	802.5	18.20
12500	83.01	838.4	18.96
13000	85.87	874.4	19.72
13500	88.73	910.3	20.48
14000	91.59	946.3	21.24
14500	94.45	982.2	22.00
15000	97.31	1,018.1	22.76
15500	100.17	1,054.1	23.51
16000	103.03	1,090.0	24.27
16500	105.89	1,125.9	25.03
17000	108.75	1,161.9	25.79
17500	111.62	1,197.8	26.55
18000	114.48	1,233.8	27.31

Source: Estimate by the JICA Study Team

Table I.1.3-17 Indicative Relation between Distance and Time by Mode

(Unit : Hour)

Distance (km)	Railway (40km/hour)	Truck (70km/hour)	Truck (60km/hour)	Ship (Bulky Cargo:15knot(28km)./hour)
100	2.50	1.4	1.7	3.57
500	12.50	7.1	8.3	17.86
1,000	25.00	14.3	16.7	35.71
1,500	37.50	21.4	25.0	53.57
2,000	50.00	28.6	33.3	71.43
2,500	62.50	35.7	41.7	89.29
3,000	75.00	42.9	50.0	107.14
3,500	87.50	50.0	58.3	125.00
4,000	100.00	57.1	66.7	142.86
4,500	112.50	64.3	75.0	160.71
5,000	125.00	71.4	83.3	178.57
5,500	137.50	78.6	91.7	196.43
6,000	150.00	85.7	100.0	214.29
6,500	162.50	92.9	108.3	232.14
7,000	175.00	100.0	116.7	250.00
7,500	187.50	107.1	125.0	267.86
8,000	200.00	114.3	133.3	285.71
8,500	212.50	121.4	141.7	303.57
9,000	225.00	128.6	150.0	321.43
9,500	237.50	135.7	158.3	339.29
10,000	250.00	142.9	166.7	357.14
10,500	262.50	150.0	175.0	375.00
11,000	275.00	157.1	183.3	392.86
11,500	287.50	164.3	191.7	410.71
12,000	300.00	171.4	200.0	428.57
12,500	312.50	178.6	208.3	446.43
13,000	325.00	185.7	216.7	464.29
13,500	337.50	192.9	225.0	482.14
14,000	350.00	200.0	233.3	500.00
14,500	362.50	207.1	241.7	517.86
15,000	375.00	214.3	250.0	535.71
15,500	387.50	221.4	258.3	553.57
16,000	400.00	228.6	266.7	571.43
16,500	412.50	235.7	275.0	589.29
17,000	425.00	242.9	283.3	607.14
17,500	437.50	250.0	291.7	625.00
18,000	450.00	257.1	300.0	642.86

Source: Estimate by the JICA Study Team

The tariff per ton by ship is much lower than other two modes for all ranges of distance reflecting the cheap transport cost. The speed is slowest of all modes but it is the most environmentally friendly transport means. Therefore, ship will be a more important transport means, not only for long distance shipping, but also for short haul shipping in the future.

(2) Comparison of Tariff between Hinterland and Foreland

Table I.1.3-18 shows the comparison of tariff by route between the Russian railway station (Novoyy Lipetsk) as the hinterland of the eastern Baltic Seaboard Ports and the foreland of Hamburg in Germany and Houston in Texas, USA for transport of steel bars.

The total tariffs of routes through the Russian ports of St. Petersburg and Kaliningrad are the cheapest of all routes through ports, mainly because of the abnormal tariff lowering policy of the Russian Railway. For the 2,000 GT vessel type the tariffs are 39.47US$ per ton for St. Petersburg and 41.39US$ per ton for Kaliningrad Port. For the 10,000 GT vessel type their tariffs are 58.47US$ per ton and 60.39US$ per ton respectively. In particular, the tariff on the Kaliningrad route (1,563km) is the most beneficial as a result of the tariff lowering policy in spite of being almost the same railway distance as the Klaipeda route (1,576km). The highest tariff is recorded by the Tallinn Port route as 66.91US$ per ton for the 2,000GT vessel and 85.91US$ per ton for the 10,000GT vessel.

For the 2,000GT vessel, the weighting of tariff over the total distance via Klaipeda Port route is 64.54% (railway), 7.09% (stevedoring charges) and 28.37% (ocean tariff) respectively. The weighting of the railway tariff is dominant. The weighting of port dues is only 2.09% but it is usually included in the ocean tariff. The weightings of the railway tariffs of other routes, except Russian Ports, are larger than that of that of the Klaipeda Port route. They are mostly 70%. These ports are doubly disadvantageous with respect to tariff competition compared with the two Russian ports. For the 2,000GT vessel, the weights of railway tariff on the routes through the Russian ports are 36.66% for St. Petersburg Port and 44.43% for Kaliningrad Port respectively. For 10,000GT vessels, these relative weights for the routes via the Russian ports are smaller than those of 2,000GT vessels at 24.75% and 30.45%.

Furthermore, the weights of stevedoring charges of the Russian ports are 17.73% for St. Petersburg Port and 12.08% for Kaliningrad Port. These weights are the largest of all ports. Therefore, it is obvious that the routes through the Russian ports are more advantageous than other routes via Baltic ports because of the increase of freight traffic volume created by lower railway tariffs and stevedoring companies benefit by an increase of revenue from the higher level and weight of their stevedoring charges.

On the other hand, the difference of ocean tariff among the routes through the Baltic ports, except the Russian ports, is relatively small and varies with no big difference between routes within a narrow range from 25% to 28%. Therefore, the tariff competition is definitely decided, not by ocean tariff, but by the tariff of inland transportation, including trucking.

Table I.1.3-18 Comparison of Tariff by OD Pair between Russia and Other Countries (Example of Steel Products)

Cargo	Vessel Type (GT)	Hinterland			Foreland		Distance (km)			Tariff (US$/ton)				
		Origin			Destination									
		Country	Place (Railway Station)	Port	Port	Country	Railway to Ports	Seaway between Ports	Total	Railway to Ports	Stevedoring Charges	Ocean Tariff	Total	Port Dues
Steel Bar	2,000	Russia	Novyy Lipetsk	St. Petersburg	Hamburg	Germany	1247	1,200	2,747	14.47	7.00	18.00	39.47	0.55
				Tallinn			1608		3,108	45.91	4.00	17.00	66.91	0.85
				Riga			1498		2,998	43.53	4.00	17.00	64.53	1.28
				Ventspils			1669		3,169	44.85	4.00	17.00	65.85	1.28
				Klaipeda			1576		3,076	36.40	4.00	16.00	56.40	1.18
				Kaliningrad			1563		3,063	18.39	5.00	16.00	41.39	1.06
Steel Bar	10,000	Russia	Novyy Lipetsk	St. Petersburg	Houston, Texas	USA	1247	11,000	12,247	14.47	7.00	37.00	58.47	0.45
				Tallinn			1608		12,608	45.91	4.00	36.00	85.91	0.75
				Riga			1498		12,498	43.53	4.00	36.00	83.53	1.13
				Ventspils			1669		12,669	44.85	4.00	36.00	84.85	1.13
				Klaipeda			1576		12,576	36.40	4.00	35.00	75.40	1.04
				Kaliningrad			1563		12,563	18.39	5.00	35.00	60.39	0.94

Source: 1. Baltic Shipping Company, Klaipeda
2. International Railway Transit Tariff, Marketing Division of Lithuanian Railways Company
3. Regulation of each Baltic Seaport Authority

Note: 1. Ocean tariff from the ports of Tallinn, Riga and Ventspils are assumed to be the same as 17.00 US$/ton
2. Ocean tariff from Kaliningrad Port is assumed to be the same as of Klaipeda Port.
3. Stevedoring charges for the Ports of Tallinn, Riga, Ventspils and Kaliningrad are just tentative.

1.3.6 Comprehensive Tariff Policy for Cross Border Transport

(1) Principle Directions of Study

The economic and political situation in Europe has been dramatically changed and developed. The CIS countries have been formed after the demise of the Soviet Union. The EU enlargement is being accelerated to expand to the middle, eastern and northern part of Europe. It is natural that the transport conditions in Europe have reflected its political and economic changes and developments. From the economic point of view, the big wave of reformation of the economy from a controlled economy to a free market economy has been observed in most of the countries that comprised the former Soviet Union, including the Baltic States and the CIS countries.

In this context, the study on tariff policy or systems is not focused on the proposition of a consolidated and fixed tariff system but on the proposition of basic directions for establishing a tariff system reflecting the existing dynamic, developing situation in the transport market in Europe and surrounding countries through coordination of different tariff policies among the countries of the EU and CIS, including Russia.

(2) Relation between Klaipeda and Kaliningrad

1) 2K Project

Lithuania and the Russian Federation (RF) obliged the institutions in charge to present their suggestions regarding coordination of rail tariffs of the two states seeking to increment transport flows between Klaipeda and Kaliningrad ports. In May 2001, after approval of the possibility of uniting cargo flows to the two ports into one transport corridor, the Managing Committee of the 2K Project was founded. The concept of the project was approved at the 1st cargo owners' conference held in Moscow on October 25, 2001, which decided to develop tariff policy and incorporate 2K into international European transport corridors. This document lay as a base for the project of the inter-governmental agreement.

On May 31 - June 1, 2002 the 2nd conference of cargo owners was held in Klaipeda, where the vice-minister of Transport of the Russian Federation, presented amendments to the project of an inter-governmental agreement regarding the 2K Project. The Lithuanian state institutions analyzed the amendments and in June 2002 returned them to the Ministry of Transport of the Russian Federation. Since then no official information about this inter-governmental agreement has been received from the Russian side.

The first concrete joint project within the 2K Project is a container shuttle train to Moscow initiated by Klaipeda and Kaliningrad ports and shipping lines. It was reported that Lithuanian, Russian and Belarusian railways have already granted acceptable tariffs. It was reported that long negotiations between the Russian and Lithuanian delegations about the harmonization of tariffs, which is a task of the Federal Energy Commission of Russia, have brought the first results. It is expected that the coordination of cargo flows and integration into new transport corridors will be realized.

The KSSA is considering the implementation of similar transportation arrangements for a container-contrailer train, “Viking”, between other ports of the Baltic and the Black Seas. The 2K Project is expected to accelerate and expand a

container-contrailer train to Central Asia and the region of Western China via Druzba railway junction.

2) Status of Klaipeda in Enlargement of EU

The EU membership of Lithuania in 2004 will considerably influence, not only transport activities, but also other socio-economic activities. In the transport field, the influence that will extend to the road transportation between the northern part of Europe from Lithuania and the southern part from Poland is expected to be enormous. For example, border checks will be simplified and checking time and cost will be saved, which could eventually reduce the tariff level. With regard to railway tariff, the Lithuanian Railways Company needs to be prepared to revise the present basic tariff system after 2004 by taking account of the EU pricing policy. Furthermore the Lithuanian Railways needs to be reformed by separating the infrastructure and operation (vertical separation) in the near future and the cost accounting system will be changed. Then its tariff system will be reviewed again.

(3) Russian Tariff Policy

1) Function of FEC (Federal Energy Commission)

All kinds of tariffs with regard to industries consuming energy are controlled by the Federal Energy Commission of the Russian Federation (FEC Russia). The railway tariffs for passenger and freight are also controlled by the FEC. The Federal Energy Commission of the Russian Federation (FEC Russia) regulates natural monopolies in the fuel and energy sector at the Federal level. The Commission has been an independent Government Agency since November 1995. The contents of FEC regulation with regard to economic activities are as follows:

- Crude oil and oil-products transportation by pipelines;
- Gas transportation by pipelines; and
- Federal wholesale energy market activities, and electricity and heat transmission (Commission's authority in this field is defined by a separate Federal law).

In addition to price and tariff regulation, the Russian FEC is responsible for the following activities in this field:

- Establishment and registration of natural monopolies in the Fuel and Energy sector;
- Review of disputes, between regional energy commissions, customers, and utilities, upon their request, and, based on the results of review, issuance of mandatory decisions.

2) Basic Tariff Policy

The Russian Ministry of Railways (MPS), which regulates the rail system and operates most of it, is 100 percent state-owned and develops its own budget and policies and is responsible for coordinating railway operations, determining rail policy and the legal framework governing railway operations, and planning and allocating investments. The MPS defines technical standards, sets tariffs, collects and apportions revenue among the regional railways, and sets train schedules.

The Russian Government Resolution of May 1998 presented a new concept for the restructuring of railways. The concept provides for a new pricing policy with flexible and reduced tariffs, privatization of businesses such as locomotive and car repair shops and establishment of special rail passenger companies in order to improve service. At the same time the concept confirmed that the railways were a natural monopoly with direct control from the state.

As part of the restructuring concept, a new tariff policy and encouragement of competition in the railway sector may reduce transportation costs. Competition would be possible primarily through different tariff terms offered by different freight and passenger companies on the same railroads.

A new tariff system is expected to introduce the concept of flexible commercial tariffs as opposed to fixed government controlled rates. The liberalization of tariffs should not result in higher rates since the existing tariffs are already too high and were claimed to be one of the main reasons for the declining freight and passenger traffic in recent years. However, according to Ministry officials, freight tariffs increased only by 1.02 times. The Ministry of Railways has refrained from increasing tariffs in order to attract more business to railroads, and to stimulate production and freight transfers.

3) International Railway Transit Tariff

The Russian Railways organisation (RZD) is a member of the MTT (International Railway Transit Tariff) according to *Agreement on International Goods Transport by Rail (SMGS)* and *Uniform Rules Concerning the Contract for International Carriage of Goods by Rail (CIM)* or according to other International Law on transport. Therefore, the international transit tariff of the Russian Railway is regulated by the MTT.

4) Railway Reduction Policy

As already mentioned, the Russian Railways decided to reduce the freight tariff to the Russian Seaports (St. Petersburg and Kaliningrad) in 2001. However, the tariff to the other eastern Baltic Seaboard ports, including Klaipeda Port, has remained the same as before.

The background of the transit tariff reduction policy of the Russian Railway is that it basically originated from international trade imbalance. It is reported, with regard to the trade and financial situation of the Russian Government, as follows:

- Construction of new Russian ports in the Baltic Seaboard began in conditions when privatization in Russia was underway and the country simply started running out of money for economic reforms.
- Russia's annual revenues from transit now account for less than one billion US dollars while in the 1980s Iranian transit alone brought to the Soviet Union budget over 5 billion US dollars in revenues.
- Transit costs of Russian foreign trade shipments through foreign ports are estimated at 1.2 billion US dollars a year.
- Today Russia loses up to 1.5 billion US dollars a year from transportation of cargo via ports in Ventspils, Riga and Odessa.

- Foreign currency losses by Russia from transit through the Straits of Gibraltar, the Danish straits of Skagerrak, Kattegatt, Oresund, Turkish straits of Bosphorus and the Dardanelles, the Suez Canal and the Panama Canal make up about one billion US dollars annually.

These conditions are considered to be the reasons or background for the government decision to turn cargo flows to Russian ports and overland transport corridors of *North-South* and *Transsib (Trans Siberian Route)*.

5) Railway Tariff Unification Policy

In August, 2003, the Railways Ministry announced that the latest stage of railway-tariff unification had been completed. The new railway freight-transport price list came into force on August 1. The problem has been that freight transport to, for example, ports in the Baltic States cost Russian companies three to four times more than to Russian ports. That leads to overloading at Russian ports, and companies have to wait in line to get goods through to them. Tariff unification would mitigate the burden on Russian ports by diverting some goods to other Baltic Seaboard ports. However, the Railways Ministry has kept the differential in place with its latest tariff plan. The first stage of the unification program involved synchronizing internal and import-export tariffs for transport to Russian ports. Then there is still the difference in tariffs between the routes to Russian ports and the routes to other Baltic ports. The tariff unification policy will equalize the conditions for competition by all Baltic ports only when the tariffs have been unified on all routes to Baltic ports.

(4) Viking Project

As long as the tariff-lowering policy by the Russian Railway continues, the traffic diverted from Klaipeda Port to two Russian ports (Kaliningrad Port and St. Petersburg Port) will not be recovered in the near future. In contrast to this negative situation, the Viking Project is noticeable as a challenging project to develop potential freight traffic demands to and from the central CIS/Asian countries.

In 2002, Lithuanian, Belarus and Ukraine railways together with their countries' forwarders and stevedoring companies formulated a joint project of a shuttle train service named "Viking". This train carries various types of cargo in 20 feet/40 feet, special and reefer containers and wagons. It also accommodates auto-trains and other vehicles. The route of the train is Odessa - Berezhest - Slovechno - Gudagoy - Kena - Klaipeda. It is possible to load and unload cargo at intermediate stations. The operators of the train include Lietuvos Gelezinkeliai in Lithuania, the Belarusian National Transport Forwarding Company, *Belintertrans* in Belarus, the Ukrainian State Transport Service Center *Liski* in Ukraine and the biggest stevedoring company, *KLASCO* in Klaipeda Port. The train runs once a week. With the cargo demand turning up, train service will be more frequent. Currently it takes 68 hours to cover the distance from Odessa (Usatovo station) to Klaipeda (Draugyste station) and from (Draugyste station) to Odessa (Usatovo station) it takes 72 hours.

The Viking's tariffs are shown as follows.

Table I.1.3-19 Service Package Price of Shuttle Train (Viking Project)

(Unit: US$/Unit)

Type of Container	Size	Loaded	Empty
Container	20 feet	465	240
	40 feet	705	350
Reefer	20 feet	555	275
	40 feet	860	415
Tank Container	20 feet	570	290
	40 feet	895	435
Trailer		430	430

Source: The Lithuanian Railways Company
Note: Price includes railway tariff, customs duties, freight,
declaration tax, reloading tax at the port and transport drivers for trailers.

The prices for loaded containers range from 465 to 570 US$/TEU for 20 feet and from 705 to 895 US$/TEU for 40 feet respectively. The tariff for loaded trailers is 430 US$/TEU including cargo handling costs in Klaipeda Port while the tariff for trucks is more expensive than train. It is reported that, before starting the Viking Project the railway tariff was higher than that of trucks. There still remain truck cargo demands, but it is expected that the traffic volume transported by the shuttle train will exceed that of trucks and will make more profit for the Lithuanian Railways in the near future.

It should be stressed that this Project will be a trigger to accelerate the freight traffic demand in the CIS countries to Klaipeda Port.

The train will be able to transport not only general and refrigerated cargo in tanks and containers, but also loaded road vehicles. Forwarders are interested in using the new train because of the attractive price, the safe, fast and convenient trip and ecological transportation meeting the requirements of EU standards. It is reported by some study that the trip of one accompanied trailer from Ilychevsk up to Klaipeda costs about 1,000 dollars, whereas transportation on Viking will be twice as cheap. Stevedores of Odessa and Ilychevsk ports offered up to 50% discounts on handling, and Klaipeda Stevedoring Company (KLASCO) also promised to revise its rates. Forwarders using this train will have the possibility of paying for the services both in the Ukraine and in Lithuania.

It has been reported that the Viking shuttle train could transport cargoes in 50 hours instead of the 68 planned and it is possible to cover the distance between Ilychevsk and Klaipeda in 46 hours. Transportation on the Viking shuttle gratin is assumed to be safer as the risk of accidents and environmental pollution is lower. It is expected that the Viking will run from the Ukraine to Lithuania every week. It was reported that the forwarding director of the Lithuanian Railways, Rimvydas Valys, said that customs officers and border police have helped to save some time by significantly simplifying the border crossing procedures. In his opinion, coordinating this project with these institutions in Lithuania, Ukraine and Belarus was no less important than working out transportation technologies and specialized schedules. It is reported that there is still some reserve for time saving.

It is reported that there is a drastic growth of container transportation in the Baltic Sea region. In 2002 the number of containers in St. Petersburg increased by 21%, in Riga, 26%, in Kaliningrad, 30% and in Klaipeda, 40% respectively. This year the growth

rate is still higher. St. Petersburg has almost attained its capacity. A new container port is planned in Ust Luga. There is also an idea to construct a new port in Kronstadt. It seems that the time has come for Klaipeda also to consider new capacities for container handling, for in a year or two the existing facilities will be no longer sufficient.

It is reported that the Viking calls at the Paneriu Terminals near Vilnius to take some cargo. Therefore, it is expected that the interest in this train will continue to grow. In the future, the cargo flow from Turkey via Ukraine, Belarus and Lithuania to Southern Sweden is expected to grow. The KSSA has been working on the *project of a container train Klaipeda-Kaliningrad-Moscow.* The Federal Energy Commission (FEC) of Russia has granted a favorable tariff for this route that should guarantee the success of this project.

It was expected that in 2003 the eastern Baltic Seaboard ports will handle more than 1 million TEU. In 2010, about 3 - 4 million TEU is expected to be handled. Therefore, it is important to develop not only port capacities, but also the hinterland infrastructure. At present nearly all containers from Klaipeda port are transported by road. Undoubtedly, it is the most convenient way of delivery for Lithuanian consignees. However, due to the tariff reduction policy of the Russian Railways, most containers are transported by trucks by road to Moscow or even to the countries of Central Asia.

(5) Tariff Policy of EU

1) Fair Pricing Policy

As Lithuania will be a member of the EU in 2004, the pricing policy of the EU could not be disregarded for rational tariff setting for each mode of Lithuanian transport. The "Survey of EU Transport Pricing Policy" (Working Paper No.1, PHARE DG IA B2, European Commission, Ministry of Transport of Lithuania, April Paper 1998) provides an EU transport pricing policy, with a primary focus on infrastructure costs. The paper considers the general principles of the EU Commission's transport pricing policy, as well as specific legislation adopted by the EU member states concerning transport taxation, with a specific focus on infrastructure charges. The Lithuanian transport pricing policy in future is confronted with the dual objectives of securing cost recovery on the one hand and aiming at economic efficiency on the other hand. These two objectives do not necessarily coincide. However, this dilemma confronts every transport pricing policy and has been dealt with in an EU context.

The general pricing principles are considered to be as follows:

- Transport users should pay the full marginal costs, internal as well as external, of the transport services they use (external costs should be internalized). External costs include uncovered accident costs, uncovered environmental costs, and congestion costs.
- Transport prices should be better aligned with the true costs of the transport and therefore be differentiated according to times, space and mode. In principle, total transport costs should be recovered in the long run.

2) Pricing Policy by Mode

The following are the contents of pricing policy by mode which are partially cited from the Report "Survey of EU Transport Pricing Policy" (Working Paper No.1, PHARE DG IA B2, European Commission, Ministry of Transport of Lithuania, April Paper 1998) mentioned above.

[Railway]

The general pricing principles mentioned above are also applied to railway infrastructure pricing.

Although these principles apply as objectives in each mode in the EU, the implementation is conditional on the accomplishment of the liberalization process in each mode of transport. In particular, the railway sector in this respect is far behind the other modes of transport, and the EU regulation so far has concentrated on establishing the conditions for competition in the railway sector in general terms with the pricing policy.

In the Green Paper on fair and efficient pricing, it is noted that the railway sector in the EU appears to have a lower degree of cost recovery of infrastructure costs than the road sector. However, it should be kept in mind, that railways undertake public service obligations, the costs of which should not be included in the cost recovery measure. In general, the Commission does not aim at full cost recovery in the short run and focuses instead on developing methods for homogeneous calculations of rail infrastructure costs.

[Road]

The infrastructure charging on road is a very important pricing policy, because the operation and maintenance for vehicles and infrastructure are usually conducted by different subjects. In other words, the ownership is different between them. The roads as infrastructure are owned by the Government.

The Green Paper states the following general principles for infrastructure charging:

- The system should link charges to actual costs at the level of the individual user (i.e. marginal cost pricing).
- In total, infrastructure charges should recover aggregate infrastructure costs.
- Transparency.

Applying the principle of marginal cost pricing and the principle of cost recovery will not lead to the same kind and level of taxes or charges. The cost recovery taxes will be too high, compared to the marginal cost pricing, leading to most economic efficient use of resources. Similarly, marginal cost pricing will not provide sufficient cost recovery. The question of combining the two principles has not yet been solved by the Commission.

Concerning cost recovery, the Green Paper emphasizes that in cases when investments in infrastructure are made for non-transport related reasons, such as regional balance or other distributional reasons, such costs should not be fully passed on to the transport users. The same goes for past investments which do not meet present day transport demands.

Congestion is a large and increasing problem in the EU, especially on Central European roads. In the Green Paper calculations of cost recovery of roads have been made. The result is that comparing payments of taxes and charges and the costs of infrastructure there is more than full cost recovery. However, when external costs are included on the cost side, there is not full cost recovery. Moreover, external costs, including congestion, vary greatly according to time, space and modes of transport.

The last principle of transparency states that the system of charging for infrastructure should be clear to citizens and business. This means that the origins of costs and the system of imposing these costs on the transport user should be clear. As well, it should be clear whenever subsidies are given to transport and on what grounds.

[Ports]

In general, the EU aims at the same basic pricing principles as described above for all modes. This means that costs of transport, as closely as possible, should mirror the true costs, i.e. the internal and external costs of transport. However, EU policy has until now been primarily focused at road transport and partly at rail transport, whereas, until recently, there has not been a pricing policy established for ports.

However, at the end of December 1997 the Commission launched a "Green Paper on Ports". The Green Paper launched the first Europe-wide debate on future measures to improve the efficiency of ports and their integration into the Union's transport network. The Green Paper was not available in full text at the time of finishing this report, but a summary was available on the Internet (Brussels December 10, 1997.)

The Green Paper is the first discussion paper on sea ports and maritime infrastructure published by the Commission and it will be followed up at a conference next year. The Green Paper intends to launch a wide ranging debate on individual port issues and possible future policies which should help to increase efficiency, improve port and maritime infrastructure by integrating ports into the municipal transport system and meet the Treaty obligations of free and fair competition in the port sector.

The Green Paper envisages various ways of improving port infrastructure, increasing the efficiency of ports and their integration into the Union's transport network (Trans European Transport Network -TEN).

The Green Paper states that the enlargement of the EU emphasizes the need to extend the TEN networks to neighboring countries in order to integrate the EU network with that of the accession countries. The Commission is working on identifying projects of mutual interest which could be developed with help from Union funds.

The ownership, organization and administration of ports varies greatly between member states, and the Commission is therefore looking at ways of pricing port infrastructures to ensure that costs of port services and facilitates are paid by the port users, in accordance with the principles of fair and efficient pricing stated in the Green Paper on this subject. The Commission is considering a proposal to introduce a principle of recovering the costs of new investments, operating and

external costs to ensure demand driven investments and fair competition between ports. Ports in less developed and peripheral areas will, however, be treated with special concern.

Concerning the present situation in European harbors, the European Sea Ports Organization, ESTO, in co-operation with the EU Commission has produced an overview of the financing of investments, operational costs and maintenance of the most important European ports: the "Report of an inquiry into the current situation in the major Community seaports", revised version 1996. It is clear from this report, that although, in principle, most ports take a business approach in their activities, there are substantial differences in the structure and financing of investments and other costs.

(6) Tariff Unification Policy of TRACECA Project

It is planned that the international transit tariff system to be unified on the TRACECA route through the Project of "UNIFIED POLICY ON TRANSIT FEES AND TARIFFS" by TRACECA supported by the EU - TACIS (Technical Assistance to the Southern Republics of the CIS), Trade and Transport Sectors. This project is a very good example and suggestive for the establishment of a comprehensive tariff policy in European transportation. The contents of the background, rationale and objectives, and result of this project in the TOR are introduced as follows:

1) Background

During May 1993, a conference organized by the European Commission was held in Brussels at which the states of Armenia, Azerbaijan, Georgia, Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan and Tajikistan were represented. The objectives of the Conference were:

- To promote co-operation among the participating states in all matters pertaining to the development of trade and transport in the region.
- To promote the Central Asian-Trans-Caucasian-Europe transport corridor.
- To identify problems and deficiencies in the regional trade and transport systems.
- To define in terms of content and timing a Technical Assistance Program to be financed by the EU.

From this conference the TRACECA (Transport Corridor Europe Caucasus Central Asia) program was created as a component of the TACIS interstate program. On September 7-8, 1998, delegations of 32 countries and 13 international organizations gathered in Baku for the International TRACECA Conference. Nine Presidents and one Prime Minister, Ministers, Ambassadors and heads of delegations discussed the importance of the TRACECA program as the shortest way of integration into the international economic structures, as a guarantee of political and economic stability and also as a means to improve regional co-operation. During this Conference, 12 countries: Azerbaijan Republic, the Republic of Moldova, the Republic of Armenia, Romania, the Republic of Bulgaria, the Republic of Tajikistan, Georgia, the Turkish Republic, the Republic of Kazakhstan, the Republic of Uzbekistan, the Kyrgyz Republic and Ukraine signed a Multi-Lateral Agreement (MLA) on International Transport in the

transport corridor EUROPE-Caucasus-Central Asia (and four supplementary technical annexes on customs, road, maritime and rail transport), which has been ratified by 10 countries.

2) Rationale and Objectives of the Project

Situation with Road Transport Transit Fees

Road transport transit fees of various types are imposed in all TRACECA states. As in all countries, there is some justification for imposing user charges on all road vehicles based on the amount of damage they are calculated to impose on roads and bridges. In the case of heavy trucks a transit fee charge is levied on a number of factors that may include the gross weight of the vehicle, the number and type of axles and the distance between the axles. The issue of transit fees imposed on goods vehicles, in particular, is a very contentious one and those TRACECA states that have many borders to cross to reach their markets feel disadvantaged by them. There have also been many reported incidents of the arbitrary imposition and charging of "transit fees" by some regional authorities. Such charges are not authorized by central governments and the charges imposed are not justified or uniformly applied. There is also seen to be a general lack of transparency in the economic and legal basis for some transit fees that are perceived by some operators to be rather like a ransom demand.

If excessive or arbitrary fees are imposed, unrelated to any service provided by the transit country, then the transporter and trader may seek alternative routes and markets for their goods that are more certain for their business. They are not in business to take unnecessary risks or to enter into contracts that have an undetermined cost base. If they succeed in doing this then the regional economy of the transit state, by-passed in this way, suffers to the detriment of all of the people in the region, and the regional economic activity is suffocated.

Situation with Rail Transit Tariff

Rail transit tariffs are set according to the International Transit Tariff (MTT) scale, which is periodically adjusted (a review was held in November 2000 for tariffs to be applied in 2001), but which is subject to a review twice each year on the level of discounts that may be applied. This is done within the Organization of Co-operation of Railways (OCJD) forums. The OCJD is an organization that is not unlike the International Union of Railways (UIC). The OCJD is involved in regrouping railway systems from the former eastern block. The principles of the transit scales are thought to be based on a system dating from the former Soviet central planning era that may no longer have any relevance to actual operating costs.

However, it is known that some rail companies have already refined and revised their costing systems on a more realistic basis and can tell the level of income needed to cover the repair and replacement of vital infrastructure. It is not known to what extent utilization and availability considerations are taken into account when deciding whether or not to accept particular traffic, and what line capacity issue is considered. The MTT scales allow for heavy discounts on published prices, which may compensate for the apparent unrealistic level at which the rates are first set. This discount system allows for some commercial flexibility, but the process of achieving discounts is time consuming and convoluted. For rail rates on

bulk commodities such as oil and minerals, such delays may be acceptable within the contract negotiations. For consumer goods and high value or perishable products, the trader will seek an early answer on availability and price. Failing a quick response the trader may look elsewhere. It is also thought, but not proven, that high rail transit tariffs may cross-subsidize domestic rail traffic.

It may be more realistic to consider an approach where rail transport operations are organized in such a way as to develop their activity according to competitive principles. Such a system would envisage that prices were established freely on the market, based on the availability and utilization of rolling stock and other equipment, and with an allowance for infrastructure cost recovery. It may also be considered that tariffs and taxes should be based ***at minimum cost recovery levels***, looking towards a base cost set at direct cost level with the addition of a small percentage cost addition. In brief, the ***"Cost Plus" basis***. There are many options available.

A previous TRACECA project attempted to set up a completely new transit methodology, but it was found that the MTT scale is so deeply implanted in the sales and marketing philosophy of the whole region, that it proved difficult to convince the parties concerned that such a plan was practical. It is felt that the level of expertise in some local rail management on this subject is not well developed and attitudes could be difficult to change.

Situation with Port Tariffs and Shipping Rates

Some of the TRACECA port tariffs are reported to be among the highest in the world (disbursement, stevedoring, etc.). Likewise maritime shipping rates in the region are reported to be high and seen to be unrealistic in terms of the distance and service provided. In some cases the handling cost per ton can be higher than the rail cost to reach the Port from many hundreds of kilometres away. This may be a volume related issue but one that needs to be analyzed. Such seemingly un-justified high costs contribute to the factors that restrict the growth of traffic volumes, cause traders to look for alternative routes and lead to a lack of traffic with the corresponding reduction in revenue for the operators and high unit cost of both road and rail feeder services.

Overall Objective

The overall objective of this project is to find practical solutions to local problems that will enable the whole TRACECA route from the Chinese border to the borders of West European states, to be seen as commercially competitive and attractive to all traders, in both time and cost. The TRACECA route needs to be seen as one that traders will use from choice as it is the shortest route to Black Sea ports, and provides known cost and better security than the alternative routes available.

3) Results

The expected final results of the project will be a more transparent tariff and transit fee structure and the removal of illegal, non-physical barriers to effective international trade and transport services within the TRACECA region. This should ultimately result in a reduction in transport costs and unnecessary delays, notably for road carriers. In addition the traders will have a route of predetermined

cost which is vital for sustainable international transport movements. It must be appreciated that full delivery of these benefits cannot be guaranteed during the project timescale and that on-going monitoring and evaluation by the IGC (Intergovernmental Commission) and the National Commissions will be required over a number of years following completion of the project tasks.

(7) Basic Directions towards Comprehensive Tariff Policy

1) Mitigation of Obstacles

There are many obstacles to be mitigated to realize a comprehensive and harmonized tariff policy. The main obstacles are considered to be as follows:

- Cross Border Barriers

  As already mentioned in the section on tariff structure by mode, the cross border barriers are one of the most time and cost consuming obstacles for smooth inland traffic flow. The simplification and harmonization of procedures at the borders are essential for smooth traffic flow and effective function of tariff policy. Through the EU enlargement, the problems of border barriers will be removed in the EU member countries but will still remain as the headache problems for the non EU member countries, including the CIS countries. The progress of the implementation of the EU TRACECA project "Harmonization of Border Crossing Procedures" should be noted. This project has been working in the CARs (The Central Asian Republics) and Azerbaijan in order to develop recommendations to both harmonize and simplify border procedures. These recommendations are being discussed with their Border Working Groups that include major representation by Customs. It should be noted that the recommended procedures cover all the activities at the border, rather than solely the Customs operations.

- Unification of Railway Gauge

  Also, as already pointed out in the previous section on railway tariff structure, the north-south railway traffic flow has been retarded by taking too much time to transfer the cargoes to/from wagons between different gauges. The cargoes between the north and the south (e.g. between Lithuania and Poland) are mainly carried by truck. The waste of energy resources from the less effective fuel consumption of trucks than railway and ship has caused serious environmental problems. It will take time to complete the unification of railway gauge. The unification of railway gauge will accelerate the modal shift from truck to railway and ship and the tariff structure will reflect the more economical cost.

- Exclusion of Non Economical Elements from Tariff Policy

  Pricing or decision on tariff levels on the basis of non economical factors such as political judgment has a serious negative influence on traffic flow: (i) port congestion by converting traffic volume from higher tariff railway routes to other lower tariff railway routes and (ii) waste of resources which have been invested in port facilities because of over capacity resulting from the decrease in traffic volume from the shift from one port route to another port route. The increase of cargo turnover of the two Russian ports and the decrease of other Baltic ports in 2001 are examples of this phenomenon. It has already been

pointed out in the previous section that the tariff reduction of the Russian Railways was caused by the financial problems originating from addressing the trade imbalance by the Russian Government.

2) Cost Based Tariff Policy

The tariff level should be based on the cost. The problem is how to identify the component of cost and how to estimate or calculate the cost. Pricing, which means the decision on tariff levels, is closely related to costing as the basis of pricing. Therefore, it is necessary to establish a costing methodology as the first priority. Currently, costing systems and methodologies are different by country and by mode. As already mentioned, the pricing policy of the EU is based on "marginal costing" methodology but it is not clear how to figure out the "marginal cost". There are many studies with regards to "marginal cost". "Marginal" usually means increase of cost from production of the transport service. Then the next problem is how to define the unit of product of transport service. The unit of transport service has been defined in many ways. For example, "ton/passenger", "ton kilometer or passenger kilometer", "wagon kilometer or coach kilometer" and "train kilometer" are considered to be the units of product for railway transportation in the short term. In long term, increase of investment cost for infrastructure such as track for railway, road for trucks and berths for ships are assumed to be marginal costs. There are also problems with definition and calculation methods for the "average cost" and the "total cost" as the indicators for other pricing principles. The pricing principles will be established on these costing methodologies and the actual tariff levels will be decided depending on the market situation.

3) Market Oriented Tariff Policy

Even if the costing methodology and pricing principles could be established, the actual tariff level may not be decided using the market mechanism. The market mechanism means that the tariff is decided by the rational relationship between the demand (customers) and the supply (carriers as providers of transport service). But it is a fact that there are many kinds of constraint on the functioning of market mechanisms such as (i) arbitrary tariff setting on the basis of cross-subsidization to compensate for the deficits of some lines, (ii) market failure caused by the lack of a fair and free market because of the form of management of the transport services which are usually operated by government as state owned management entities and so on.

4) Refraining from Monopoly Price Setting

One of the main factors to interrupt the effective functioning of the market mechanism is monopoly. Pricing in a monopolistic market such as railway transportation has a tendency to generate monopolistic profits by setting an extremely high tariff unrelated to the corresponding cost. This kind of pricing will lead to a distortion of the effective market mechanism and will generate a waste of resources. On the contrary, an arbitrary low tariff could be set up. The railway transport service owned by the Russian Government is mostly monopolized. The tariff reduction policy conducted by the Russian Railways is one of the examples of monopolistic tariff setting.

5) Environmentally Friendly Tariff System (Internalization of External Diseconomy)

The efficiency in fuel consumption of vehicles is the lowest of all transport modes while that of ships is the highest followed by railway. The internalization of the external diseconomy of air pollution from vehicles will lead to higher tariff levels which, in turn, will result in the road traffic diverting from road to ship or railway in the future.

It is expected that the tariff system could be restructured and an environmentally friendly tariff system formed using the following factors for improvement of transport system.

- Acceleration of Short Sea Transport

  The EU Commission presented its "White Paper on European Transport Policy for 2010 in Sep. 2001: time to decide". Short Sea Shipping is expected to play a key role in reaching the targets in this paper and can help curb the 50 % increase in heavy goods vehicle traffic forecast in the Paper, help rebalance the modal split, bypass land bottlenecks and provide a safe and sustainable transport mode.

  Short Sea Shipping is reported to have performed 41% of all tonne-kilometres in Europe while the share of road transport is 43%. Its growth rate is above that of European Union industrial production and its tonne-kilometre performance grew by up to 38% in the 1990's as compared to 40% growth in road transport (Source: EU Energy and Transport in Figures: Statistical Pocketbook 2002.)

  Futhermore, the European Shortsea Network is known as a co-operation between all national shortsea promotion centres. The main objective of the European Shortsea Network (ESN) is to promote "shortsea" in the broadest sense of the word on a European level. The definition of the European Commission will be used.

- Acceleration of Container Transport

  The intermodal transportation system by using containers is known as the most economical to save time and cost both for transporting and cargo handling. Recently, containerization in inland logistics has been progressing in various part of Europe as follows:

  - Viking projects (Container Shuttle Service between Odessa Port in Ukraine and Klaipeda Port in Lithuania);
  - Qualitynet of Intercontainer-Interfrigo (ICF) with Metz-Sablon in the north-east of France as a master hub linking up the Rhine-Scheldt delta ports with the rest of Western-Europe. Shuttle trains from the main ports carrying containers for many destinations arrive in Metz-Sablon on a regular basis. The wagon groups are exchanged between trains at Metz and are combined to form new single-destination shuttle trains heading for the distant hinterland of the Rhine-Scheldt delta ports;
  - Dry Port Muizen (between Antwerp and Brussels) serves as a master hub within the North European Network (NEN), a combined container network

for short-distance container transport jointly operated by the French company CNC (Compagnie Nouvelle de Conteneurs), IFB (a subsidiary of the Belgian railway company NMBS), ERS and Terminal Athus;

- Combi 24 is an extensive intermodal shuttle train network covering the whole of France via an inland hub in Paris and with extensions to Zeebrugge and Antwerp.

In particular, the tariff structure will be changed by containerization. It is expected that the tariff category and calculation system for general cargo will be simplified by transfer of types of cargo, especially from wagon or trailer, to container. There are many

6) Coordination of Tariff Policy between EU and CIS

Finally it should be stressed that the the coordination of tariff policy between the EU countries and the CIS countries, which are forming the two major groups of countries in the European continent, is indispensable for a comprehensive tariff policy. These two groups have been developed in different ways, not only in economic systems, but also in political systems. Therefore, the tariff systems of these groups are assumed to be different more or less by reflecting their economic systems. The economic systems of the CIS countries have been progressing towards the free economy but there are still some gaps in the degree of freedom of economy comparing with that of the EU countries. Then the basic directions towards a comprehensive tariff policy mentioned above cannot be adopted equally in the CIS countries regardless of some difference of economic system between the two groups. The coordination of tariff policies between them is necessary. The following are major directions for coordination of tariff policy between the two groups of countries.

- Recommend Russia to be a Member of WTO

  The Russian tariff lowering policy was possible because Russia is not a member of WTO. Therefore, Lithuania as the most influenced country in the collapse of its cargo turnover at the seaport of Klaipeda and other Baltic countries, such as Latvia and Estonia, should persuade the Russian Government to be a member of WTO. This could be a precondition for control or monitoring of the arbitrary Russian tariff policy. The membership of WTO is 146 countries at April 2003. Three Baltic states have already become members of WTO. Lithuania became a member on May 31, 2001 and all fifteen EU member States are WTO members.

- Review of Transport Market

  As already mentioned above, the tariff system reflects the market situation of the transport industry. Therefore, a review of the transport market by mode for the two groups is necessary. It is necessary to establish a tariff system corresponding with the difference of market mechanisms in the short term. However, efforts must be made to minimize the difference between the tariff systems of the two groups.

- Review of Costing

  Methodology and concept with regard to costing are assumed to be basically different between the two groups of countries by reflecting the economic

systems. The costing methodology of the EU countries is assumed to be more market oriented than that of the CIS countries. Therefore, it is necessary to review the difference in costing methodology and concept between two groups of countries.

- Coordination of Tariff Policy by Mode

  As already mentioned with regard to the tariff unification project on the TARCECA route, the transit tariff policies by mode are different from each other. The EU has been proposing a pricing policy by mode but has no common policy for transit tariff by mode. Therefore, a detailed study of the tariff system and policy for the two groups of countries is indispensable. Coordination of tariff policy between the two groups of countries could be executed more confidently after the study.

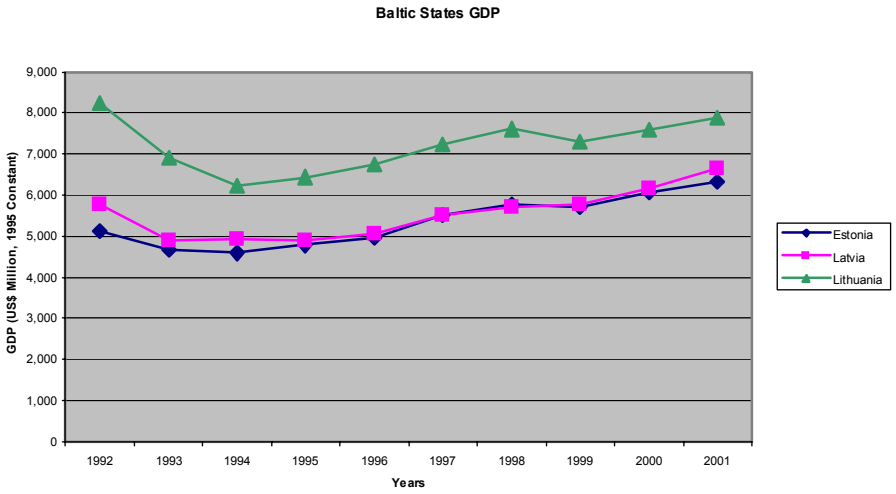
1.4 Economic and Industrial Development

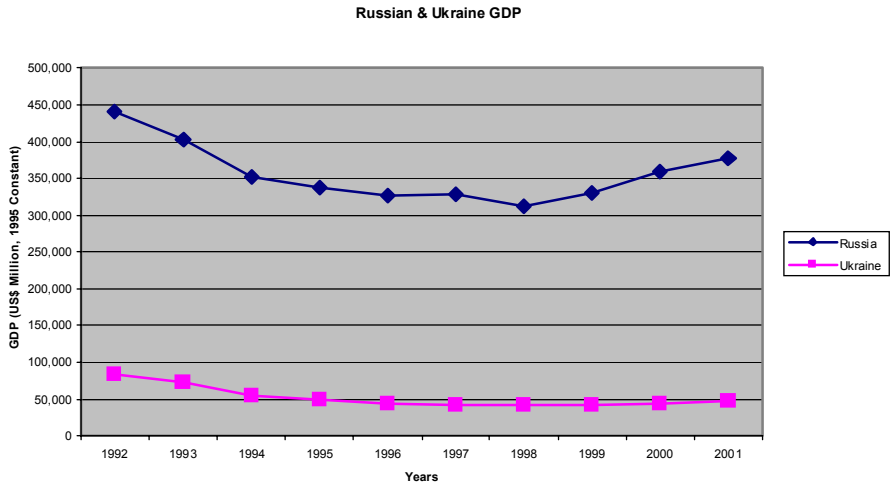
1.4.1 Economy

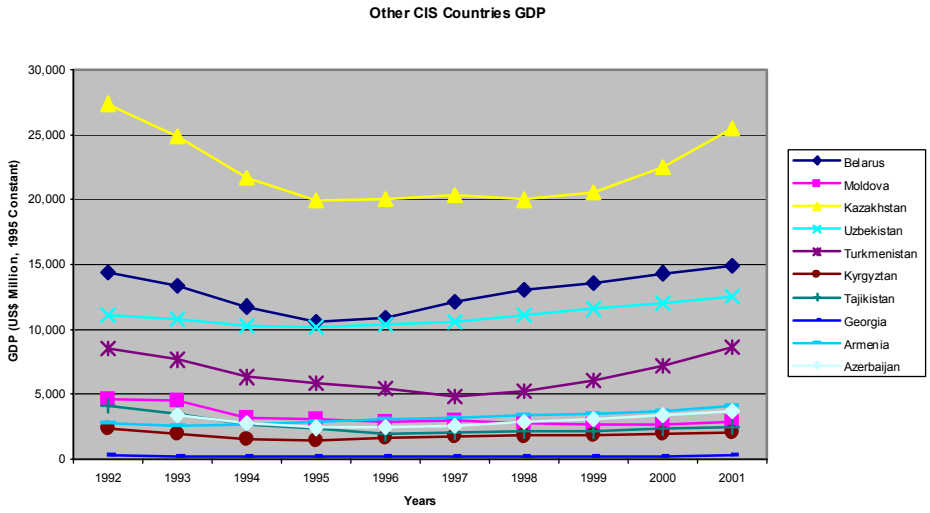
The Baltic States of Lithuania, Latvia and Estonia occupy a strategic location as transit routes between Russia and trading markets in Europe and throughout the world. Their economies have been intertwined for many years.

Alone among the former Soviet republics the Baltic States were quick to adopt market economies and to implement democratic reforms. As a result they have largely avoided the economic and political crises which have affected other regions in transition from a centrally planned economy. Privatisation in the Baltic States was largely completed by 2002. In addition the three states have actively sought to become members of wider economic and political unions including the European Union (EU) and North Atlantic Treaty Organisation (NATO). Lithuania, Latvia and Estonia have recently voted in referendums to join the EU and this is expected in mid 2004. In November 2002 all three Baltic States received invitations to join NATO and this is also expected to be completed in 2004.

An illustration of the economic development of the Baltic States and the members of the Commonwealth of Independent States are provided in the following three graphics (Figure I.1.4-1) using information from the World Bank database. The first shows the trend in real GDP growth of the three Baltic States in US$ (1995 constant level) for a 10 year period from 1992 – 2001. The other two show the equivalent for the 12 CIS states, with Russia and Ukraine separated due to the relative size of their economies.







Source: World Bank Economic Database

Figure I.1.4-1 GDP Growth in Baltic States and CIS Economies

These graphics reveal the following:

- On the break-up of the Former Soviet Union (FSU) in 1992 there was a sharp decline in the economies of the Baltic States for about three years. Since then, however, there has been a consistent improvement in their economies, temporarily interrupted in 1999 due to the affects of the Russian economic crisis the previous year.
- The break-up of the FSU led to a long and significant decline in the GDP of Russia. This decline appeared to halt in 1996-97 but accelerated again in 1998 during the economic crisis that year. Efforts to stabilise the economy were successful and economic measures to provide for long term growth would also appear to have been successful. GDP in Russia has grown consistently and significantly since then, recouping much of the decline during the 1990s. Underpinning this growth has been the export of Russia's oil and gas reserves and the relatively high world price of oil.
- Even with its decline in GDP Russia is still by far the largest of the CIS economies, making up about 75% of the total CIS GDP in 2001. The next largest is Ukraine at 9% of total CIS GDP.
- Unlike Russia, Ukraine's economy has remained relatively flat during the mid 1990s after falling following the break-up of the FSU. A small increase in GDP occurred in 2000 and 2001, and was forecast to continue in 2002.
- Kazakhstan's economy declined rapidly in the early 1990s but has been recovering just as fast during the late 1990s/early 2000s. Kazakhstan has been blessed with large reserves of minerals, oil, and natural gas which it has been developing, and receiving significant inward investment to exploit these resources. Its economic policies have been respected by international organisations, encouraging such investment.
- Belarus's economy declined significantly from 1992 – 1995 but has improved steadily since then, and is now larger than in 1992. Turkmenistan's economy declined over a longer period (1992 – 1997) but has been increasing very quickly and now almost matches the 1992 level. The individual GDPs of the three Baltic States are slightly smaller than that of Turkmenistan.
- All the other economies of the CIS countries are relatively small. Most have experienced a relative decline during the early 1990s but have improved slowly during the late 1990s.

The nature and composition of the economies of each of the Baltic States and CIS countries is revealed in Table I.1.4-1 below which shows the total GDP provided by the principal primary, secondary and tertiary sectors of the economy.

Table I.1.4-1 Composition of GDP (2001) in Baltic States and CIS Economies

Country	Primary (Agriculture)	Primary (Non Agric.)	Secondary (Industry)	Tertiary (Services)	Total
Lithuania	6.9%	11.7%	27.3%	54.1%	100.0%
Latvia	3.9%	14.7%	22.2%	59.2%	100.0%
Estonia	5.4%	12.8%	24.2%	57.6%	100.0%
Russia	6.0%	11.7%	32.9%	49.3%	100.0%
Ukraine	12.3%	17.1%	33.6%	36.9%	100.0%
Belarus	11.2%	28.3%	30.1%	30.4%	100.0%
Moldova	23.9%	13.5%	18.0%	44.6%	100.0%
Kazakhstan	7.5%	17.8%	39.7%	35.1%	100.0%
Uzbekistan	31.4%	12.5%	18.7%	37.4%	100.0%
Turkmenistan	25.8%	5.7%	47.2%	21.3%	100.0%
Kyrgystan	35.3%	6.9%	25.5%	32.4%	100.0%
Tajikistan	17.5%	9.9%	23.2%	49.5%	100.0%
Georgia	19.2%	6.9%	21.1%	52.9%	100.0%
Armenia	24.1%	7.2%	31.6%	37.1%	100.0%
Azerbaijan	18.1%	8.2%	35.2%	38.5%	100.0%

Source: World Bank Economic Database

Table I.1.4-1 reveals that there are significant differences in composition of the economies of the Baltic States and CIS countries. The main features are:-

- All three of the Baltic States have similar economies, with a low composition of agriculture, a medium level of secondary (industrial) activity and high level of tertiary (service) activity. This is typical of a mature economy. Conversely, agriculture in several of the CIS countries e.g. Moldova, Uzbekistan, Turkmenistan, Kyrgystan, and Armenia is still a very significant activity within them.
- All three Baltic States have manufacturing activities but lack the major manufacturing industries of various CIS countries. The secondary (industrial) sector of many of the CIS countries often exceeds 30% of total GDP and is of much greater importance to their economic development.
- Non agricultural primary activities (e.g. fisheries, forestry, mining) are important (albeit relatively small) in the Baltic States and in about half of the CIS countries. Some of the CIS countries have natural raw materials e.g. oil in Russia and minerals in Kazakhstan. Many of the countries have forestry products and it is notable that all of the Baltic ports visited during the Study export significant quantities of logs and sawn timber.

Some of the major industries in the Baltic States and CIS countries are outlined in section 1.4.3 below.

1.4.2 Population

Population statistics for the Baltic States and CIS countries are detailed for the last 10 years in Table I.1.4-2 below.

Table I.1.4-2 Population Size (Million) in Baltic States and CIS Countries

Country	1991	1996	2001	Growth 1991-2001
Lithuania	3.70	3.60	3.49	-5.7%
Latvia	2.66	2.49	2.34	-12.0%
Estonia	1.57	1.45	1.35	-14.0%
Russia	148.62	147.74	144.84	-2.5%
Ukraine	52.00	51.11	49.12	-5.5%
Belarus	10.19	10.16	9.97	-2.2%
Moldova	4.36	4.33	4.27	-2.1%
Kazakhstan	16.23	15.58	14.83	-8.6%
Uzbekistan	20.95	23.23	25.10	19.8%
Turkmenistan	3.86	4.65	5.29	37.1%
Kyrgystan	4.45	4.58	4.97	11.7%
Tajikistan	5.46	5.93	6.22	13.9%
Georgia	5.46	5.42	5.02	-8.1%
Armenia	3.61	3.77	3.81	5.5%
Azerbaijan	7.27	7.76	8.11	11.6%

Source: World Bank Economic Database

The following conclusions can be made from these population statistics:

- There has been a significant relative decrease in the population of each of the three Baltic States, particularly Latvia and Estonia. This is principally due to the migration of Russians back to their home country following the break up of the FSU. Latvia and Estonia had larger Russian populations than Lithuania.
- Russia has by far the largest population compared with the Baltic States and the other CIS countries. It makes up just over half of the CIS total population.
- Whilst some of the CIS countries have experienced small relative declines due to a combination of economic and political factors a number of the Central Asian countries have experienced significant increases. Whilst the full details of these increases are not known, a significant factor is likely to be inward migration from surrounding countries e.g. Afghanistan, which have suffered from prolonged periods of political instability.
- A notable feature of many of the countries has been a decline in the birth rate as a result of the economic climate which will lead to a gradual ageing of the overall population. This may reverse now that the economies of most of the countries are starting to recover.
- For the Baltic States the opportunities provided by membership of the EU may prove attractive to a proportion of the younger populace and lead to some net out-migration. Already about 25% of native speaking Lithuanians live abroad and many send financial support back to family members.

1.4.3 Industry

Traffic commodities using the Baltic Sea ports are influenced by a number of important industries in the region. A selection of these are described in outline for this Progress Report. These are:-

- Russian Oil
- Iron and Steel
- Fertilisers
- Grain

(1) Russian Oil

Prior to 1991, the FSU was the world's largest exporter of oil, with exports exceeding 12 million barrels per day at its peak. Russia accounted for nearly 90% of this amount. Soviet oil production and exports declined throughout the 1980s and in the aftermath of the break up of the FSU, Russia's net oil exports plummeted to just 3.16 million barrels per day (bpd) in 1994.

After Russia restructured its oil industry into a number of vertically-integrated, private oil companies the country's oil production and exports began to increase again. In 2001, Russia's net oil exports rose for the seventh consecutive year, reaching over 4.9 million bpd in net crude oil and oil product exports. Russia is now the world's second largest oil exporter and in January 2003 Russia's exports exceeded those of Saudi Arabia, the world's largest oil producer. Russia's net oil exports increased again to 5.2 million bpd in 2002. Crude oil exports are a key source of income for Russia and provide approximately 25% of the Russian government's income.

The majority of Russian oil is exported via several terminals on the Baltic Sea and Black Sea, and then on to Europe. The increased cargo flows through the Baltic ports have been partly affected by the increase in Russian crude oil production, in particular at Tallinn.

There have been a number of factors which have encouraged the Russians to develop alternative export routes. These have included capacity constraints with the existing routes, environmental concerns about the volume of oil cargo passing through the Bosphorus Straits and the desire to own (in part or in full) the transit network. In line with their declared policy to develop their own export facilities Russia developed the oil terminal port at Primorsk, 140 kms north west of St. Petersburg (marked on Figure I.1.1-1), and linked it into the new Baltic Pipeline System which began operations in December 2001. Phase One of the development of Primorsk and the Baltic Pipeline network is now complete, and Phase Two is planned.

The topic of Russian Oil is a major issue and appears to be very political. It influences the Baltic States in a number of different ways:-

- Russia has traditionally exported much of its crude oil through the Baltic ports. As Ventspils has discovered, these traditional routes may be altered and one of the reasons for halting crude oil to that port was the need to supply the new Baltic Pipeline System with supplies of crude oil to feed Primorsk.
- There would appear to be a desire to have some ownership of the supply routes to the world market whether via the new Baltic Pipeline system or the traditional routes through the Baltic States. The Russian Yukos oil company is part owner of the Mazeikei oil refinery and Butinge oil terminal in Lithuania (referred to in section 1.2.1). As the Ventspils oil terminal has not yet been privatised no Russian company has gained a stake in the terminal and it has been suggested that

one of the reasons the crude oil supply has been terminated is to put pressure on the Latvian government during this process.

- The consistent flow of Russian oil onto the world market and the income derived has helped to stabilise the Russian economy and to increase the country's wealth. This will increase the propensity for the Russian economy to import more consumer goods, most likely from Western Europe.
- Further pipeline developments within Russia are also being considered such as the eastwards extension of the existing network to China and the eastern seaboard coast of Russia (to supply Japan) and a network to feed the Russian northern deepwater port of Murmask. The latter is being proposed by the Yukos oil company and would break the monopoly of Transeft who owns and runs the existing extensive pipeline network. It will also allow oil to be carried direct to the USA in the largest oil tankers and will compete with the cost of shipments from the Middle East.
- Two issues affecting the overall supply and price of crude oil in the next few years will be the increased oil production from Iraq (which has the world's second largest oil reserves) and also the new supplies due to become available from the Caspian Sea area.

(2) Iron and Steel

As with the previous commodity much could be written about iron and steel production and the changes which have occurred in the recent past. This is summarised in Tables I.1.4-3 to I.1.4-6 below. These show the volume of worldwide steel production, the major exporting/importing countries and the pattern of steel trade between regional areas. All these tables have been taken from the report World Steel in Figures (2003) produced by the International Iron and Steel Institute.

Table I.1.4-3 World Trade in Steel Products

(Units: Million Metric Tons of Finished Steel)

Year	Production	Exports	Exports %
1980	578.7	140.6	24.3
1985	599.0	171.0	28.5
1990	654.0	171.0	26.2
1995	658.5	246.7	37.5
2000	750.7	306.2	40.8
2001	753.7	299.9	39.8

Source: Report of World Steel (2003)

This shows that in addition to a significant overall increase in worldwide production over 20 years there has also been a significant increase in the proportion traded worldwide. Over the period 1980 – 2001 production increased by 30% but exports by a massive 113%.

The following two tables below show the major countries importing and exporting steel. Firstly these are arranged in terms absolute volumes of export and imports and secondly in terms of net exports as many countries both import and export steel.

Table I.1.4-4 Major Importers and Exporters of Steel in 2001

(Units: Million Metric Tons)

Rank	Country	Total Exports	Rank	Country	Total Imports
1	Japan	29.5	1	United States	27.8
2	Russia	25.6	2	China	25.6
3	Ukraine	24.4	3	Germany	19.0
4	Germany	23.9	4	Italy	17.2
5	Belgium, Luxemburg	20.5	5	France	16.1
6	France	16.9	6	Belgium, Luxemburg	11.5
7	South Korea	14.0	7	South Korea	10.7
8	Italy	11.8	8	Spain	10.0
9	Turkey	10.6	9	Taiwan, China	8.3
10	Brazil	9.3	10	Hong Kong	8.2
11	Taiwan, China	8.0	11	United Kingdom	8.1
12	China	7.5	12	Thailand	7.2
13	United Kingdom	6.9	13	Canada	6.3
14	Netherlands	6.2	14	Netherlands	5.6
15	Spain	5.9	15	Turkey	5.5

Source: Report of World Steel (2003)

Table I.1.4-5 Net Importers and Exporters of Steel in 2001

(Units : Million Metric Tons)

Rank	Country	Net Exports*	Rank	Country	Net Imports*
1	Japan	25.4	1	United States	22.1
2	Ukraine	24.0	2	China	18.1
3	Russia	22.5	3	Hong Kong	5.8
4	Belgium, Luxemburg	9.1	4	Thailand	5.6
5	Brazil	8.2	5	Italy	5.4
6	Turkey	5.1	6	Iran	4.1
7	Germany	4.8	7	Spain	4.1
8	South Africa	4.0	8	Vietnam	3.5
9	South Korea	3.3	9	Philippines	2.8
10	Kazakhstan	2.9	10	Portugal	2.4
11	Austria	2.3	11	Singapore	2.3
12	Slovak Republic	2.2	12	U.A. Emirates	2.2
13	Czech Republic	1.5	13	Malaysia	2.1
14	India	1.4	14	Indonesia	2.1
15	Argentina	1.3	15	Greece	2.0

Source: Report of World Steel (2003)
* Net Exports = exports - imports
Net Imports = imports - exports

These tables show that whilst there are a large number of exporting and importing countries as shown by Table I.1.4-5 there are relatively few main net exporting countries (Japan, Ukraine, and Russia) and principally only two net importing countries (USA and China). Within the CIS countries Russia, Ukraine and, to a lesser extent Kazakhstan, are significant manufacturers of iron and steel products. It is clear that they are also very important net exporters of these products onto the world market. Due to the Russian Railway tariff introduced in 2001 most of these Russian iron and steel products are now being directed via Russian ports. Baltic ports such as Klaipeda which handle this traffic have seen a significant decrease. Table I.1.4-6 below summarises the trading pattern of exports and imports by major worldwide region.

Table I.1.4-6 Regional Trade Pattern in Steel in 2001

(Units: Million Metric Tons)

Destination / Export Region	E.U. States	Other Europe	F.S.U.	North America	Latin America	Africa	Middle East	China	Japan	Other Asia	Oceania *	Total Exports	Between Regions	Net Exports
EU States	75.5	13.0	2.4	6.3	1.6	2.6	1.9	0.7	0.1	2.6	0.2	106.3	31.3	3.6
Other Europe	13.7	4.0	2.3	1.9	0.8	1.4	3.0	0.5	0.0	1.1	0.0	28.6	24.6	3.7
F.S.U.	7.7	7.1	4.3	2.4	3.1	4.6	8.5	9.0	0.1	10.0	0.0	56.7	52.4	47.6
North America	0.2	0.0	0.0	7.9	1.8	0.1	0.1	0.0	0.0	0.3	0.0	10.5	2.6	-23.4
Latin America	1.7	0.1	0.0	7.1	2.3	0.1	4.6	0.3	0.0	2.4	0.0	18.6	16.3	6.7
Africa and Mid. East	1.6	0.0	0.0	0.7	0.3	1.7	0.2	0.5	0.0	3.3	0.1	8.5	6.5	-23.7
China	0.4	0.1	0.0	1.0	0.1	0.1	0.2	0.0	0.3	5.0	0.1	7.2	7.2	-18.4
Japan	1.8	0.3	0.1	2.4	1.3	0.4	1.5	4.4	0.0	17.8	0.5	29.5	29.5	25.5
Other Asia	1.5	0.4	0.0	4.2	0.7	0.2	1.1	10.1	3.6	10.0	0.5	32.1	22.0	-20.8
Oceania *	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	1.0	0.7	-0.7
Total Imports	102.7	24.9	9.0	33.9	11.9	11.1	21.0	25.6	4.0	52.9	1.7	298.8	193.1	
Between Regions	27.7	20.9	4.7	26.0	9.6	9.4	20.3	25.8	4.0	42.9	1.4	193.1		

* Australia and New Zealand

Table I.1.4-6 above clearly shows that the Former Soviet Union (principally Russia, Ukraine and Kazakhstan) is the largest exporting steel region in the world (net exports of 47.6 million tons) and that it exports large quantities of steel to most of the other regions in the world. It is not anticipated that this will change. The FSU only imports 9.0 million tons and, of this, 4.3 million tons is trade between the FSU states.

(3) Fertilisers

As with the previous two commodities, the production, consumption and trade of fertilisers throughout the region is a major topic of research and has been summarised in Table I.1.4-7 below.

Table I.1.4-7 Export and Imports of Fertilisers in Baltic States and Main CIS Countries

(Units: Thousand Metric Tons)

	1992	1996	2000	% Growth 1992 – 2000
Lithuania				
Export	164	435	772	371
Import	50	126	116	132
Latvia				
Export	15	0	0	-100
Import	105	25	51	-51
Estonia				
Export	50	50	33	-34
Import	73	24	35	-52
Russia				
Export	5525	6722	9631	74
Import	261	0	0	-100
Ukraine				
Export	1455	1689	1893	30
Import	908	51	0	-100
Belarus				
Export	1642	2172	3128	91
Import	200	10	30	-85
Kazakhstan				
Export	109	117	9	-92
Import	117	44	37	-68

Source: UN Food and Agriculture Organisation

The following conclusions can be drawn from the above trade in fertilisers:-

- There has been a very significant increase in exports from Lithuania which has now become a major producer of fertilisers. Imports of other fertilisers have also increased significantly, but not as fast as exports.
- Latvia and Estonia have only a very small trade in fertilisers.
- Russia, Ukraine, and Belarus are all major producers of fertilisers and all three countries have significantly increased exports over the period from 1992 – 2000. Imports to these countries have virtually ceased.
- Surprisingly, Kazakhstan's trade in fertilisers, both imports and exports, would appear to have almost ceased. As fertiliser production and consumption in the country has also declined it suggests a cutback of agricultural production, but this is not substantiated as shown by the level of grain production described below. It is assumed the data for 2000 is incomplete.

(4) Grain

Whilst the amount of data on grain production and exports was less extensive it was still useful to reveal the main trends in agricultural production. Figure I.1.4-2 below shows grain production (wheat, maize and barley) in the main CIS producing countries, along with Lithuania.

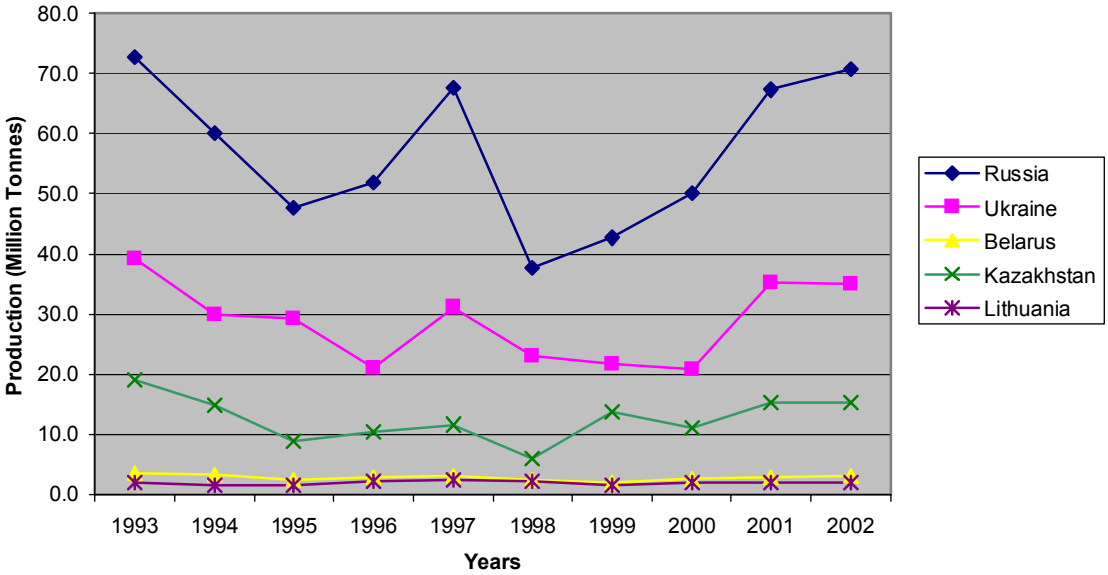


Figure I.1.4-2 Grain Production in Lithuania and Main CIS Economies

The trend in grain production in the CIS countries would appear to mirror that of the economy (as shown in Figure I.1.4-1), with a decline in the early 1990s followed by a recovery in the late 1990s. The recovery in Russia would appear to have started in 1995 and 1996 but was very badly affected by the Russian economic crisis of 1998. As shown by the graphs, grain production in both Kazakhstan and Ukraine also fell significantly in 1998 and it is assumed that bad weather, combined with the economic climate, led to a very poor harvest. It was during this period that Klaipeda Port handled grain imports for the CIS. Since that time however, grain production has increased significantly to almost the same level as 1993, and now grain exports from Kazakhstan are a major commodity handled by Klaipeda Port. It is expected that this trend should continue albeit interrupted occasionally when bad weather leads to poor harvests.

The data on grain exports would appear to show a significant degree of variability year on year. However the pattern of export countries is shown in Table I.1.4-8 below using the latest available statistics for 2000.

Table I.1.4-8 Volume of Grain Exports in Lithuanian and Main CIS Countries

(Units: Thousand Metric Tons)

Country \ Year	2000	Proportion %
Russia	932	14.9
Ukraine	1299	20.7
Belarus	15	0.2
Kazakhstan	3737	59.6
Lithuania	290	4.6
Totals	6273	100.0

Source: UN Food and Agriculture Organisation

It is clear that Kazakhstan is by far the largest grain exporting country and has been so for several years. It is blessed by a large area of agricultural land, a relatively small population (about 15 million) requiring feeding, and a well run economy. Whilst agricultural production in Russia and Ukraine is higher, their populations are significantly larger (145 million and 49 million respectively). Many years ago Ukraine used to be called 'The Bread Basket of the Soviet Union' and agricultural production should now be significantly higher but the sector has been hampered by a lack of reform and incentives.

1.5 Trade Patterns

1.5.1 Introduction

The trade patterns of the Baltic States and the hinterland countries were assessed by using the Global Trade Atlas (GTA) database which provides detailed import and export statistics for all UN listed countries. This combines the trade data for 44 reporting countries with the trade data for UN countries. Two principal sets of data were obtained from the database:-

- Import and export data by value (US$) and by volume (tons) for Lithuania, Latvia, Estonia, Russia, Kazakhstan, Belarus, and Poland. For both imports and exports the principal 20 originating/destination countries were considered along with the commodities involved. Unfortunately, data on Ukrainian trade was not available.
- Principal exports by value (US$) and by volume (tons) for the main commodities identified in section 1.4.3 above, along with the destination countries to which they are sent. This included :-
  - Russian crude oil and oil products
  - Kazakhstan crude oil and oil products
  - Kazakhstan minerals
  - Russian iron and steel, and articles of iron and steel
  - Kazakhstan iron and steel, and articles of iron and steel
  - Lithuanian, Belarus and Russian fertilisers
  - Russian, Kazakhstan, Lithuanian and Belarus grain.

The detailed tables extracted from the GTA database can be found in Appendix B, and the principal results and conclusions are summarised below. In theory, traffic volumes should match those in Section 1.4 but some differences were identified.

1.5.2 Import and Export Data

The data for the latest available three year period was obtained for all countries. Some was for 1999 – 2001, others for 2000 – 2002 and one (Kazakhstan) for 1998 – 2000. As all the commodities are valued in the same currency (US$) it was possible to look at the relevant unit value of imports and export to each country's economy. This is summarised in Table I.1.5-1 overleaf.

Table I.1.5-1 Country Trade Statistics

Country	Imports/Exports	1998	1999	2000	2001	2002	Growth
Lithuania	Imports						
	Value ($ Mill.)		4834.5	5455.9	6352.8		31%
	Weight (M.T.)		12.37	12.97	14.70		19%
	Unit Value ($/T)		391	421	432		10%
	Exports						
	Value ($ Mill.)		3003.8	3809.2	4583.0		53%
	Weight (M.T.)		8.62	9.76	12.26		42%
	Unit Value ($/T)		349	390	374		7%
Latvia	Imports						
	Value ($ Mill.)		2946.8	3190.8	3504.4		19%
	Weight (M.T.)		4.84	4.83	4.91		1%
	Unit Value ($/T)		609	660	714		17%
	Exports						
	Value ($ Mill.)		1723.8	1869.3	2000.7		16%
	Weight (M.T.)		8.05	9.25	9.19		14%
	Unit Value ($/T)		214	202	218		2%
Estonia	Imports						
	Value ($ Mill.)		4109.4	5052.2	5223.0		27%
	Weight (M.T.)		6.78	6.14	7.74		14%
	Unit Value ($/T)		606	823	675		11%
	Exports						
	Value ($ Mill.)		3017.2	3829.9	4014.6		33%
	Weight (M.T.)		7.82	30.75	9.35		20%
	Unit Value ($/T)		386	124	429		11%
Russia	Imports						
	Value ($ Mill.)			29757	36416	40753	37%
	Weight (M.T.)			91.1	94.7	92.2	1%
	Unit Value ($/T)			327	385	442	35%
	Exports						
	Value ($ Mill.)			87749	68415	75483	-14%
	Weight (M.T.)			445.6	477.5	545.7	22%
	Unit Value ($/T)			197	143	138	-30%
Kazakhstan	Imports						
	Value ($ Mill.)	4349.6	3682.7	5045.4			16%
	Weight (M.T.)	13.9	8.8	11.7			-16%
	Unit Value ($/T)	313	418	431			38%
	Exports						
	Value ($ Mill.)	5435.7	5592.2	9116.1			68%
	Weight (M.T.)	65.6	60.7	81.8			25%
	Unit Value ($/T)	83	92	111			34%
Belarus	Imports						
	Value ($ Mill.)			8492.4	8140.7	8980.0	6%
	Weight (M.T.)			43.6	32.2	36.4	-17%
	Unit Value ($/T)			195	253	247	27%
	Exports						
	Value ($ Mill.)			7331.1	7484.6	8097.8	10%
	Weight (M.T.)			24.1	26.3	30.5	27%
	Unit Value ($/T)			304	285	266	-12%
Poland	Imports						
	Value ($ Mill.)			48940	50275	55112	13%
	Weight (M.T.)			70.5	71.1	77.0	9%
	Unit Value ($/T)			694	707	716	3%
	Exports						
	Value ($ Mill.)			31651	36092	41010	30%
	Weight (M.T.)			64.1	64.5	66.4	4%
	Unit Value ($/T)			494	560	618	25%

Source: Global Trade Atlas

(1) Baltic States

All three of the Baltic States have seen significant increases in the value and weight of both imports and exports over the period 1999 - 2001. This is greatest for Lithuania (53% by value and 42% by tonnage). For all three countries, however, the value of exports (both in absolute and unit values) is significantly lower than imports, leading to an adverse balance of trade. This reflects the value of the principal exports from these countries (wood, oil, fertilisers, iron and steel, aggregates, clothing) compared with the value of the imports (vehicles, electrical machinery, and machinery) which are relatively high cost, although lower value imports (oil, wood, aggregates, fertilisers, and iron and steel) are the principal import commodities by tonnage. It is notable that the unit value of imports into Latvia and Estonia is significantly higher than into Lithuania (reflecting Lithuania's significant crude oil imports for refining/re-export), and that the unit value of Latvia's exports (mainly wood) is much lower than the value of exports from Lithuania and Estonia.

The destination countries for the Baltic States' exports are similar with some small geographic differences. They are mainly the United Kingdom (UK), Germany, Russia, Sweden, and Finland. For Estonia, Finland is more important and UK less so, whereas for Latvia and Lithuania it is the reverse. Russia is a major importer of goods from the Baltic States, but is less significant than the European countries. Lithuanian oil exports to Poland and Latvia are significant.

For all the Baltic States Russia is the principal source of imports in terms of tonnage, reflecting its importance in terms of supplying principal commodities such as oil, gas, aggregates, fertilisers, iron and steel, wood, coal/coke. The other principal suppliers in terms of tonnage are Belarus (for Lithuania and Latvia) and Finland (for Estonia). Russia also is one of the top two countries by import value but imports of vehicles, machinery, and electrical machinery from Germany and Finland are also very important.

(2) Russia

In terms of both weight and value Russian imports and exports dominate the region, far exceeding the Baltic States, Kazakhstan and Belarus combined. Only Poland rivals Russia but only in terms of value (not tonnage) due to the much higher unit value of Poland's imports/exports. Unlike Poland, however, Russia has achieved a significant balance of trade surplus with exports exceeding imports (in value and weight) by a significant amount for several years. Russian exports have grown significantly although the value of them has declined due to the reduction in unit price of oil, but more especially gas. Oil and gas are the principal exports along with other basic raw materials such as coal/coke, iron and steel, and aluminium. Russia imports a range of industrial and consumer products, principally machinery and foodstuffs, along with raw materials for manufacturing (coal/coke, oil/gas, ores/slag, iron/steel) from its southern neighbours Ukraine and Kazakhstan. Apart from Ukraine and Kazakhstan, Russian imports/exports come from/go to many countries worldwide including North and South America, West and East Europe, Scandinavia, Asia and South East Asia, and the Far East. Some will clearly use Russia's far eastern seaboard ports.

(3) Kazakhstan

Whilst Kazakhstan's figures are a little older they show a number of important factors. Like Russia, there is a significant trade imbalance as exports exceeded imports in value, and even more significantly in terms of volume. Exports are principally of oil, coal/coke, iron and steel, ores/slag, and cereals, and have grown significantly over the period 1998 – 2000. As the unit value of these exports has also been increasing (albeit from a low base) export income has increased by two thirds. With the opening of the Caspian Sea Pipeline in 2001 from North West Kazakhstan to the Black Sea export growth will have continued. The connections with Russia clearly dominate the pattern of export and import movements. Within this pattern there are some notable worldwide connections such as the emergence of Bermuda and the British Virgin Islands (synonymous with North America) as important importers of Kazakhstan oil; iron and steel exports to China, Iran, and Turkey; and imports of sugar from the Caribbean and South/Central America. Kazakhstan's worldwide markets are expanding to complement its traditional links with Russia, Eastern Europe and Central Asia republics.

(4) Belarus

Belarus is unusual in that it has significant flows of both imports and exports which almost match each other. Imports, in both value and volume, exceed exports by a small amount, leading to a small balance of trade loss. The unit value of exports and imports are very similar. Whilst imports have been slowly decreasing, export volumes have been slowly increasing. The principal import and export commodity is oil, as Belarus refines crude oil it receives from Russia. Other principal exports are fertilisers, aggregates, vehicles, machinery and wood. Other principal imports are gas, iron and steel, machinery and electrical machinery. Other than Russia, the principal export destinations are to Eastern/Western European and Baltic countries, along with several countries worldwide which import fertilisers e.g. China, India, Malaysia, Brazil, USA. Imports to Belarus are mainly received from Russia and Eastern/Western European and Baltic countries.

(5) Poland

Poland is clearly a much larger economy and rivals that of Russia. Whilst the volumes of imports and exports are significantly lower than Russia their unit value is significantly greater so that their net value is 83% of Russia's total trade. Unlike Russia, however, Poland exhibits a consistent balance of trade deficit. There is a marked difference in both the principal export and principal import commodities by volume and by value. By volume, basic commodities such as coal/coke, iron and steel, wood and aggregates are the main exports. By value, the main exports are electrical machinery, machinery, vehicles, furniture and shipping. By volume, the main imports are oil, gas, ores/slag and aggregates but by value, machinery, electrical machinery, oil and vehicles are the most important. It is clear that the Polish economy is relatively advanced with a considerable trade in manufactured goods. Other than oil and gas imports from Russia, Germany is the principal source of Poland's imports and exports. Other import/export markets are principally within Western/Eastern Europe and Scandinavia, along with a few worldwide such as China, USA, Brazil.

1.5.3 Principal Export Commodities

As with the country imports and exports the data for the principal export commodities included their value (US$) and volume (tonnage). Data was obtained for a three year period and for some Russian commodities for five years. This is summarised in Table I.1.5-2 below.

Table I.1.5-2 Export Commodity Statistics

Country	Exports	1997	1998	1999	2000	2001	2002	Growth
Russia	Crude Oil							
	Value ($ Mill.)	13687	9456	13400	23591	22479	28192	106%
	Weight (M.T.)	116.83	127.19	124.64	132.28	145.35	184.05	58%
	Unit Value ($/T)	117	74	108	178	155	153	31%
	Oil Products							
	Value ($ Mill.)	7191	4164	4628	10154	9822	11044	54%
	Weight (M.T.)	61.02	53.35	50.07	58.96	68.43	74.68	22%
	Unit Value ($/T)	118	78	92	172	143	148	25%
Kazakhstan	Crude Oil							
	Value ($ Mill.)		1651	2040	4502			173%
	Weight (M.T.)		20.43	23.67	29.35			44%
	Unit Value ($/T)		81	86	153			89%
	Oil Products							
	Value ($ Mill.)		52	57	102			96%
	Weight (M.T.)		1.04	0.90	1.01			-3%
	Unit Value ($/T)		50	63	101			100%
Russia	Iron and Steel							
	Value ($ Mill.)				6239	5685	6394	2%
	Weight (M.T.)				37.92	38.70	38.59	2%
	Unit Value ($/T)				165	147	166	1%
	I.and S. Articles							
	Value ($ Mill.)				579	773	751	30%
	Weight (M.T.)				1.55	1.67	1.69	9%
	Unit Value ($/T)				374	463	444	19%
Kazakhstan	Iron and Steel							
	Value ($ Mill.)		771	886	1178			53%
	Weight (M.T.)		3.48	5.09	6.46			86%
	Unit Value ($/T)		222	174	182			-18%
	I.and S. Articles							
	Value ($ Mill.)		16	15	16			0%
	Weight (000 T.)		49.44	108.89	94.90			92%
	Unit Value ($/T)		324	138	169			-48%
Kazakhstan (Minerals)	Aggregates							
	Value ($ Mill.)		65	49	42			-35%
	Weight (M.T.)		2.51	2.56	2.18			-13%
	Unit Value ($/T)		26	19	19			-27%
	Ores/Slag/Ash							
	Value ($ Mill.)		243	117	177			-27%
	Weight (M. T.)		8.47	4.79	7.15			-16%
	Unit Value ($/T)		29	24	25			-14%
Lithuania	Fertilisers							
	Value ($ Mill.)			178	193	172		-3%
	Weight (M.T.)			1.68	1.75	1.68		0%
	Unit Value ($/T)			106	110	102		-4%
Belarus	Fertilisers							
	Value ($ Mill.)		506	511	487	538	541	7%
	Weight (M.T.)		5.76	5.91	5.68	6.55	6.61	15%
	Unit Value ($/T)		88	86	86	82	82	-7%
Russia	Fertilisers							
	Value ($ Mill.)	1599	1496	1440	1577	1671	1641	3%
	Weight (M.T.)	7.25	8.71	11.45	10.30	10.61	10.26	42%
	Unit Value ($/T)	221	172	126	153	158	160	-28%
Russia	Grain							
	Value ($ Mill.)	219	162	59	96	270	981	348%
	Weight (M.T.)	1.90	1.98	0.80	1.03	3.18	13.20	595%
	Unit Value ($/T)	115	82	74	93	85	74	-36%
Kazakhstan	Grain							
	Value ($ Mill.)		296	314	501			69%
	Weight (M.T.)		2.91	3.82	5.68			95%
	Unit Value ($/T)		102	82	88			-14%
Lithuania	Grain							
	Value ($ Mill.)			30	14	49		63%
	Weight (M.T.)			0.33	0.14	0.45		36%
	Unit Value ($/T)			91	100	109		20%

Source: Global Trade Atlas

(1) Russian Oil

Oil is the principal commodity which has been the driving force behind the Russian economy over the last few years as is evident from the export figures. The value of crude oil exports has more than doubled since 1997. Exports of crude have increased by 68 million tons (58%) and refined oil products by 14 million tons (22%). Russia has been helped by a significant increase in world oil prices in 2000 although this has declined slightly in 2001/02. It is clear that Russia is making significant efforts to continue to increase output.

Because of the extensiveness of the worldwide trade in crude oil and oil products data was obtained on the principal 50 (rather than 20) countries which receive Russian oil. Whilst there is a concentration to Eastern/Western Europe (Germany consistently being the largest recipient) there are also important markets to the Balkans/Mediterranean area (via the Black Sea), the Caribbean area, America and the Far East (Korea, Japan, Taiwan). It is clear from the changes in the figures that there is major competition in the crude oil market, with some significant changes in volumes over time e.g. the decline in the Caribbean and Irish markets, and significant increases to Italy/Ukraine/Lithuania/Netherlands. There are even more changes (upward and downward) in the market for oil products. This competition will help to account for the decline in the trading price of Russian oil. The world price will also be affected by the future availability of new supplies from Iraq and the Caspian Sea. As the trading price for oil products is lower than for crude oil it indicates that many of these products are the heavier end of the refining process rather than the lighter (and more valuable) products.

(2) Kazakhstan Oil

As mentioned above, Kazakhstan's exports of oil have recently increased with the opening of the Caspian Sea Pipeline to the Black Sea. The worldwide markets which Kazakhstan exports to are much more restricted than for Russian oil. Indeed Kazakhstan seems to have captured some markets e.g. the Caribbean which were important customers to Russia.

The average price of Kazakhstan oil (both crude and refined products) would appear to be significantly lower for Russia. Whilst this may reflect the relative quality of the oil, Kazakhstan may also have sought to expand their market by reducing its price in anticipation of the supply increasing with the opening of the new pipeline.

It can be expected that Kazakhstan will continue to expand its market in the future by developing other markets around the world. Most of this oil will be transported through the new pipeline and via the Black Sea.

(3) Russian Iron and Steel

As described above, iron and steel is another principal export for Russia, making up 7-8% of total Russian exports. Whilst the trade in volume and value of the basic product is relatively static there have been increases in the volume and value of manufactured iron and steel articles.

Russia's worldwide market for iron and steel is even more extensive than the oil market. The only parts of the world not served would appear to be Central/South America, Africa, and Australasia. Whilst China and Turkey are the two most

important destinations for basic iron and steel (Kazakhstan and China for articles of iron and steel) there are many countries which receive significant quantities. Russia has clearly developed a mature market and accusations of "dumping" products on the world market prevalent a few years ago have now subsided. Russia will want to develop this market further, including the expansion of the higher valued articles of iron and steel. As shown by Table I.1.4-4 Russia faces significant competition on the world market for basic iron and steel from several countries, some of which e.g. Turkey, have been rapidly expanding their export trade.

(4) Kazakhstan Iron and Steel

Whereas Russian iron and steel production has not increased significantly, Kazakhstan has almost doubled its production over the period 1998 – 2000. Almost all of this is made up of the basic product rather than manufactured articles.

Unlike Russia, Kazakhstan exports its products to a relatively small number of destinations, the most important of which are China, Iran, Switzerland, Russia and the Netherlands. The destinations of the other countries are scattered around the world.

(5) Kazakhstan Minerals

Whilst Kazakhstan exports about 10 million tons of minerals the value of them is relatively small due to their low unit value (the lowest of all the commodities considered). Over the period 1998 – 2000 there has been a reduction in both volume and value of mineral exports. With low unit value the principal countries to which they are exported are Kazakhstan's neighbours, Russia, Uzbekistan, and Kyrgystan.

(6) Fertilisers

The principal exporters of fertilisers are Russia, Belarus and Lithuania, with Russia being the most important and increasing its production significantly from 1997 - 2002 (by 42%). The unit value of Russian fertilisers would also appear to be greatest although this has declined over the last five years. Exports from Belarus have increased by 15% but Lithuanian exports have remained static.

The trade pattern of Belarus and Russia would appear similar, principally to China, Brazil and India, and Poland (from Belarus) and Switzerland (from Russia). The other countries are a mixture of regional e.g. Turkey and the Baltic States, and worldwide e.g. Malaysia, Argentina and Pakistan.

The trade pattern of Lithuanian fertilisers is very different, concentrated on European countries, in particular Germany, Netherlands and France. Almost all the other countries are regional e.g. the Baltic States, Scandinavia, Western/Eastern Europe. The main worldwide market is America.

(7) Grain

Both Russia and Kazakhstan are major exporters of grain and both have increased production significantly even though the average unit value of grain exports has declined. Russian grain exports were seriously affected by the crisis of 1998 - 1999 but recovered significantly in 2001 - 2002.

The markets served by Russia and Kazakhstan appear substantially different. The most important destinations for Russia are those around the Mediterranean Sea

including southern European (Italy, Greece, Spain), North African (Egypt, Algeria, Morocco, Tunisia) and Middle Eastern (Turkey, Israel Syria, Lebanon, Saudi Arabia). The most important destinations for Kazakhstan are Russia and other CIS countries, along with Afghanistan. Some European (Italy) and worldwide (America) markets were emerging by 2000.

Lithuania's market is much smaller and principally directed to Russia, Belarus and Switzerland. The latter emerged rapidly in 2001. Other markets include those around the Baltic Sea, northern Europe, and North Africa. The market for Belarus grain is so small that it was not considered in detail.

1.5.4 Effect of EU Membership on Trade Patterns

In May 2004 Lithuania, Latvia, Estonia, and Poland will become members of the European Union which is likely to have a significant impact on their trade patterns in the next few years. Many countries which joined the EU discovered that overall trade increases and there is an orientation of it towards other EU members. To illustrate this several EU Eurostat sources were used to reveal how trade patterns have changed over time for existing members. Table I.1.5-3 below shows how the trade patterns (imports, exports, and total trade) of the existing EU members have changed over a 21 year period. On average, intra EU trade between member states currently constitutes about 60% of their total trade, with little difference between imports and exports. Whilst there is almost no trend in the export statistics there is a discernable trend in import statistics towards increasing reliance on other EU members.

Table I.1.5-3 Intra (Internal) Trade Between EU Member States (%)

Exports	1980	1985	1990	1995	2000	2001
Belgium/Luxembourg	76.0%	72.9%	79.9%	76.5%	74.9%	75.4%
Denmark	67.4%	59.7%	68.4%	66.7%	66.9%	65.7%
Germany	60.5%	58.6%	64.0%	58.2%	56.5%	55.1%
Greece	49.6%	56.7%	68.0%	60.1%	43.0%	41.0%
Spain	54.1%	55.3%	67.6%	67.2%	70.3%	71.4%
France	58.1%	56.5%	65.3%	63.0%	61.4%	60.8%
Ireland	79.1%	72.6%	78.6%	73.9%	63.2%	63.0%
Italy	55.8%	52.1%	62.8%	57.3%	55.5%	53.8%
Holland	76.8%	77.7%	81.4%	79.9%	78.7%	78.7%
Austria	59.8%	58.9%	67.2%	65.8%	61.4%	61.5%
Portugal	65.7%	68.7%	81.2%	80.1%	80.3%	80.1%
Finland	57.7%	51.0%	62.2%	57.5%	55.7%	53.7%
Sweden	59.1%	55.6%	62.3%	59.6%	55.9%	54.6%
UK	50.0%	54.0%	57.3%	58.8%	57.0%	57.5%
TOTAL	61.0%	59.9%	66.8%	64.0%	62.4%	61.8%

Imports	1980	1985	1990	1995	2000	2001
Belgium/Luxembourg	63.8%	71.9%	74.2%	72.2%	69.5%	69.3%
Denmark	68.5%	68.6%	69.4%	71.0%	68.3%	68.3%
Germany	55.2%	59.6%	62.1%	60.4%	54.9%	55.9%
Greece	44.7%	50.8%	67.7%	70.1%	55.6%	54.0%
Spain	33.3%	40.3%	62.3%	67.6%	66.4%	67.0%
France	54.6%	62.1%	68.1%	68.5%	64.7%	65.2%
Ireland	78.5%	74.8%	73.9%	64.6%	62.2%	65.6%
Italy	49.7%	50.6%	61.9%	60.9%	56.7%	56.5%
Holland	57.9%	59.0%	63.7%	63.2%	51.1%	51.7%
Austria	65.5%	64.6%	70.7%	75.9%	68.8%	68.2%
Portugal	48.7%	48.9%	72.0%	73.9%	75.1%	75.1%
Finland	48.2%	51.6%	60.5%	65.0%	61.9%	63.5%
Sweden	59.1%	63.9%	63.4%	68.6%	64.2%	65.5%
UK	46.0%	52.5%	56.5%	55.4%	49.4%	50.0%
TOTAL	54.0%	58.3%	64.2%	64.1%	58.9%	59.4%

Total Trade	1980	1985	1990	1995	2000	2001
Belgium/Luxembourg	69.5%	72.4%	77.0%	74.5%	72.2%	72.4%
Denmark	67.9%	64.3%	68.9%	68.8%	67.5%	66.9%
Germany	57.9%	59.1%	63.1%	59.2%	55.7%	55.4%
Greece	46.3%	52.6%	67.8%	67.1%	52.2%	50.5%
Spain	41.2%	47.1%	64.5%	67.4%	68.1%	68.9%
France	56.2%	59.4%	66.8%	65.7%	63.1%	63.0%
Ireland	78.7%	73.7%	76.4%	70.0%	62.8%	64.0%
Italy	52.4%	51.3%	62.3%	59.0%	56.1%	55.1%
Holland	67.2%	68.6%	72.6%	72.0%	65.4%	65.9%
Austria	63.1%	62.0%	69.1%	71.2%	65.2%	64.9%
Portugal	54.2%	57.3%	75.6%	76.5%	77.1%	77.0%
Finland	52.7%	51.3%	61.3%	60.6%	58.3%	57.9%
Sweden	59.1%	59.6%	62.8%	63.6%	59.7%	59.6%
UK	48.0%	53.2%	56.9%	57.0%	52.8%	53.4%
TOTAL	57.3%	59.1%	65.5%	64.0%	60.6%	60.6%

Source: Eurostat

Of interest in the Table I.1.5-3 are the changes in trade which have occurred with three of the newest members of the EU. Greece joined in January 1981, and Spain and Portugal joined in January 1986. It can be seen that the importance of EU trade increased significantly for both Portugal and Spain. Both are known to have benefited greatly from their membership and their economies have grown significantly. The trade pattern for Greece initially also followed this trend but then declined in 2000/2001 although the reasons for this are not known.

As part of the preparation for the enlargement of the EU to receive 13 new members several publications have been produced by Eurostat under the title "Enlargement of the European Union", comparing the socio-economic status of the 13 'accession' countries with the existing EU members. The relative EU/Non EU trade split for the 13 accession countries from one of these publications is detailed in Table I.1.5-4 below, which can be compared with the existing trade split of the existing EU members detailed in Table I.1.5-3.

Table I.1.5-4 EU Accession Countries Trade Characteristics

Accession Countries	Exports as % of Imports 2000	2001	Total Imports 2001 (Mill Euro)	Total Exports 2001 (Mill Euro)	Imports from EU (%)	Imports outside EU (%)	Exports to EU (%)	Exports outside EU (%)
Bulgaria	80	76	7,471	5,707	49.4%	50.6%	54.8%	45.2%
Cyprus	13	13	3,780	491	55.5%	44.5%	49.0%	51.0%
Czech Republic	90	92	40,692	37,267	61.8%	38.2%	68.9%	31.1%
Estonia	75	77	4,798	3,696	56.5%	43.5%	69.4%	30.6%
Hungary	88	91	37,535	33,983	57.8%	42.2%	74.3%	25.7%
Latvia	59	57	3,931	2,243	52.6%	47.4%	61.2%	38.8%
Lithuania	**70**	**72**	**7,094**	**5,117**	**44.0%**	**56.0%**	**47.8%**	**52.2%**
Malta	72	72	3,043	2,186	63.6%	36.4%	41.3%	58.7%
Poland	65	72	56,167	40,335	61.4%	38.6%	69.2%	30.8%
Romania	79	73	17,373	12,685	57.3%	42.7%	67.8%	32.2%
Slovak Republic	93	86	16,487	14,104	49.8%	50.2%	59.9%	40.1%
Slovenia	86	91	11,344	10,347	67.7%	32.3%	62.2%	37.8%
Turkey	51	76	46,243	35,071	44.6%	55.4%	51.6%	48.4%
EU (15) *	91	96	1,028,075	985,387				

* Between EU Member States Only
Source: Eurostat

The conclusions which can be drawn from this analysis are:

- For most of the accession countries the ratio of exports to imports between member states is significantly lower than the overall EU average of over 90%. For Lithuania it is about 70%. This indicates that there is a potential to increase trade within the accession countries on joining the EU;
- There is a significant variability in the importance of 'EU trade' within the accession countries. Some such as Poland, Slovenia, and Czech Republic already achieve the EU average of 60% in both exports and imports. Others such as Slovenia, Romania, Czech Republic, Estonia, and Latvia already achieve this level

for exports. Lithuania, with 44.0% for imports and 47.8% for exports, has the lowest ratio of trade with EU countries and is likely therefore to see a significant change in trade patterns after it joins the EU in May 2004. Overall trade is likely to increase, with more exports and imports orientated to EU countries.

1.5.5 Future Economic Growth

It is clear from Figure I.1.4-1 that all the economies within the region are expanding and it is expected this will continue. The dominant economy in the region is Russia which successfully recovered from the economic crisis of 1998 and has implemented policies to sustain its growth for the future. The Russian economy has been growing strongly, with annual growth averaging 5.9% for the past four years and industrial output surging. The currency is stable and investments by foreign companies, particularly in the oil and gas industries, have been encouraged. Relatively high oil prices and the balance of trade surplus have helped Russia control its debt mountain, and not only meet its repayment schedule but even exceed it. The peak of debt repayments was in 2003 and it passed without any difficulty. Under President Putin no new borrowing from the International Monetary Fund has occurred and State borrowing from abroad and at home has been limited. As reported by the Economist Intelligence Unit (EIU) "Mr. Putin has put the State's finances on a far firmer footing, raising revenue with the help of the oil boom and pushing Russia to live within its means".

As well as the energy sector the rest of the economy is performing well with other sectors of the economy currently growing rapidly, including industry (6.8%), freight transport (7.3%), construction (14.4%), and retail trade (8.7%). Only agriculture is likely to contract this year (3.2%) due to bad weather which will affect harvest yields. President Putin has the desire to double Russia's GDP within 10 years and is seeking to provide the economic and political stability to facilitate this. He was re-elected during the Presidential elections in 2004 and his Government's policies will remain settled for the immediate future. Continued growth and stability will encourage inward investment, slowly improve Russia's industrial and manufacturing industries, and help to diversify the economy away from its dependence on the energy sector.

With the importance of Russia to the regional economy of the Baltic area it is anticipated that Russia's continued economic growth will stimulate the surrounding countries, helping them to sustain the growth already revealed in Figure I.1.4-1. This will complement the stimulus to trade and development from the entry of the Baltic States and Poland into the EU in May 2004.

Whilst short term projections (3-5 years) in economic growth based on current trends are available from publications such as the EIU, long term forecasts are more difficult to obtain. Reference was therefore made to the EU study Improvement of Traffic Flows in Corridors II and IX mentioned in Section 1.2.4. That project developed a traffic model for the study area including Western Russia, Ukraine, Belarus and Moldova, but also referenced the surrounding countries. The long term growth rates (from 1999 - 2015) used in that study are illustrated in Table I.1.5-5 overleaf, for both 'High' and 'Low' growth scenarios. These were derived from IMF, OECD and other relevant international statistics, and were discussed and agreed with the recipient countries involved in that study. Many of the growth rates used in that study, in particular the high growth scenario, appear to be still valid in view of recent economic trends.

Table I.1.5-5 Long Term Real GDP Growth Rates (% Increase)

Year	Russia		Belarus		Ukraine		Moldova		Lithuania		Latvia		Estonia		Finland	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	High	Low	High	Low
1999	0.0	0.0	-2.0	-2.0	-2.5	-2.5	-5.0	-5.0	0.5	0.5	2.0	2.0	0.5	0.5	3.6	3.6
2000	2.0	2.0	0.0	0.0	0.0	0.0	1.0	1.0	4.0	4.0	4.0	4.0	5.0	5.0	3.8	3.8
2001	2.0	3.0	2.0	2.0	3.0	3.5	5.0	6.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2002	3.0	4.0	3.0	3.0	4.0	4.5	6.0	7.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2003	4.0	4.0	4.0	4.0	4.7	6.0	6.0	8.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2004	4.0	4.5	4.0	4.0	4.7	6.0	6.0	8.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2005	4.0	5.0	4.0	5.0	4.7	7.0	7.0	8.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2006	4.2	6.0	4.2	6.0	4.7	7.0	7.0	8.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2007	4.2	6.0	4.2	6.0	4.7	7.0	7.0	8.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2008	4.2	6.0	4.2	6.0	4.7	7.0	7.0	8.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2009	4.2	6.0	4.2	6.0	4.7	7.0	7.0	8.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2010	4.2	6.0	4.2	6.0	4.5	7.0	7.0	8.0	4.2	6.0	4.2	6.0	3.8	5.5	2.0	2.7
2011	4.0	6.9	4.0	6.9	4.5	7.0	6.0	7.5	4.0	6.9	4.0	6.9	2.7	4.0	1.3	2.1
2012	4.0	6.9	4.0	6.9	4.5	7.0	6.0	7.5	4.0	6.9	4.0	6.9	2.7	4.0	1.3	2.1
2013	4.0	6.9	4.0	6.9	4.5	7.0	6.0	7.5	4.0	6.9	4.0	6.9	2.7	4.0	1.3	2.1
2014	4.0	6.9	4.0	6.9	4.5	7.0	6.0	7.5	4.0	6.9	4.0	6.9	2.7	4.0	1.3	2.1
2015	4.0	6.9	4.0	6.9	4.5	7.0	6.0	7.5	4.0	6.9	4.0	6.9	2.7	4.0	1.3	2.1

Year	Kaliningrad		Poland		Slovakia		Hungary		Romania		Sweden and Norway		South Europe		West Europe	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
1999	0.0	0.0	3.7	3.7	0.7	0.7	3.7	3.7	-3.5	-3.5	2.6	2.6	1.0	1.0	2.0	2.0
2000	2.0	2.0	5.0	5.0	4.9	4.9	4.5	4.5	2.5	2.5	2.9	2.9	3.9	3.9	2.7	2.7
2001	4.2	6.0	5.0	6.0	3.8	5.5	3.8	5.5	2.0	4.6	2.0	2.7	3.8	5.5	2.0	2.7
2002	4.2	6.0	5.0	6.5	3.8	5.5	3.8	5.5	1.0	4.6	2.0	2.7	3.8	5.5	2.0	2.7
2003	4.2	6.0	5.0	6.5	3.8	5.5	3.8	5.5	2.0	4.6	2.0	2.7	3.8	5.5	2.0	2.7
2004	4.2	6.0	5.0	6.5	3.8	5.5	3.8	5.5	3.0	4.6	2.0	2.7	3.8	5.5	2.0	2.7
2005	4.2	6.0	5.0	6.5	3.8	5.5	3.8	5.5	3.8	5.5	2.0	2.7	3.8	5.5	2.0	2.7
2006	4.2	6.0	3.8	5.5	3.8	5.5	3.8	5.5	3.8	5.5	2.0	2.7	3.8	5.5	2.0	2.7
2007	4.2	6.0	3.8	5.5	3.8	5.5	3.8	5.5	3.8	5.5	2.0	2.7	3.8	5.5	2.0	2.7
2008	4.2	6.0	3.8	5.5	3.8	5.5	3.8	5.5	3.8	5.5	2.0	2.7	3.8	5.5	2.0	2.7
2009	4.2	6.0	3.8	5.5	3.8	5.5	3.8	5.5	3.8	5.5	2.0	2.7	3.8	5.5	2.0	2.7
2010	4.2	6.0	3.8	5.5	3.8	5.5	3.8	5.5	3.8	5.5	2.0	2.7	3.8	5.5	2.0	2.7
2011	4.0	6.9	2.7	4.0	2.7	4.0	2.7	4.0	2.7	4.0	1.3	2.1	2.7	4.0	1.3	2.1
2012	4.0	6.9	2.7	4.0	2.7	4.0	2.7	4.0	2.7	4.0	1.3	2.1	2.7	4.0	1.3	2.1
2013	4.0	6.9	2.7	4.0	2.7	4.0	2.7	4.0	2.7	4.0	1.3	2.1	2.7	4.0	1.3	2.1
2014	4.0	6.9	2.7	4.0	2.7	4.0	2.7	4.0	2.7	4.0	1.3	2.1	2.7	4.0	1.3	2.1
2015	4.0	6.9	2.7	4.0	2.7	4.0	2.7	4.0	2.7	4.0	1.3	2.1	2.7	4.0	1.3	2.1

Source: Improvement of Traffic Flows on Corridors II and IX Study