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Republic of Ukraine Transport Sector Review

(In Three Volumes) Volume III: Annexes and Statistical Appendix

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CURRENCY UNITS and EQUIVALENTS

US\$1 = Hrv 2.0
1Hrv = 100 Kopeck
US\$1 = USc 100

WEIGHTS, MEASURES and OTHER UNITS

Bln Billion
Inh Inhabitant
Kg Kilogram
Km Kilometer
Mln Million
Pass Passenger
pkm passenger kilometer
sq km, km² Square kilometer
T Ton (metric, 1,000 kg)
Th Thousand
tkm ton kilometer
Toe Ton oil equivalent
Vpd Vehicles per day

CONVERSION FACTORS

1 mile = 1.609 meters
1 kg = 2.205 lbs
1 US gallon = 3.785 liters
1 sq km = 0.386 square miles

CHEMICAL COMPOUNDS

C_xH_y, HC Hydrocarbons
CO Carbon Monoxide
CO₂ Carbon Dioxide
NO_x Nitrogen Oxides
SO₂ Sulfur Dioxide

FISCAL YEAR

January 1 - December 31

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

ADW	Ave. Dead Weight
ATC	Air Traffic Control
CAA	Civil Aviation Administration
CIF	Cost-Insurance-Freight
CIS	Commonwealth of Independent States
CMEA	Council for Mutual Economic Assistance
COTIF	Bern Convention of May 9, 1980
EBRD	European Bank for Reconstruction and Development
ECAC	European Civil Aviation Conference
EDI	Electronic Data Interchanges
EIA	Environmental Impact Assessment
EU	European Union
FIATA	Fédération Internationale des Associations des Transitaires et Assimilés
FOB	Free-On-Board
FSU	Former Soviet Union
GATT	General Agreement on Tariffs and Trade
GDI	Gross Domestic Investment
GDP	Gross Domestic Product
GNP	Gross National Product
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMF	International Monetary Fund
IRI	International Roughness Index
MOT	Ministry of Transport
OECD	Organization for Economic Cooperation and Development
PA	Per Annum
PIP	Public Investment Plan
SAC	Structural Adjustment Credit
SMGS	USSR Rail Waybill
SOE	State Organizations and Enterprises
TACIS	Technical Assistance for Commonwealth of Independent States
TIR	International Road Transport
UZ	Ukrzaliznytsia (Railway Administration)
VAT	Value Added Tax
WTO	World Trade Organization

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UKRAINE

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Annex 3.1. Accounting and Financial Management Information Systems

1. An adequate accounting and financial management framework for the transport sector has become an essential factor. It will support the sector to: (i) achieve good management performance; (ii) deliver efficient and financially sustainable transport services; (iii) mobilize resources and sustain operations in a market economy; and (iv) introduce private investment resources in the sector. Key aspects of an acceptable accounting and financial management framework for the sector, should be, as a minimum, the following:
2. **Generalize Generally Accepted Accounting Principles (GAAP)** or equivalent in the Sector. In 1997, Ukraine adopted the accrual basis principle. The transport sector should take the lead in generalizing professionally at least the other main principles such as continuity of operation (going concern assumption) or permanence of accounting methodologies (consistency principle).
3. **Improve Accounting Systems and Standards.** Sound and reliable accounting and reporting methodologies and systems in accordance with International Accounting Standards (IAS) taking into account national business practices will have to be introduced.
4. **Introduce Audit Requirements and Improve Auditing Standards.** Yearly financial audit should be generalized among the transport entities. Ukrainian auditing procedures and guidelines, when existing are currently oriented towards compliance with a statutory based system. It will need to be revised for compliance with the IAS. These auditing requirements and standards will become a priority in the transport sector with the introduction of private investment resources in the sector.
5. **Adopt Financial Disclosure Requirements in Compliance with IAS.** The inevitable privatization of transport operations will impose adoption of financial disclosure requirements in compliance with IAS to ensure transparency and availability of financial information.
6. **Define and Introduce the Adequate Incentive for Decision-Makers and Managers in the Sector via Training and Accountability Policy.** Once the institutional framework has been put in place and responsibilities clarified, it is a fundamental principle of law and administration that decision-makers should exercise their independent judgment. At the same time, those decision-makers and their organizations should be held strictly accountable for their decisions and general performance in the management of the matters, finances, manpower and assets entrusted to them. Continuous assessment of this performance, together with the right incentive measure will have to be organized and implemented.
7. **Introduce Professional Valuation of Infrastructure Assets and Equipment and Define Adequate Amortization Policy.** Although several revaluation of assets in the sector were implemented in 1995, 1996 and recently in 1997, it appears that a professional inventory, valuation of infrastructure assets, equipment and inventories and clear title establishment, will have to be performed, particularly, since privatization of productive operations would have to be envisaged. On another hand, government will have to ensure that periodic adjustments and appropriate depreciation and provisions policies are clearly defined and implemented to take into account economic and financial realities facing the sector.

Annex 4.1. Container Growth Potential

1. More and more cargo will be transported in containers in the future as experienced worldwide. Table 1 shows the ratios of intermodal cargo potential for some selected commodity group. These ratios have been elaborated in different studies concerning the containerization potential for European harbors.

Table 1 : Percentage of Intermodal Cargo Potential by Commodity Groups

List of commodity groups	Ratio of Intermodal Cargo Potential ¹
1 non ferrous ore, scrap	29%
2 iron, steel	22%
3 non ferrous metal	17%
4 food and beverages	81%
5 fresh fruit and vegetables	80%
6 chemicals	55%
7 vehicles and parts	50%
8 machines, electronic/electric goods	86%
9 leather and textile goods	92%
10 other manufactured goods	80%
11 pulp and waste paper	40%
12 wood	32%
13 grain and animal feed	4%
14 coal	0%
15 crude oil and oil products	2%
16 iron ore	0%
17 copper ore and bauxite	2%
18 building material	20%
19 fertilizer	4%

¹ Up to this percentage of the commodities could be transported in containers if container transport was taking place in normal conditions.

UKRAINE- TRANSPORT SECTOR REVIEW- RAIL SUBSECTOR

SCENARIO	1		Exchange rate US\$/Hrv		2.00				
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01	2002-05	
Traffic growth (tkm)			Annual tariff increase			Pension & Benefits for Staff	-10%	18%	
Ores	1%		1% Ores	7.5%	5%	Average salary	25%	10%	
Coal & Coke	-10%		2% Coal & Coke	7.5%	5%	Staff right sizing	-15%	-5%	
Black Metals	1%		1% Black Metals	7.5%	5%	Assets rationalization	0%	0%	
Construction Maerials	2%		3% Construction Maerials	7.5%	5%	Productivity gain/Material	-5%	-3%	
Oil & Oil Products	1%		1% Oil & Oil Products	7.5%	5%	Productivity gain on Op. Exp.	-5%	-3%	
Other	2%		3% Other	7.5%	5%	Provision for Bad Debts	5%	3%	
PASSENGERS	1999-01	2002-05	PASSENGERS	1999-01	2002-05	Barter ratio decrease	-10%	-5%	
Traffic growth (pkm)			Annual fare increase			Macro conditions	1999-01	2002-05	
International	-5%		-3% International	10%	5%	Economy growth	3%	5%	
National	-5%		-5% National	7.5%	5%	Severance payments	24.00	36.00	
Suburban	-20%		-15% Suburban	50%	15%	Profit Taxes	30%	30%	

SCENARIO	2		Exchange rate US\$/Hrv		2.00				
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01	2002-05	
Traffic growth (tkm)			Annual tariff increase			Pension & Benefits for Staff	-5%	21%	
Ores	1%		1% Ores	5%	3%	Average salary	15%	7%	
Coal & Coke	-8%		2% Coal & Coke	5%	3%	Staff right sizing	-10%	-5%	
Black Metals	1%		1% Black Metals	5%	3%	Assets rationalization	0%	0%	
Construction Maerials	2%		3% Construction Maerials	5%	3%	Productivity gain/Material	-3%	-2%	
Oil & Oil Products	1%		1% Oil & Oil Products	5%	3%	Productivity gain on Op. Exp.	-3%	-2%	
Other	2%		3% Other	5%	3%	Provision for Bad Debts	7%	4%	
PASSENGERS	1999-01	2002-05	PASSENGERS	1999-01	2002-05	Barter ratio decrease	-5%	-5%	
Traffic growth (pkm)			Annual fare increase			Macro conditions	1999-01	2002-05	
International	-5%		-3% International	8%	3%	Economy growth	1%	2%	
National	-5%		-5% National	5%	3%	Severance payments	12.00	18.00	
Suburban	-20%		-15% Suburban	30%	10%	Profit Taxes	30%	30%	

UKRAINE- TRANSPORT SECTOR REVIEW- RAIL SUBSECTOR							
SCENARIO	3		Exchange rate USS/Hrv		2.00		
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01 2002-05
Traffic growth (tkm)			Annual tariff increase			Pension & Benefits for Staff	5% 43%
Ores	-5%		0% Ores	1%	2%	Average salary	5% 5%
Coal & Coke	-2%		-5% Coal & Coke	1%	2%	Staff right sizing	-1% -2%
Black Metals	1%		1% Black Metals	1%	2%	Assets rationalization	0% 0%
Construction Maerials	1%		1% Construction Maerials	1%	2%	Productivity gain/Material	0% 0%
Oil & Oil Products	1%		1% Oil & Oil Products	1%	2%	Productivity gain on Op. Exp.	0% 0%
Other	1%		1% Other	1%	2%	Provision for Bad Debts	10% 10%
PASSENGERS	1999-01	2002-05	PASSENGERS	1999-01	2002-05	Barter ratio decrease	0% -5%
Traffic growth (pkm)			Annual fare increase			Macro conditions	1999-01 2002-05
International	-5%		-5% International	0%	1%	Economy growth	0% 1%
National	-5%		-5% National	0%	1%	Severance payments	0.00 0.00
Suburban	-5%		-5% Suburban	0%	1%	Profit Taxes	30% 30%

UKRAINE- TRANSPORT SECTOR REVIEW- ROAD SUBSECTOR

SCENARIO	1		Exchange rate US\$/Hrv	2.00					
INFRASTRUCTURE	1999-01	2002-05	USER CHARGES	1999-01	2002-05	INVESTMENT UNIT COST	1999-01	2002-05	1998
Road Network Length						Routine Maintenance			
Highways	1%		1% Fuel Levy	4.50	6.00	Highways	-7%	3%	2,400
Local roads	1%		1.5% Vehicle ownership charge	70.00	75.00	Local Roads	-7%	2%	1,229
			Turn over Tax	-30.0%		Periodic Maintenance			
						Highways	-7%	3%	8,570
						Local Roads	-7%	2%	3,960
PASSENGERS	1999-01	2002-05		1999-01	2002-05	Rehabilitation			
Traffic growth (pkm)						Highways	3%	2%	300,000
Vehicles	1.0%		8%			Local Roads	3%	2%	150,000
Fuel consumption	1.5%		10%			Road Administration	1%	2%	80.00
						Economy Growth	3%	5%	
SCENARIO	2		Exchange rate US\$/Hrv	2.00					
INFRASTRUCTURE	1999-01	2002-05	USER CHARGES	1999-01	2002-05	INVESTMENT UNIT COST	1999-01	2002-05	1998
Road Network Length				0		Routine Maintenance			
Highways	1%		1% Fuel Levy	4.00	4.50	Highways	-5%	2%	2,400
Local roads	1%		1% Vehicle ownership charge	70.00	70.00	Local Roads	-5%	2%	1,229
			Turn over Tax	-30%	0%	Periodic Maintenance			
						Highways	-5%	4%	8,570
						Local Roads	-5%	3%	3,960
PASSENGERS	1999-01	2002-05		0 1999-01	2002-05	Rehabilitation			
Traffic growth (pkm)						Highways	3%	2%	300,000
Vehicles	1%		5%			Local Roads	3%	2%	150,000
Fuel consumption	2%		7%			Road Administration	1%	2%	80
						Economy Growth	3%	5%	
SCENARIO	3		Exchange rate US\$/Hrv	2.00					
INFRASTRUCTURE	1999-01	2002-05	USER CHARGES	1999-01	2002-05	INVESTMENT UNIT COST	1999-01	2002-05	1998
Road Network Length				0		Routine Maintenance			
Highways	0%		0% Fuel Levy			Highways	1%	2%	2,400
Local roads	0%		0% Vehicle ownership charge			Local Roads	0%	1%	1,229
			Turn over Tax	-10%	-15%	Periodic Maintenance			
						Highways	1%	2%	8,570
						Local Roads	0%	1%	3,960
PASSENGERS	1999-01	2002-05		1999-01	2002-05	Rehabilitation			
Traffic growth (pkm)						Highways	3%	2%	300,000
Vehicles	1%		3%			Local Roads	3%	2%	150,000
Fuel consumption	1%		5%			Road Administration	0%	1%	80
						Economy Growth	3%	5%	

UKRAINE- TRANSPORT SECTOR REVIEW- AIRPORT SUBSECTOR

SCENARIO	1		Exchange rate US\$/Hrv		2.00				
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01	2002-05	
Traffic growth (ton)			Annual tariff increase			Pension & Benefits for Staff	35%	25%	
International	10%		5% International	7.5%	5%	Average salary	20%	10%	
Domestic	10%		5% Domestic	7.5%	5%	Staff right sizing	-25%	-5%	
PASSENGERS	1999-01	2002-05	PASSENGERS	1999-01	2002-05	Assets rationalization	0%	0%	
Traffic growth (pas.)			Annual fare increase			Productivity gain/Material	3%	5%	
International-Borispol	10%		5% International-Borispol	10%	5%	Productivity gain on Op. Exp.	3%	5%	
International	7%		5% International	10%	5%	Provision for Bad Debts	5%	3%	
Domestic	10%		5% Domestic	7.5%	5%	Barter ratio decrease	input data	input data	
						Macro conditions	1999-01	2002-05	
						Economy growth	3%	5%	
						Severance payments	24.00	36.00	
						Profit Taxes	30%	30%	

SCENARIO	2		Exchange rate US\$/Hrv		2.00				
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01	2002-05	
Traffic growth (ton)			Annual tariff increase			Pension & Benefits for Staff	35%	30%	
International	6%		4% International	7.5%	5%	Average salary	10%	7%	
Domestic	6%		4% Domestic	7.5%	5%	Staff right sizing	-15%	-5%	
PASSENGERS	1999-01	2002-05	PASSENGERS	1999-01	2002-05	Assets rationalization	0%	0%	
Traffic growth (pas.)			Annual fare increase			Productivity gain/Material	2%	3%	
International-Borispol	8%		3% International-Borispol	8.0%	3%	Productivity gain on Op. Exp.	2%	3%	
International	5%		3% International	6.00%	3%	Provision for Bad Debts	5%	5%	
Domestic	4%		3% Domestic	4.00%	3%	Barter ratio decrease	input data	input data	
						Macro conditions	1999-01	2002-05	
						Economy growth	1%	2%	
						Severance payments	12.00	18.00	
						Profit Taxes	30%	30%	

UKRAINE- TRANSPORT SECTOR REVIEW- AIRPORT SUBSECTOR								
SCENARIO	3		Exchange rate US\$/Hrv		2.00			
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01	2002-05
Traffic growth (ton)			Annual tariff increase			Pension & Benefits for Staff	35%	35%
International	5%		3% International	7.5%	5%	Average salary	5%	5%
Domestic	5%		3% Domestic	7.5%	5%	Staff right sizing	-1%	-2%
PASSENGERS	1999-01	2002-05	PASSENGERS	1999-01	2002-05	Assets rationalization	0%	0%
Traffic growth (pas.)			Annual fare increase			Productivity gain/Material	2%	3%
International-Borispol	5%		2% International-Borispol	5%	2%	Productivity gain on Op. Exp.	2%	3%
International	3%		2% International	3%	2%	Provision for Bad Debts	7%	7%
Domestic	3%		2% Domestic	2%	2%	Barter ratio decrease	input data	input data
						Macro conditions	1999-01	2002-05
						Economy growth	0%	1%
						Severance payments	0.00	0.00
						Profit Taxes	30%	30%

UKRAINE- TRANSPORT SECTOR REVIEW- PORT SUBSECTOR

SCENARIO	1		Exchange rate	2.00				
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01	2002-05
Traffic growth			Annual tariff increase			Pension & Benefits/Staff	35%	25%
Liquid	10%	5%	Port Dues (vessels)	-10%	2%	Average salary	20%	10%
Bulk	3%	2%	Port Dues (Goods)	-5%	2%	Staff right sizing	-25%	-5%
General cargo	10%	10%	Cargo handling	-5%	2%	Non permanent Staff %		
TRAFFIC STRUCTURE	1999-01	2002-05	VESSELS	1999-01	2002-05	Assets rationalization		
Export	3%	3%	Traffic increase (%)			Material	3%	5%
Import	2%	2%	Cat 1	10%	10%	Op. Exp.	3%	5%
Transit	10%	5%	Cat 2	10%	10%	Provision for bad debts	1%	1%
TRAFFIC STRUCTURE	1999-01	2002-05	Cat 3	10%	10%	Barter ratio decrease	-25%	-5%
			Annual tariff increase			Macro conditions	1999-01	2002-05
Black Sea	4%	1%	Cat 1	10%	10%	Economy growth	3%	5%
Azov sea	-2%	-1%	Cat 2	10%	10%	Severance payments	24	36
Danub Region	-2%	-1%	Cat 3	10%	10%	Profit Taxes	30%	30%

SCENARIO	2		Exchange rate	2.00				
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01	2002-05
Traffic growth			Annual tariff increase			Pension & Benefits/Staff	40%	30%
Liquid	5%	3%	Port Dues (vessels)	-5%	2%	Average salary	15%	5%
Bulk	2%	1%	Port Dues (Goods)	-3%	2%	Staff right sizing	-10%	-5%
General cargo	n.d	n.d	Cargo handling	-3%	2%	Non permanent Staff %		
TRAFFIC STRUCTURE	1999-01	2002-05	VESSELS	1999-01	2002-05	Assets rationalization		
Export	2%	1%	Traffic increase (%)			Material	1%	2%
Import	2%	1%	Cat 1	2%	1%	Op. Exp.	1%	2%
Transit	8%	5%	Cat 2	8%	5%	Provision for bad debts	2%	2%
TRAFFIC STRUCTURE	1999-01	2002-05	Cat 3	8%	5%	Barter ratio decrease	n.d	n.d
			Annual tariff increase			Macro conditions	1999-01	2002-05
Black Sea	2%	1%	Cat 1	2%	1%	Economy growth	1%	2%
Azov sea	-1%	-1%	Cat 2	-1%	-1%	Severance payments	24	36
Danub Region	-1%	-1%	Cat 3	-1%	-1%	Profit Taxes	30%	30%

UKRAINE- TRANSPORT SECTOR REVIEW- PORT SUBSECTOR

UKRAINE - TRANSPORT SECTOR REVIEW - PORT SUBSECTOR									
SCENARIO	3	Exchange rate US\$/Hrv		2.00					
FREIGHT	1999-01	2002-05	FREIGHT	1999-01	2002-05	Operating Expenditures	1999-01	2002-05	
Traffic growth			Annual tariff increase			Pension & Benefits/Staff	40%	40%	
Liquid	n.d3	n.d3	Port Dues (vessels)	-1%	-1%	Average salary	1%	2%	
Bulk	n.d3	n.d3	Port Dues (Goods)	-1%	-1%	Staff right sizing	-1%	-1%	
General cargo	n.d3	n.d3	Cargo handling	-1%	-1%	Non permanent Satff %			
TRAFFIC STRUCTURE	1999-01	2002-05	VESSELS	1999-01	2002-05	Assets rationalization			
Export	1%	1%	Traffic increase (%)			Material	1%	2%	
Import	2%	2%	Cat 1	n.d3	n.d3	Op. Exp.	1%	2%	
Transit	5%	2%	Cat 2	n.d3	n.d3	Provision for bad debts	3%	3%	
TRAFFIC STRUCTURE	1999-01	2002-05	Cat 3	n.d3	n.d3	Barter ratio decrease	n.d	n.d	
			Annual tariff increase			Macro conditions	1999-01	2002-05	
Black Sea	0%	0%	Cat 1	n.d3	n.d3	Economy growth	1%	2%	
Azov sea	0%	0%	Cat 2	n.d3	n.d3	Severance payments	0	0	
Danub Region	0%	0%	Cat 3	n.d3	n.d3	Profit Taxes	30%	30%	

Annex 5.1. Advisory Unit Functions

1. **Three Advisory Units.** Three advisory units would support the Minister's office in its daily activities: the Economic Unit, the Legal Unit and the International Unit. Each of these would have well defined responsibilities as described below. The Economic Unit would notably assess and monitor the economic impact of policies or investments, define infrastructure needs, formulate the budget of the Ministry accordingly. The Legal Unit would prepare the legal framework for the transport sector and monitor its implementation. The International Unit would facilitate the international integration of Ukraine and its regional cooperation.

2. **Economic Unit.** The economic unit would have the following functions :

- (i) Participate in the formulation of policies, plans and strategies of the Government for the sector;
- (ii) Follow up on the implementation of these and report to the Minister;
- (iii) Carry out studies to evaluate the implementation of sector policies or play counterpart role in studies contracted with external companies;
- (iv) Evaluate the subsidy requests, if any, presented by the sub-sector Departments;
- (v) Support the monitoring by the Ministry of state transportation companies;
- (vi) Execute programs that exceed the exclusive scope of the sub-sector Departments of the Ministry;
- (vii) Identify and evaluate feasible projects in the sector and prepare the necessary documentation to obtain credits or contributions from international organizations, and regular reporting to the Minister;
- (viii) Administrate or delegate the administration of funds or credits granted by international organizations to the benefit of the Ministry and the sector;
- (ix) Assist in the formulation of the Ministry's budget, and represent the sector in the budgets analysis of state transportation companies with the Ministry of Finance;
- (x) Compile, process and publish sector statistics in coordination with sub-sector Departments;
- (xi) Define the transport infrastructure needs, according to sub-sector department requirements and (vii) above.

3. **Legal Unit.** The legal unit would perform the following functions:
- (i) Provide legal advice to the Minister and sub-sector Departments;
 - (ii) Review legality of draft laws, draft international agreements, supreme decrees and ministerial resolutions;
 - (iii) Maintain and publish legislation related to transport;
 - (iv) Monitor compliance with international agreements and national laws in coordination with the sub-sector Departments
 - (v) Examine the legality of applicable sanctions, suspension, application of fines and service cancellations.
 - (vi) Advise the Minister in the relationships with the Parliament related to the presentation and examination of draft legislation;
 - (vii) Elaborate the legal framework of the transport sector.
4. **International Unit.** The international unit would perform the following functions:
- (i) Advise the Minister and the sub-sector Departments of transportation, on international matters especially in European Union;
 - (ii) Prepare texts, with the help of staff from the Legal Unit and Ministry of Foreign Affairs, related to international transport agreements;
 - (iii) Organize international transportation meetings, and advise the official representations of the Ministry on their interactions with International Transport Organizations.

Annex 6.1. Customs, Border Crossing and Documentation

Corrective Actions

1. The type of actions required to reduce the difficulties at border crossing have been increasingly applied worldwide with some successful example of countries and group of countries where procedure and documentation streamlining now allows real time clearance of shipments or free circulation of goods through the borders (EU). In the case of Ukraine, a number of measures could be taken to streamline and reform import and export procedures and documentation to conform to regional and international standards. It would remove a substantial part of the excess cost linked to trade for a rather modest cost. The measures are presented below in three categories: (i) Customs and cargo inspection procedures; (ii) documentation, freight forwarding and transport conventions; and (iii) border crossing improvements.

Customs and Cargo Inspection Procedures

- (a) Streamline and harmonize Customs and other Ministries clearance procedures to international standards; Instruct Customs authorities to focus and limit their activity to their basic duties and areas of expertise, and remove from their responsibility additional tasks, such as collecting road taxes.
- (b) Standardize nationwide the application of customs regulations; organize information channels about existing rules and forthcoming changes.
- (c) Stimulate intensive national and regional co-operation in border crossing and customs procedures.
- (d) Replace procedures involving 100% examination of imports and exports by more cost-effective methods, involving risk analysis, according to the EU Rationalized Examination Procedures. Use new computer systems to effectively target potential vehicles for inspection. Extensive checks on high-risk trucks should be substituted to superficial checks on all vehicles.
- (e) Create simplified border crossing procedures for reliable companies (respecting TIR Carnet convention) and adopt pre-entry clearance and pre-shipment inspection procedures.
- (f) Establish a computerized information system at the border-crossing checkpoints and inland customs enabling an electronic transfer of trade related data. This effort should be conducted in close regional partnership so as to integrate the different computer systems used by neighbouring countries and define a regional IT strategy (CEK Siemens in Poland, Sofix in Czech Republic, Asycuda 3++ in Hungary, Asycuda in Slovakia and in Ukraine, and Bespoke in Slovenia).

- (g) Inform, instruct and control customs officers about the application of changed regulations and new conventions.
- (h) Develop Memoranda of Understanding between customs and trade organizations to ensure the introduction of control measures common to all neighboring countries and the European Union.
- (i) Facilitate fast processing for transit traffic by reducing transit traffic inspection requirement and by introducing the EU Community Transit (CT) system in order to improve the present transit guarantee system.
- (j) Provide Customs clearance facilities at approved inland container terminals and at established enterprises. Containers to and from these places should be allowed to be moved by both road and rail with a minimum of restrictions in the form of guarantees and/or deposits. Customs have to lay down clear instructions for the inland movement, handling, stuffing /de-stuffing of containers. The private sector should be allowed and stimulated to set-up and operate container terminals as common user facilities.
- (k) Introduce measures to address poor morale of under-trained and underpaid officers and set their salaries at market rate (as applied in forwarding agencies): establish regular training programs to support a professional Customs service.
- (l) Provide Customs with commercial information for checking guarantors at the time of final clearance of goods, away from the borders and in advance of consignments.

Documentation, Freight Forwarding and Transport Conventions

The international legal and regulatory framework for Trade and Transport existing in Ukraine should be supplemented to accommodate the following features:

- (a) Introduce in cooperation with main commercial partners and neighboring states one single multimodal transport document in line with international standards.
- (b) Replace the TIR Carnet, by an alternative type of transit system namely the Community Transit (CT) system (used in the EU), which consists of a five part Cargo Declaration, plus a Transit Advice Notice, which can be used as the control document without modification.
- (c) Generalize the use of UN aligned commercial documentation and have them adopted by all Trade Associations.
- (d) Ratify and implement the following conventions :
 - CMR Convention (which imposes substantial liabilities on road hauliers which cannot be avoided or reduced by private contract),
 - FIATA Convention (covering combined transport shipments),
 - COTIF Convention (covering goods shipped internationally by rail);

- Customs Convention on Containers (1972);
- Customs Convention on the International Transport of Goods under cover of TIR Carnets (TIR Convention) (1975);
- International Convention on the Harmonization of the Frontier Control of Goods (1982);
- Convention on the Liability of International Terminal Operators (1991); and
- Convention on customs treatment of pool containers used in international transport of 1994

(e) Generalize the following documents for Transport and Trade:

- Negotiable FIATA Combined Transport Bill of Lading (specifically used when more than one mode of transport is used),
- Dangerous Goods Note (usually required to be produced both by Customs and Police during international transits),
- Aligned Export Cargo Shipping Instructions (which provides the freight forwarder with all information needed to effect a shipment),
- FIATA Forwarders Certificate of Receipt (signifying that the forwarders obligations and responsibilities apply from this point on until fulfilment of the contract in terms of the movement of the goods), and
- Standard Shipping Note (containing information about the shipment).

(f) Generalize the following banking and insurance documents :

- Aligned Bank Collection Form (instructing the buyer's bank on how to process a documentary collection),
- Bill of Exchange (instructions from the purchaser to a third party to pay the seller an agreed amount at a specific time), and
- Certificate of Insurance (providing evidence that an export shipment has been insured and the goods covered during transit).

All key international documentation should be in both Russian and English.

- (g) Establish better relationships between Customs Officers, Customs clearance Agents, freight forwarders and the private sector. Closer working relationships should focus on common data collection, the use of intelligence, and the introduction of Memoranda of understanding between customs and trade organisations to apply common control measures in a climate of mutual trust.

Border Crossing Physical Improvements

2. A high priority is to improve border-crossing points by providing the most critical ones reviewed with infrastructure equipment, access roads and personnel. The Korczowa project of new border crossing facility seems justified but small-scale improvements of the Dorohursk crossing

should also be introduced. The major bottlenecks at the Vysne Nemecke and Zahony border crossing could be easily overcome with small investment. A TACIS study of border posts will give a more detailed set of recommendations and cost estimate on this topic.

Annex 6.2. Infrastructure and Service Quality Barriers

Infrastructure

1. **Poor Road Condition.** Ukrainian roads are in disrepair, with unmarked potholes and a lack of systematic lane delimitation. Separated highways are scarce. The best stretches are those linking Lviv to Kiev and Kiev to Odessa, but smaller roads are not within European norms. FSU-made vehicles, which for the most part do not fulfill the norms required for being driven in Europe, are more robust and adapted to these roads than European made trucks, which are more technologically sensitive and wear out more quickly on bad roads.
2. **Inefficient Gauge Transfer.** Much of the excess railway infrastructure capacity is obsolete. Particular shortfalls are noted in connection with border crossings and the shortage of specialized wagons. The different gauge system used in Europe (1.43 m) and the CIS (1.51 m) results in labor intensive activity and delays while simple mechanical technology for adjusting bogie gauges exists. Traffic capacity and facilities on the busy railways routes of Chop-Kiev-Moscow and Ilychevsk-Bryansk-Moscow need upgrading, along with railway outlets from the Chop and Mostiska border stations and approaches to Far Eastern seaports.
3. **Poor Condition of Waterways.** Obsolete infrastructure, handling, storage and pickup/delivery facilities constitute serious handicaps for taking advantage of waterway transport potential. Little maintenance has been carried out in recent years. Dredging is not up to requirements. Lock gates do not always properly operate.

Service Quality

4. **Cost of Services.** Overall the cost of international transport services via Ukraine is high, especially in the port and railway sector when considering the transfer from one mode to another and hidden costs. This applies specially to container transport and high value goods for which substantial non-transport transit costs are charged to shippers
5. **Road Transport Services.** Truck drivers and mechanics in Ukraine have a poor image (alcoholism, theft, and personal commerce). Service quality is poor, with delays and delivery errors detrimental to the customer. Small clients have even more difficulty obtaining the service quality they expect. Some drivers are reported as conducting parallel and non-transparent activities. Competition by European carriers is substantial. Foreign companies find it difficult to obtain from local manpower to give priority to the company's interest over their own. Growth and profit are not perceived as valid objectives. Low skilled employees prefer to take advantage of short-term gain opportunities and disregard long term future consequences. Simultaneously foreign companies attempt to link remuneration to results, by paying higher wages and prohibiting activity external to that of the company. Ukrainian companies encounter more difficulty in managing their personnel and having it focus on company operations.
6. **Trucking Documentation.** Since Ukraine has not fully adhered to the CMR convention, CMR documents routinely used by carriers often do not conform to international law. As a result, the carrier rarely reimburses the shipper in case of damage or loss as required by the Convention under international law. The increasing difficulties of the International Road Union (IRU), the

national guaranteeing association and the international insurance pool, as well as national customs authorities has prompted the Council of the European Union to seek radical changes in the system, still under review. At present, the system is causing serious difficulties at the borders.

7. **Railway Transport Services.** The organizational set up of the railway result in political and non-commercially sound decisions in terms of tariffs leading to cross subsidies between services. Ukrainian Railways – UKRZALISNITSA – fall under the authority of the Ministry of Transport and the Deputy Minister for Railways. The state has so far refused to let tariffs evolve in a market economy, on the ground that Ukrainian manufacturers would not be in position to absorb the resulting transport cost increases. Yet, shipping tariffs for containers are set too high at the level of truck services despite the much slower service offered. Several maritime operators (CMN, CMA, MAERSK and SEALAND) protested officially against high rates quoted for carrying transit containers by train. Transit containers appear as subsidizing lower tariffs applied to ores, coal and steel products. None of these tariffs reflects market conditions, and they rather represent a subsidy for low productivity producers, particularly penalizing the development of the waterway mode. 21 days on average of delay for rail traffic

8. **Air Transport Services.** Kiev-Borispol is the only airport set to international standards, both in terms of infrastructure and services. Delays and inefficiencies are observed in the other airports. Overall transport chain dependability can only be guaranteed by international messenger companies, such as UPS or DHL. Transfers from terminals to town present the risk of partial or total shipment theft. Only the use of large and well-known companies prevents this risk but it comes at a high premium.

9. **Current Intermodal Operations.** Customers in Ukraine still have to rely mainly on their own transport to transport their freight from the port or railway terminal to the destination point, using their own trucks or those of a trucking company they selected and paid. Unloading of containers is mostly based on transshipment via the storage area. Container terminal operations are time consuming. International intermodal rail transport to and from Ukraine is in the present circumstances not competitive with road transport, timewise and qualitywise. The railways are still using the single-wagon railway transport system; no block trains, no train shuttles, although efforts are made in that direction.

10. **Staff Issues.** Management and administrative staff in larger Ukrainian transport companies, was found lacking training and familiarity with international conditions and practices, particularly in matters of international law, modern technology and even geography. Due to the lack of personnel trained abroad to apply modern western approaches to international freight hauling, the emergence of private or quasi-private companies did not result in replacing upper management and administrative staff. This staff is admittedly familiar with its client network, but unable to run the company in a market open to competition. Small companies are better adapted but client follow-up leaves to be desired. Low-paid labor lacks training, motivation and dependability. Truck drivers constitute a strong and cohesive group. They are reported to pay an “entry fee” in order to be recruited in international transport enterprises, as travel offers them additional personal business and income opportunities. Although most of them have mechanical knowledge, they cannot be expected to use their ability in this domain. A few foreign companies have recently provided training to improve their staff’s performance, particularly for staff operating in ports. Such training needs to be expanded and generalized.

11. **Overall Service Quality Shortfalls.** Logistics in Ukraine is still considered exogenous to transport activities and given little attention, although its impact on transport demand is significant, notably in the agricultural sector. Communications between carriers and shippers is minimal so that it is difficult to get information on the implementation status of the transport contract. Ukrainian companies logistic facilities are substandard: telephone and fax lines, computers and software (email), handling equipment, Global Positioning System for vehicle tracking, storage organization are generally under used and under performing. Often, the carrier will misinform the client rather than admit negligence, error or incompetence. Small shippers receive little attention. Training lacks in the areas of inventory management, quick location and delivery of the goods, and overall logistic activities are considered exogenous to the hauling activity. Satisfactory service can only be found in reputable foreign enterprises. As a result, considerable delays can be observed if goods must be forwarded or re-expedited. Packaging and handling methods (loading, unloading and reloading) are obsolete and inadequate except, to some extent, in major ports where loading and transshipment are mechanized.

Annex 6.3. Multimodal Transport Measures

1. The development of multimodal transport comes from the optimal integration of various mode within a policy framework fostering competition. A series of measures pertaining to the legal framework and physical handling capacity would enable the successful development of multimodal transport:

Formulate policy fostering the regional and international integration of Ukraine :

- Harmonize fundamental transport legislation with EU;
- Develop block trains and shuttle services along major corridors;
- Develop a uniform policy to integrate Ukrainian infrastructure in Trans-European Transport Network;
- Build European standard gauge lines for connection to the Transport European Networks;
- Participate actively in the Black Sea Economic Cooperation (BSEC)
- Adhere, ratify and **implement** the following conventions:
 - (a) International Convention on the Contract for the International Carriage of Goods by Road (CMR)
 - (b) Customs Convention on Containers (1972)
 - (c) Customs Convention on the International Transport of Goods under cover of TIR Carnets (TIR Convention) of 1975
 - (d) International Convention on the Harmonization of the Frontier Control of Goods (1982)
 - (e) Convention on the Liability of International Terminal Operators 1991
 - (f) Convention on customs treatment of pool containers used in international transport of 1994

Formulate policy fostering multimodal development (door to door transport chain) :

- Develop framework for the optimal integration of different mode including for their infrastructure development plans;
- Stimulate cooperation between public and private parties involved in distribution;
- Provide Customs clearance facilities at approved inland container terminals and at established enterprises. Containers to and from these places should allowed to be moved by both road and rail with a minimum of restrictions in the form of guarantees and/or deposits.
- Prepare clear instructions for customs to act on the inland movement, handling, stuffing/de-stuffing of containers.
- Create a suitable transport insurance system for containerized cargo (identifying clearly liabilities in accordance with international standards) using the draft handbook for Multimodal Transport for Officials and Practitioners (UNCTAD, Geneva, 1995)
- Simplify Border Crossing (Annex 6.1)

Improve container handling capacity

- Modernize existing terminal and plan new terminals
- Develop container handling facilities in sea and river ports and inland terminals

Stimulate private participation in infrastructure

- Stimulate set up and operation of container terminals as multi-user facilities by the private sector.

Annex 6.4 Corrective Measures and Related Cost for Modal Inefficiencies

1. **Road.** Driver and transportation personnel training activities are estimated at US\$1 million (short term, for 50 professionals to be trained as trainers and managers) and US\$2 million (medium term, for 200 professionals, over 3 years, to be trained as international class truckers-mechanics with basic trade documentation knowledge), on the all inclusive basis of US\$ 10,000 per month of training abroad.
2. **Rail.** At present, the magnitude of the improvements is such that US\$ 10 million (short term) is estimated to be a minimum required amount. Restructuring and adapting the rolling stock for container transport is estimated to cost US\$ 2 million, on the short term. Assisting in moving toward creating a competitive environment between transport modes and within the terminal operations of the rail sector itself requires technical assistance estimated at US\$ 300,000.
3. **Air.** The improvement of air transport competitive position for small volumes of high value freight, with respect to other modes, would be achievable by reducing tariffs and taxes. Such a measure can be achieved following a technical assistance expertise by a management consultant firm, for an estimated amount of US\$ 200,000 (short term), inclusive of expatriate manpower cost. Its implementation would result in increased revenues from increased freight throughput.
4. **Maritime Transport.** These measures developed in Chapter 9 will require substantial technical assistance in addition to equipment costs. Technical assistance covering all the ports is estimated at 60 man-months or US\$ 1 million (short term). It consists of management review, staff training, and policy analysis assistance to the MOT. This figure excludes the cost of equipment requirements for which use of leasing could be more appropriate.
5. **River Transport.** These measures developed in Chapter 9 would require technical assistance in the form of policy advice and program development, estimated at 30 man-months or US\$ 500,000. In-depth studies should indeed be conducted to analyze competition between and within modes, and to remove preferential tariffs and other subsidies and distortions in investments, all of which prevent this particular mode to become viable and to yield benefits to users.
6. **Logistic and Management.** Corrective training activities are similar to those discussed under general trucking, but do not duplicate them. They are estimated to US\$ 1 million in the short term, and US\$ 2 million in the medium term. Other corrective measures pertain to government general economic policy making. Their scope and complexity nevertheless require technical assistance, which in this case is estimated at US\$ 2 million (short term). Total funding required thus amounts to US\$ 3 million in the short term and US\$ 2 million in the medium term.

Annex 6.5 Security and Insurance Issues

1. Quality and quantity export certification procedures conducted by SGS and Veritas are costly and require advance notice. These procedures are not always followed by shippers of small consignments, leading to complications and delays at borders. Large foreign shippers use their services more systematically, as their expertise is usually a deciding factor in cases of litigation. It is estimated that 10 percent of their activity is devoted to quantity certification, while 90 percent is devoted to quality control, particularly as far as oils, cereals, sugar and dairy products are concerned. During import expertise, it is not unusual to observe losses and thefts amounting to 15 percent of the shipment.

2. **Goods' Security.** Theft and pilferage constitute a reality, and this problem must be accounted for. It is seldom possible to sue the Ukrainian carrier in case of bad faith. Risk of cargo theft cannot be excluded, although gunpoint attacks, as those occurring in other countries, have not recently been reported. For sensitive goods liable to excise taxes, such as alcohol, tobacco and automotive vehicles, armed escort is recommended. This service is costly and amounts to about one US\$ per km, that is, US\$ 500 from Kiev to the border. Conversely, insurance rates are reduced for such escorted convoys.

3. **Insurance.** Fragmented insurance transaction with mandatory use of local insurer increase substantially insurance cost. There are about 230 licensed insurance companies. The quality of service and the financial health of most of these companies are reportedly poor, except for a handful of them, with which reputable foreign companies are willing to work with. International insurance of both hull and shipment is costly, due to the mandatory use of Ukrainian insurance companies intermediary, which given their under-capitalization, can only retain part of the transaction, while re-insuring abroad its largest fraction. This two tier system, besides being expensive in itself, leaves the door open to fixing insurance premiums in a fashion that is arbitrary and variable from insurer to insurer and from a transaction to another. Indeed, there is no way to know beforehand how many intermediaries will be involved and how much commission they will ask for. Foreign companies are also submitted to this process, as the transaction must be fragmented. It often is decided that the foreign company will insure for the full amount so that the "fraction" conceded to the local company represents a necessary excess-cost not likely to be associated with an actual service.

Table 7.1 Road Infrastructure- Cost Recovery Analysis

Routine and Periodic Maintenance under Normalized Conditions : Assumptions and Proposed Cost Recovery Mechanism

Source : Ukravtodor, Carl Bro Group, Road User Charges Model 2.0

	Total		Cars		Minibus		Bus		Truck 2 axles		Truck 3 axles		Truck + Trailer		Articulated Truck	
	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005
	ESAL-km (million)	6,655	7,947	3	4	2	2	1,433	1,738	1,191	1,445	1,231	1,490	807	979	1,988
Vehicle-km (million)	43,019	54,719	29,016	37,808	1,194	1,447	1,235	1,498	6,871	8,343	2,542	3,078	987	1,197	1,174	1,348
Registered Vehicles ('000)	9,442	11,773	6,274	8,025	238	285	249	298	1,016	1,218	465	556	605	725	595	666
Automotive Fuel Consumption (million litres)	7,701	10,103	2,209	3,112	220	283	551	707	2,008	2,580	1,169	1,497	702	900	842	1,024
VARIABLE COSTS OF ROAD USE																
Vehicle Related (MUSS/Year)	93	100	63	69	3	3	3	3	15	15	5	6	2	2	3	2
Loading Related (MUSS/Year)	207.9	276.7	0.1	0.1	0.1	0.1	44.8	60.5	37.2	50.3	38.5	51.9	25.2	34.1	62.1	79.7
Total Variable Cost to Cover (US\$/year)	301	376	63	69	3	3	47	63	52	66	44	57	27	36	65	82
Vehicle Related (Usc/Veh.km)	0.22	0.18	0.22	0.18	0.22	0.18	0.22	0.18	0.22	0.18	0.22	0.18	0.22	0.18	0.22	0.18
Loading Related (Usc/Veh.km)	0.48	0.51	0.00	0.00	0.00	0.01	3.63	4.04	0.54	0.60	1.51	1.69	2.55	2.85	5.29	5.91
Total Variable Cost to Cover (Usc/Veh.km)	0.70	0.69	0.22	0.18	0.22	0.19	3.84	4.22	0.76	0.79	1.73	1.87	2.77	3.03	5.51	6.09
Fuel Levy to Cover Variable Costs																
Proposed Fuel Levy (Usc/liter)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Annual Fuel Charge Revenues (MUSS)	308	404	88	124	9	11	22	28	80	103	47	60	28	36	34	41
Exceeding/(Insufficient) Coverage of Variable Costs	7	28	26	56	6	9	(25)	(35)	28	38	3	2	1	(0)	(31)	(41)
Charges to Cover Fixed and Remaining Variable Costs																
Proposed Annual Vehicle Ownership Charge (US\$/vehicle)	69	66	15	15	30	30	105	120	150	150	200	200	200	200	260	260
Annual Vehicle Ownership Revenues (MUSS)	648	777	94	120	7	9	26	36	152	183	93	111	121	145	155	173
Contribution to Fixed Costs (MUSS)	656	805	120	176	13	17	1	1	181	220	96	114	122	145	124	132
Expected Total Road User Revenues (MUSS)	957	1,181	182	245	16	20	48	64	233	286	140	171	149	181	188	214
Additional Direct Costs due to Charges (Usc/km)	2	2	0.6	0.6	1.3	1.4	4	4	3	3	5	6	15	15	16	16
Current Costs (Usc/km)			12	12	23	23	58	58	33	33	42	42	54	54	56	56

Road Network Maintenance and Rehabilitation Normalized Needs	Total State Roads		Highways		Local Roads	
	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005	Annual Average 1998-2000	Annual Average 2001-2005
	Number of km	173670	181698	30926	32198	142744
Average Width to Maintain (with partial Shoulders)	6.7	6.7	9.1	9.1	6.2	6.2
Routine Repair and Maintenance (km)	173670	181698	30926	32198	142744	149500
Routine Maintenance Unit Cost (US\$/km)			2000	2082	1024	1031
Routine Maintenance Annual Cost (MUSS)	208	221	62	67	146	154
of Which Fixed Costs (MUSS)	195	206	53	57	143	150
of Which Variable Costs (MUSS)	13	15	9	10	3	5
Average Cost of Periodic Maintenance (\$/km)			7142	7464	3300	3626
Periodic Maintenance (MUSS)	692	782	221	240	471	542
of Which Fixed Costs (MUSS)	484	506	184	192	300	314
of Which Variable Costs (MUSS)	208	277	37	49	171	228
Annual Maintenance Needs (MUSS)	900	1004	283	307	617	696
Administrative Costs (MUSS)	80	85	25	26	55	59
Fixed Costs (MUSS)	679	712	237	249	443	463
Load Related Variable Costs (MUSS)	208	277	37	49	171	228
Vehicle Related Variable Costs (MUSS)	93	100	34	36	58	64

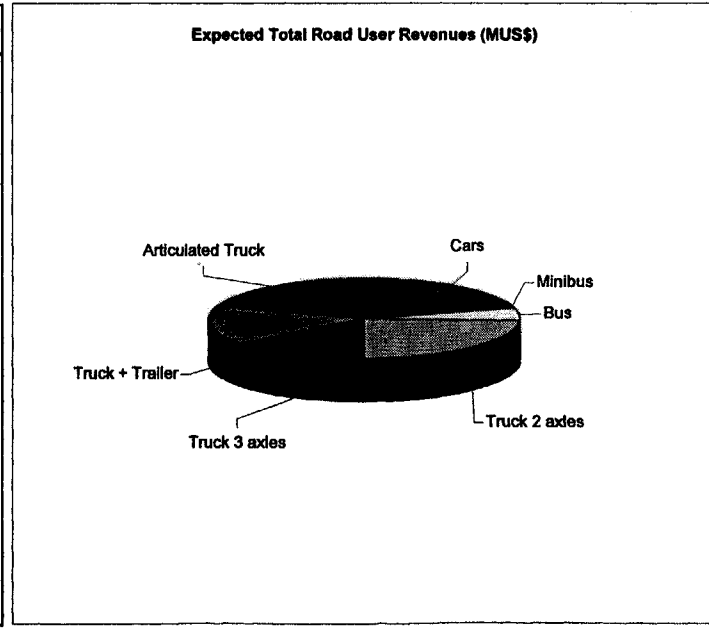


Table 7.2.1
TRANSPORT SECTOR REVIEW
ROAD INFRASTRUCTURE SECTOR

Scenario 1: Complete Reform
Forecasted Statistics
for the years ended december 31st

детаљний прогноз

projections

перспективно

	1998
Operation Statistics	
Road Network Number of 000'km	172.0
Highways	31.0
Local roads	141.0
Registered Vehicles ('000)	9,300.4
Automotive Fuel Consumption (million litres)	7,585.5

	1999	2000	2001
	173.7	175.5	177.2
	31.3	31.6	31.9
	142.4	143.8	145.3
	9,393.4	9,487.3	9,582.2
	7,699.3	7,814.8	7,932.0

	2002	2003	2004	2005
	179.7	182.2	184.8	187.4
	32.3	32.6	32.9	33.2
	147.5	149.7	151.9	154.2
	10,348.8	11,176.7	12,070.8	13,036.5
	8,725.2	9,597.7	10,557.5	11,613.2

Graph 7.2.3: Main Financial Indicators

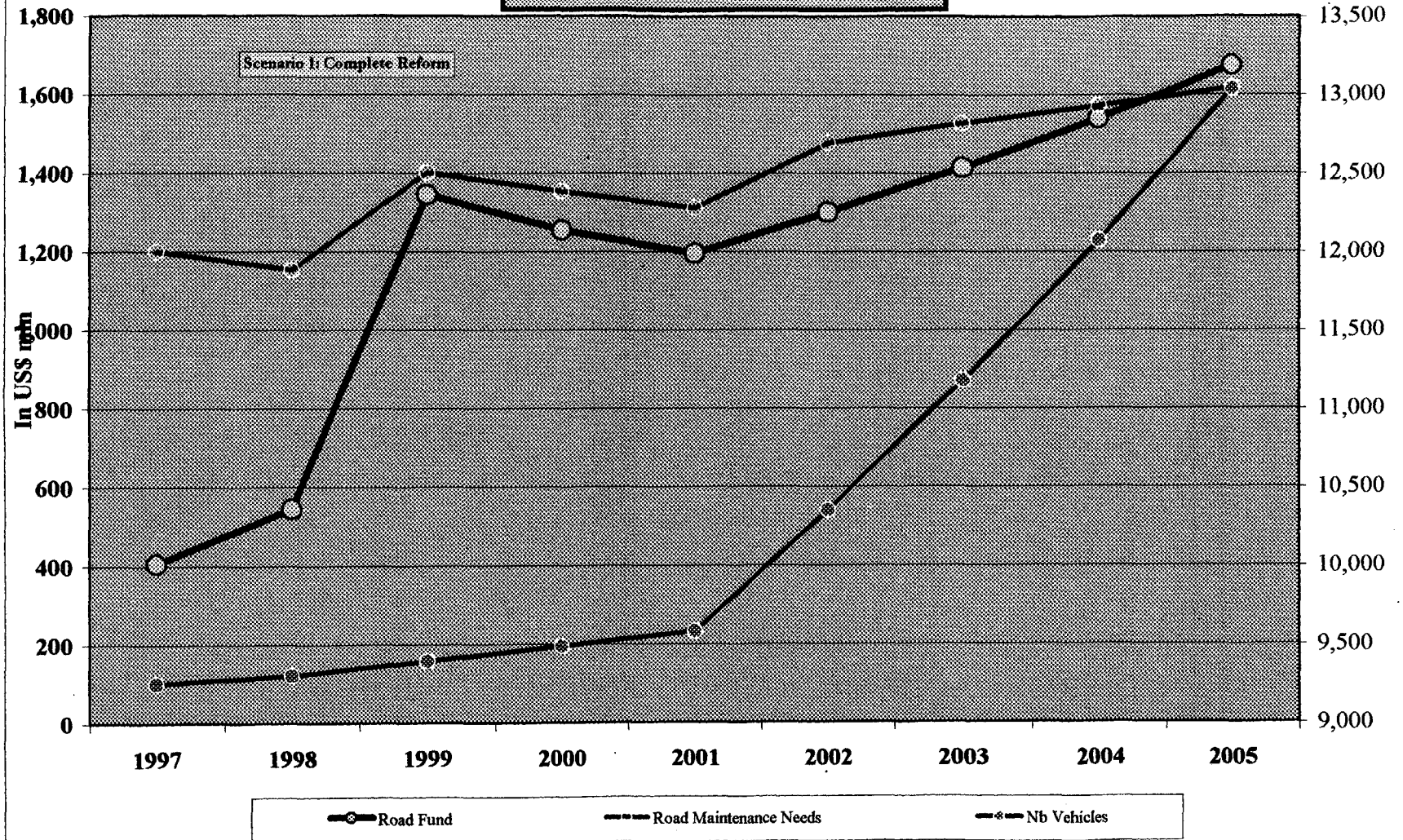


Table 7.2.1
TRANSPORT SECTOR REVIEW
ROAD INFRASTRUCTURE SECTOR

Автомобильный Транспорт

Forecasted Statistics

for the years ended december 31st

детальный прогноз

projections

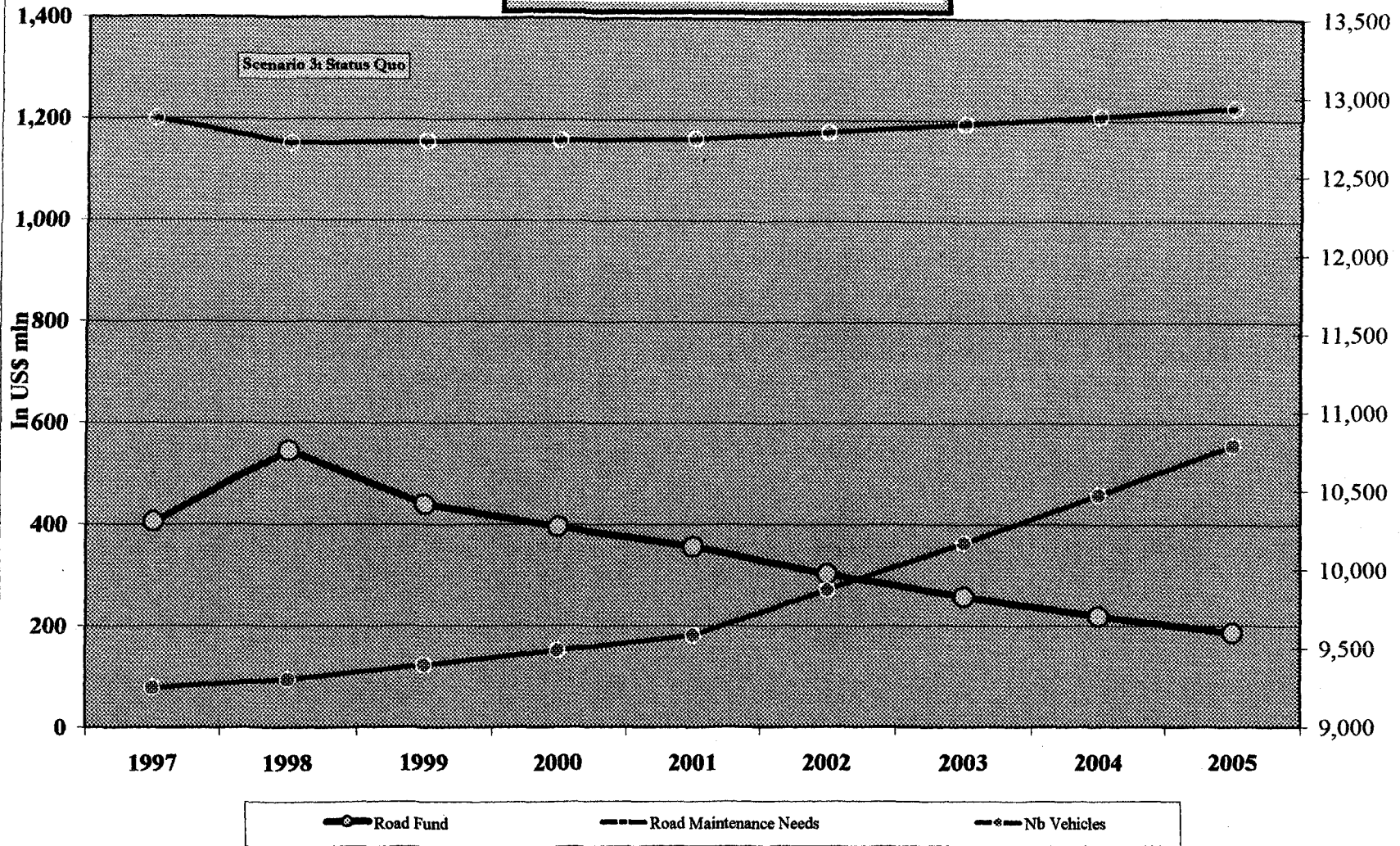
перспективно

	1998
Operation Statistics	
Road Network Number of 000'km	172.0
Highways	31.0
Local roads	141.0
Registered Vehicles ('000)	9,300.4
Automotive Fuel Consumption (million litres)	7,585.5

	1999	2000	2001
Road Network Number of 000'km	172.0	172.0	172.0
Highways	31.0	31.0	31.0
Local roads	141.0	141.0	141.0
Registered Vehicles ('000)	9,393.4	9,487.3	9,582.2
Automotive Fuel Consumption (million litres)	7,661.3	7,738.0	7,815.3

	2002	2003	2004	2005
Road Network Number of 000'km	172.0	172.0	172.0	172.0
Highways	31.0	31.0	31.0	31.0
Local roads	141.0	141.0	141.0	141.0
Registered Vehicles ('000)	9,869.6	10,165.7	10,470.7	10,784.8
Automotive Fuel Consumption (million litres)	8,206.1	8,616.4	9,047.2	9,499.6

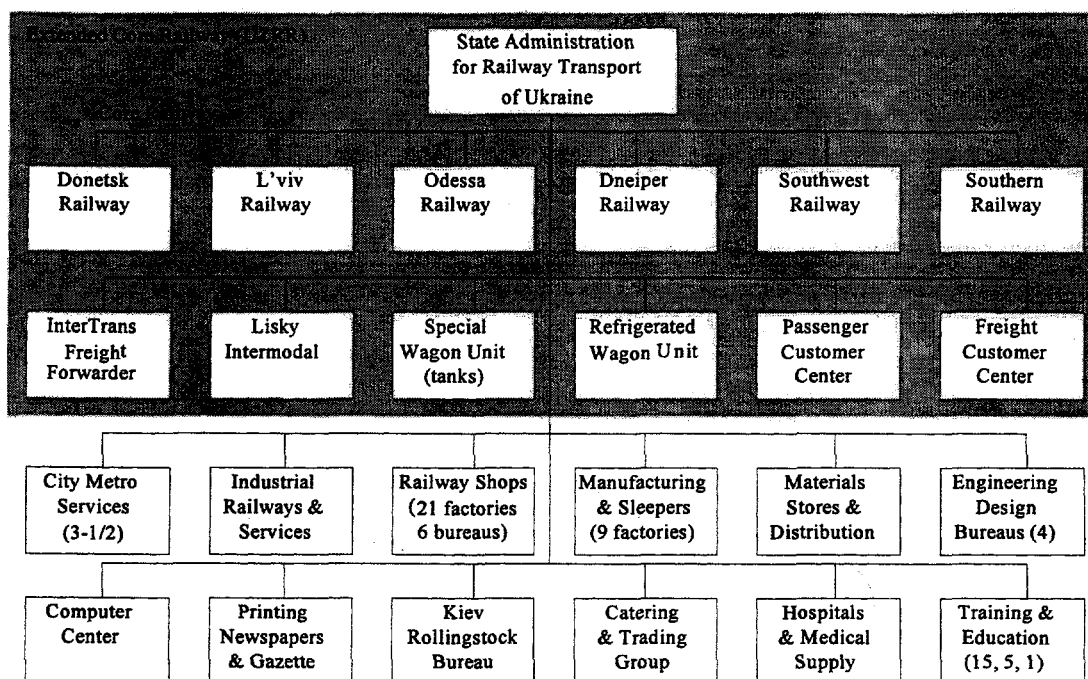
Graph 7.2.3: Main Financial Indicators



Annex 8.1. UZ Organization Chart

1. The State Administration for Railway Transport in Ukraine (Ukrzaliznytsia (UZ)) is responsible for the administration of all railway functions in the country, including safety, construction and design standards, operating practices and finances. UZ is a 100% state owned entity. As in most socialist and former Soviet Union (FSU) countries with planned economies, UZ is far from being just a railway. Ancillary activities include urban metropolitan-subway services in Kiev, Kharkov, and Dnepropetrovsk, railway design bureaus, material manufacturing, food production, and a large variety of social services such as school, hospitals, restaurants and other activities for railway employees. UZ activities perform 80% of total cargo carriage and 60% of passenger carriage in Ukraine thus representing major contribution to national economy.

Ukrzaliznytsia (UZ)



Annex 8.2. UZ Assets

1. **Railway Assets.** UZ includes 6 geographically subordinated (not organized by corridors) regional railways, about 1,800 stations, over 430 depots, 68 freight car depots, 235 technical maintenance shops, about 70 main and 45 auxiliary depots for locomotive facilities. Freight facilities include more than 200 freight yards and 250 container terminals. Tracks and track facilities represent about 22,700 km (in majority 61,4 kg/m) of main track (gauge 1,520 mm) and 555 km track with European gauge 1,435 mm, 63,700 km of switches, more than 13,800 km off seamless tracks. In 1995, about 800 machines for freight transport constituted the operational pool of main-line locomotives, 900 for passenger services, over 10,000 inter-city passenger cars, over 10,000 freight cars. 8,400 km (35%) of track is electrified. 730 km has been electrified during last three years. UZ operates 801 locomotives for freight and 933 in passenger services. Freight wagons are owned by a common wagon park, which is used by all FSU countries. All FSU countries, including the Baltic States, have signed treaties between their respective countries according to which the railway companies are centrally charged against each other for using wagons of other countries. UZ currently owns approximately 200,000 freight wagons, out of which 90% is located in Ukraine, and 10,000 passenger wagons. 24-hour freight operational stock was 109,000 freight wagons in 1997. Passenger services include 123 main stations. Every year more than 250 passenger trains are formed. Average passenger distance served is 250 km performed with average speed of 50 – 60 km/h. In freight operations – average distance 470 km and average technical speed 40 km/h.

2. **Network Facilities.** UZ telecommunication network is a part of Ukrainian Single National Communication System. Total network – 22,600 km, with 1.9 million channel-km of phone and 1.2 million channel-km of telegraph lines; 800 stations support 220,000 phone numbers. The network is old fashioned (95% analog lines) and obsolete. Automated control system includes: automated blocking system (13,600 km), central dispatch (3,355 km), automated signaling system (15,113 km), dispatch control (8,495 km), electrical signaling (in 1,642 stations), 21 stations, 15 shunting centers, terminals etc. Existing automated control system has rather low capacity, yet does not enjoy support of modern hard- and software. High-efficiency technologies and equipment has not been available due to limited investment resources. UZ is insufficiently computerized and is no different from the most of FSU railways. EDP and availability of EDI instruments are only represented in centralized in-house statistical production. Although UZ operates with obsolete equipment and primitive software, recognition of the need to retire from FSU methodology in economic analyses and data processing experience would have to be immanent before any new large investment was made in the field.

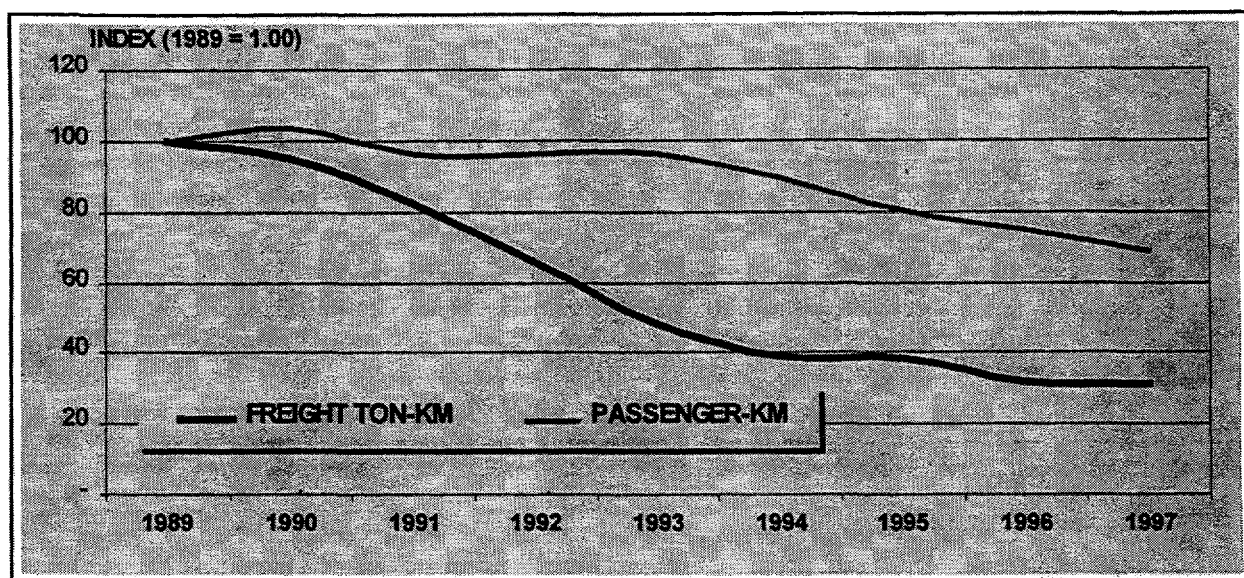
3. **Good Technical Capacity.** General quality of technical capacity of UZ remains good and clearly above average compared to the most of other FSU railways. Average and high end speeds for both passenger and freight services are satisfactory for FSU railway standards despite shortage in investment resources and budgetary funding during last five years. UZ has remarkable hidden reserves available and idle technical capacity, which could allow the State and management of the company to economize and rationalize UZ activities without a risk to jeopardize current performance levels. It is evident that UZ can, from technical perspective point of view, self-sustain another 7 – 10 years without major investment carried out in infrastructure and rolling stock. The latter would provide a solid ground for successful launch of radical restructuring and

commercialization activities for UZ. On the other hand, relatively good technical conditions of UZ may serve a reason for management to delay changes because traditionally railway organizations, especially in FSU, have been and still are driven by engineers and not by managers with economic and financial background.

Annex 8.3. Traffic Levels and Importance in the Economy

1. **Traffic Drop.** Although a significant amount of liquid traffic has been shifted from rail to pipeline following the growth of oil production in Russia, rail still carried almost 90% of the land tkm in 1989. The breakup of the FSU and the recent years economic and political problems (both internally and externally) have considerably affected the traffic levels. Rail traffic in Ukraine and throughout the CIS has fallen precipitously from its pick. Since then, freight volumes are about 65% lower (freight traffic has been divided by a factor of 3 between 1990 and 1997), and passenger traffic has declined by 25%. Freight importance in Ukrainian total traffic has decreased from 87% in 1989 – 1990 to around 75% in 1993 – 1997. These declines reflect the drop in overall activity in Ukraine, but also presage a changing economic role.

Figure 1

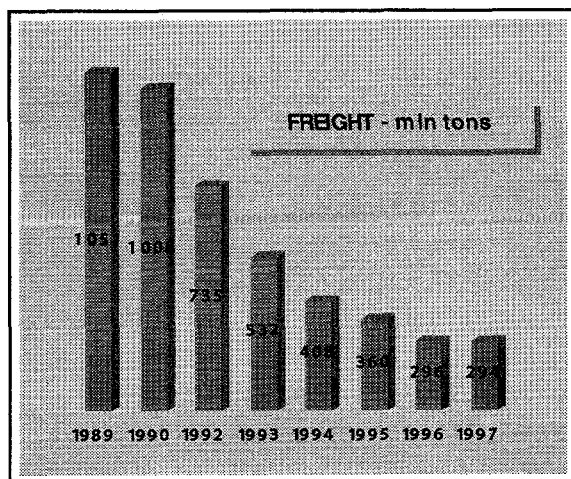


2. Experience in other countries passing through similar periods of transition and restructuring has shown that socialist economies used too much transport, and much of the excess was in the rail mode. The FSU breakup has had a number of adverse effects on the rail operations. Traffic levels and patterns have been disrupted and will never return to the levels of the past. New borders and deficient international regulation, which creates bureaucracy and corruption, are delaying, sometimes extensively, transit times and involve numerous inter-railway exchange preventing fluid rail traffic flows.

3. **Freight Traffic.** In 1990, more than 500 billion ton-km were moved by rail in Ukraine. By 1997, total ton-km had dropped to 160 billion, about 30% of 1989 levels. Railway freight traffic has probably now lost its past predominant role in relation to road transport and is not going to gain the same position *vis-à-vis* other modes of transportation in the foreseeable future, if ever. However, according to UZ estimation, freight traffic importance compared to passenger traffic on

rail should increase up to 82% mainly due to the expected decrease of suburban and long-distance passengers during next 4 years. Management of UZ is in the opinion that during next 15 years current level of ton-km in freight services would remain in the level of 1997 year.

Figure 2



4. The most important traffic components in recent years remain coal, iron ore, black metals and construction materials, mostly on high travel distance. The average travel distance did not vary in the recent years and is about the same as in 1990 - 470 km.

Table 1. Distribution of Freight by Commodity and Region

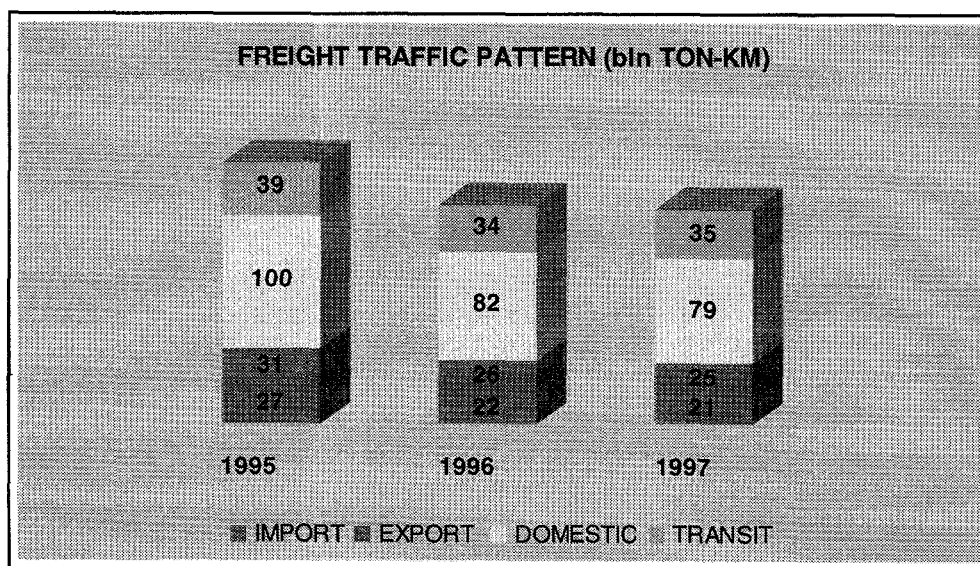
COMMODITY	LOAD mln tons	UNLOAD mln tons	NET BALANCE load - unload	MAIN LOAD REGION	MAIN UNLOAD REGION
COAL	80.1	91.9	- 11.8	Donetsk	Donetsk
ORE	51.7	56.3	- 4.6	Dnieper	Donetsk
CONSTRUCTION MATERIALS	51.4	52.4	- 1.0	Donetsk	Dnieper
FERROUS METAL	24.2	29.0	- 4.8	Dnieper	Odessa
OIL	15.9	23.0	- 7.1	South	Odessa
GRAIN PRODUCTS	12.5	13.1	- 0.6	Odessa	South West
COKE	7.5	7.7	- 0.2	Donetsk	Donetsk
CHEMICALS & MINERALS	5.0	10.3	- 5.3	Donetsk	Odessa
OTHER	47.7	61.8	- 14.1	Donetsk	Lvov
TOTAL	296.0	345.5	- 49.5	Donetsk	Donetsk

5. **Transit Role.** UZ role in servicing and creating transit flows has significantly decreased within growing competition among FSU railways targeting Russia and Asia (both FSU and further). UZ does predict small growth in their transit activities in the next 5 – 10 years, which represents rather modest progress considering other players' performance in the industry.

However, it seems that UZ, which has probably the highest operating and recovery cost compared to other players in the throughput (incl. ports, road, forwarders, etc.) has the smallest income. Therefore an indepth cross-industry study should be initiated in order to understand break-down of the transit corridor(s) and respective cost structure discounted to players in the corridor. Ukraine's aspirations in the Crete corridor concept have not come to reality so far. Both European direction and the "Silk Road" constitute high importance for the Ukrainian government but progress is modest.

6. The freight traffic patterns have remained about the same during the very recent years with about 60% of international traffic and 40% of domestic traffic.

Figure 3



7. Inter- and multi-modal standards and respective development has not been favorable so far for railways and UZ has been often considered as the least reliable player in the chain. Inflexibility and inertia in handling lead time, safety, insurance, handling, etc. is making UZ not competitive in addressing market and customer needs.

8. **Turnover of containers has declined enormously.** Statistics from the past report up to 10 million tons carried a year while only about 60,000 containers were carried by UZ in 1997. There is no challenge and/or cheap instruments available in UZ to attract containers, not speaking about re-gaining lost container tonnage in transit to Russia. Lead-time, costs on throughput on rail and handling problems make containers on rail expensive and inefficient product. Although formal tariff for container shipments is reasonably modest, the actual throughput costs are rather high. Industry barrier will likely remain (very) high for containers on rail in Ukraine for many years because: 1) containerized shipments represent relatively sophisticated discipline for FSU transport industry and standards; 2) lack of supporting logistical services and facilities (no dedicated container port among others), 3) lack of Ukraine's domestic consumer (forwarders) capacity, which all leads to a lack of competitiveness *vis-à-vis* road transport services. In the same time, UZ

is investigating possibility to reintroduce platform carriage, which was widely used in FSU. In some cases combining platforms with lighters on river. The concept is dubious due to industry and trading world going towards standardized containers.

9. **Passenger Traffic.** Passenger traffic was also affected by the harsh economic situation in Ukraine, which has resulted in significant depression in quality and price of public services. The total number of passengers transported by rail in 1997 was slightly below 500 million, while they were about 670 million in 1990. In terms of passenger-kilometers, the decline is even bigger: the railways transported 54 billion pkm in 1997, down from 81 billion in 1990, although a rebound was recorded in 1994. Passenger traffic further steadily decreased during 1995, 1996, and 1997. 1998 estimates now put the number of passengers transported at the 1997 level. Nevertheless, management of UZ expects further decline in passenger figures with the trend stabilizing in 2001 at 35 billion pkm a year.

Figure 4

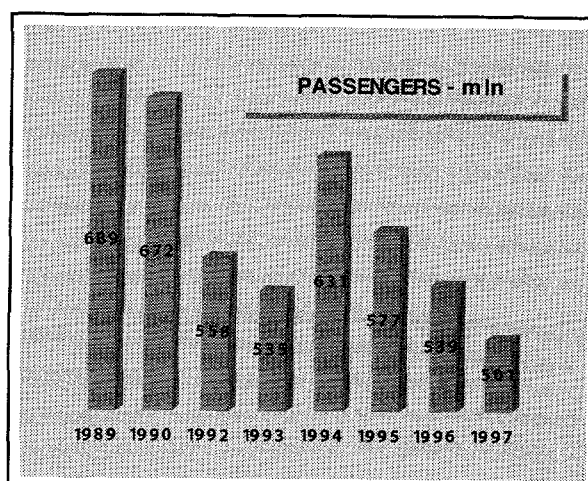
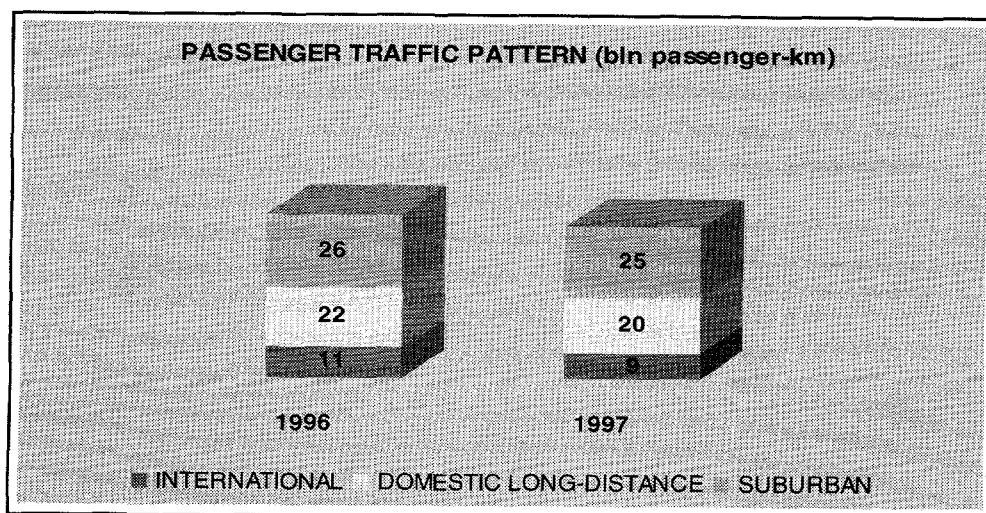


Figure 5



Annex 8.4. Regional Railway Description

1. Regional railways, which are organized geographically, contribute a little to each other in terms of industrial and operational synergy. All regional railways are consolidated economically. Regional railways have rather significant differences and performance results although in general the economic wealth of the subordinated regional railways remains difficult. Summary analyses for 1996:

SouthWest – largest traffic. Biggest freight and passenger traffic in kms as well as largest number in passengers. Relatively high passenger orientation – 33% of its traffic. Main transit corridor – 63% of its freight volume is coming from transit (in financial terms transit importance is even bigger as average distance of transit is longer than it is in export, import and domestic haulage). Main export category: construction materials – 53% of total freight volume in tons. Relatively well maintained infrastructure, highest average technical speed. Highest employee productivity. Longest average freight travel distance - 387 km. Revenue per FTK is one of the lowest (partly because of long average travel distance). Good EBITDA² margin – 17%. Best EBIT³ per passenger-km. Big depreciation expense.

South – highest revenue per km. Smallest traffic in kms. Relatively high passenger orientation – 33% of its' traffic. Second largest transit region – 60% of its freight volume. Relatively well-maintained infrastructure, average technical speed has not almost decreased during recent years. Extremely high revenue per FTK (1.6 times higher than Ukrainian average in 1996, at the same time average travel distance is second shortest after Donetsk). Sharp increase took place in 1996. Also revenue per PK is highest. Best EBITDA margin –19%. Best EBIT per FTK – more than 2 times higher than in other regions. Big depreciation expense. Best fixed assets utilization – revenue per fixed assets is highest.

Donetsk – coal transport. Biggest freight volume in tons. Relatively high freight orientation – 82% of its traffic. Smallest passenger traffic in kms. Incomparably biggest domestic and second biggest export region. Export and domestic haulage are giving almost 70% of its total freight volume. Main freight item coal (81% of Ukrainian all coal). Also biggest import region in volume, although for the region itself import is making up only 20% of its freight. Smallest transit contribution. Lowest average technical speed. Shortest average freight travel distance - 155 km. Second shortest average passenger travel distance - 80 km. Second largest operating revenue. Biggest loss maker in passenger traffic (worst EBIT margin). Largest amount of fixed assets (book value \$US 5.0 bln and net book value \$US 2.5 bln).

Dnieper – ore transport. Second largest freight and passenger traffic in kms as well as second largest freight volume in tons. Ore 48% from its freight (84% of Ukrainian all ore). Biggest export region – 36% of its freight volume. Highest revenue per employee.

² Earnings before depreciation.

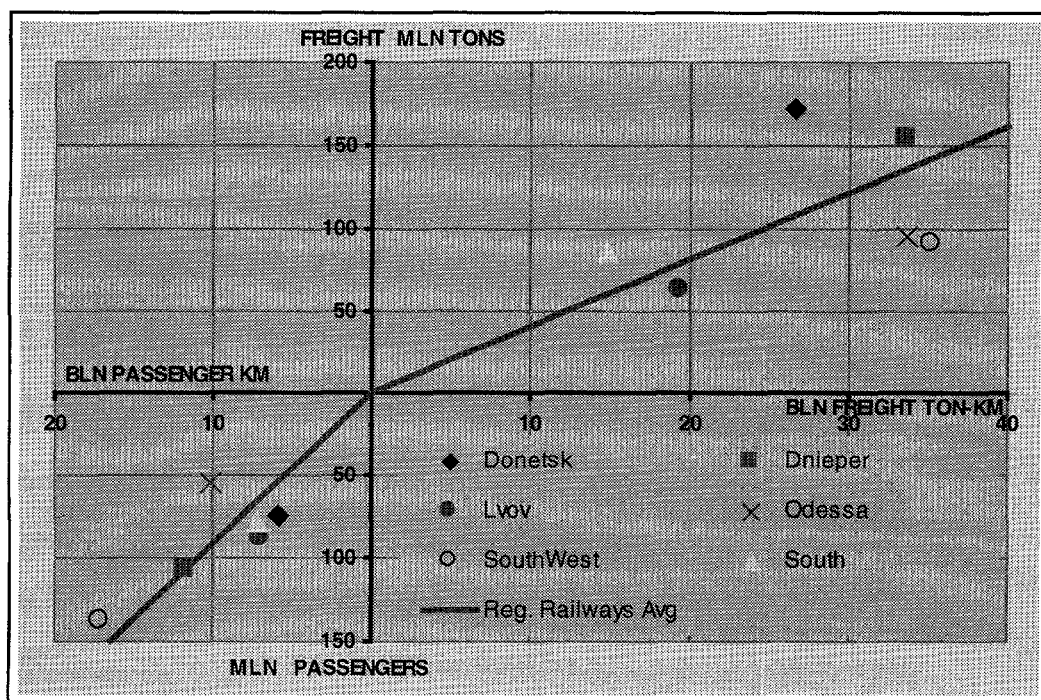
³ Earnings before interests and taxes.

Biggest operating revenue. Lowest EBITDA margin – 8%. Low depreciation expense. Highest state of wear (oldest fixed assets) – 56%.

Lvov – overstuffed financial wizard. Second smallest freight and passenger traffic in kms. Smallest freight volume, mainly orientated to transit (57% of its total freight volume). Ore – main largest import item. Smallest investments to infrastructure (technical speed has decreased sharply). Shortest average passenger travel distance - 78 km. Second highest revenues per FTK and PK (PK because of shortest passenger travel distance). Lowest employee productivity. Lowest revenue per employee. Second smallest operating revenue. Lowest EBITDA margin – 8%. Lowest depreciation expense. Best EBIT margin – -2%. Extremely high EBIT form other activities.

Odessa – long travel distances; decreasing unit revenues. Smallest number of passengers. Transit (50%) and import (32%) are giving 82% of its freight volume. Ferrous metal and coal – biggest import items. Smallest investments to infrastructure (technical speed has decreased sharply), despite of that fixed assets state of wear is only 35%. Second longest average freight travel distance - 354 km. Longest average passenger travel distance - 188 km. Lowest revenues per FTK and PK (because of shortest travel distances). Highest employee productivity. Smallest operating revenue. Considerably low EBIT per FTK. Spread in revenues per km (both freight and passenger) with Ukrainian average has increased year-by-year.

Figure 7



Annex 8.5. Financial Performances and Issues

1. Considerable declines in traffic levels and increasing costs, combined with non-realistic cost recovery mechanisms, have rapidly cut into the UZ's financial performance. Despite its virtual monopoly on internal surface traffic, UZ has been caught in structural inflationary spiral well known in the railways elsewhere. This decrease in rail operation volume (only 30 - 40% of installed capacity) has caused productivity to drop, high level of immobilization on equipment and rolling stock and a bad absorption of fixed costs, which are traditionally high in the railway. Costs go up rapidly but government pressures the regulatory interventions and market forces have constrained tariffs increases.

2. In 1996, UZ financial results as a group (figures aggregated not consolidated) and the contribution of main entities to the financial results, as per UZ itself, are estimated and presented in the table below:

Table 1. UZ Financial Indicators (in million Hrv's):

UZ GROUP	Operating Revenue*Gross Operating Result**		Assets
	1996	1996	
Transport Enterprises	4 882.9	-175.8	27 867.7
Urban Metro Systems	112.7	9.9	1 947.1
Manufacturing	327.5	48.7	992.5
Railway Shops	38.9	7.6	138.4
Construction Enterprises (repairs)	101.6	7.9	155.8
Design Bureaus	3.7	0.7	5.2
Construction (major works)	0.0	0.0	375.3
Materials, Stores & Distribution	5.9	3.2	64.4
Research Institutes	3.4	0.6	6.7
Catering & Trading	69.1	-7.6	179.0
Agricultural Enterprises	6.3	-0.5	86.2
Publishing	0.06	0	0.82
Medical Supply	3.7	0.2	7.6

* Operating revenue (including subsidies, VAT excluded)

3. The rapid global analysis of this table shows clearly that UZ transport enterprises constitute the core activities (about 90% of operating revenues and assets involved in UZ activities). The level of subsidies for this fiscal year, is about 24 million Hrv's (US\$ 12 million) mainly allocated to the urban metro systems (about 18 million Hrv's). UZ is not anymore compensated for the losses in the passenger traffic, even if tariffs are apparently still regulated by the government and is not compensated for the numerous social services provided to its staff.

4. The analysis of the financial results for the Transport Activities, for fiscal years 1996 and 1997, as per UZ accounts, for the transport enterprises which is summarized in the tables below calls for the following comments.

Table 2. Financial Highlights, Transport Enterprises of UZ
for the year ended December 31st

	1996 mln Hrv's	1997 mln Hrv's	1996 mln USD	1997 mln USD
Operating revenue	4 882.9	5 052.3	2 669.0	2 713.8
Earnings before depreciation (EBITDA)	1 427.9	1 241.3	780.5	666.8
EBITDA margin	29%	25%	29%	25%
Earnings before interest and tax (EBIT)	- 513.1	- 1 771.7	- 280.5	- 951.7
Earnings before tax (EBT)	- 175.8	- 1 415.4	- 96.1	- 760.2
EBT margin	- 11%	- 35%	- 11%	- 35%
Net profit	- 374.0	- 1 434.4	- 204.4	- 770.4
Freight ton-km (mln)	163 384	160 432	163 384	160 432
Passenger-km (mln)	59 080	54 540	59 080	54 540
Revenue per freight ton-km (kopecks and USc)	1.86	2.10	1.02	1.13
Revenue per freight ton-km (kopecks and USc)	1.04	1.20	0.57	0.64
EBT on freight traffic	451.3	- 172.7	246.7	- 94.4
EBT margin on freight traffic	15%	- 5%	15%	- 5%
EBT on passenger traffic	- 795.7	- 1 380.4	- 434.9	- 754.5
EBT margin on passenger traffic	- 130%	- 216%	- 130%	- 216%
EBT on other activities	168.6	137.7	92.3	88.6
EBT margin on other activities	14%	16%	14%	16%
Assets (end of year)	27 867.7	24 873.9	14 752.6	13 160.8
Net fixed assets	25 311.3	21 982.7	13 399.3	11 631.1
State of wear (accumulated depreciation / book value of fixed assets)	48%	53%	48%	53%

5. On a global level, at more or less the same level of traffic, financial situation has worsened between 1996 and 1997, showing increasing important losses (estimated to be more than US\$ 900 million in 1997). This financial situation is mainly caused by an exceptionally high yearly depreciation in 1997 (about US\$ 1.56 billion).

6. EBITDA margin decreased from 29% to 25%, showing the deterioration of the operating conditions and an increasing alarming situation: the working expenses have increased by about Hrv 300 million. The operating result is considerably deteriorated moving from a loss of about Hrv 500 million in 1996 to a loss of about Hrv 1.7 billion in 1997. Consequently, the EBT margin dropped from -11% in 1996 to -35% in 1997, emphasizing the role of depreciation in the cost structure of UZ transport activities and demonstrating that in this particular case, the **cash flow is a more adapted performance indicator than profit**. The ratio operating cash flow (generated exclusively by transport activities) and net cash flow stayed at about the same level between 1996 and 1997: Hrv 1.2 billion. The ratio (net cash flow on turn over) is estimated to be around 30%. Considering the amount of funds involved one of the main issues remains the adequate use of this cash flow, which, if not adequately used, would generate an important de-capitalization. It appears that an increasingly large part of these funds are used to finance important losses in the

passenger activities, increasing receivables and inventories and social activities and investments for the railway staff.

7. The freight activities are more or less in financial equilibrium. Financial sustainability of the freight tariffs will highly depend on the level of the appropriate yearly depreciation allocation and the appreciation of their economical and financial reality in the context of the actual situation of the railway. It is estimated that in 1996, the average cost per tkm was 1.6 Kopeck for average revenue generated of 2.1 Kopeck. In 1997, these figures moved to 2.1 and 2.2 (around US\$ 1 cent per tkm) respectively.

8. The total amount of loss estimated for the passenger activities moved from about Hrv 800 million in 1996 to about Hrv 1.4 billion in 1997 (US\$ 700 million), representing about 2 times the passenger traffic turnover. For the passenger traffic, it is estimated that in 1996, the average cost per pkm was 2.4 Kopeck for average revenue generated of 1 Kopeck. In 1997, these figures moved to 3.7 and 1.2 (around US\$ half a cent per pkm) respectively, showing a loss of 2.5 Kopeck per unit.

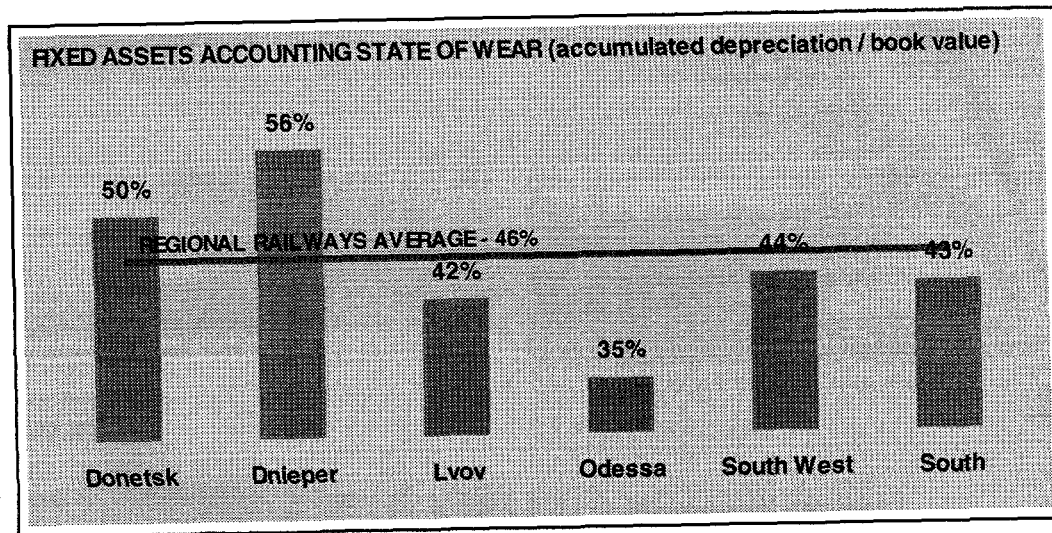
9. As the railway is not anymore compensated for these considerable losses, the freight operation and the profit on the other activities directly subsidize the passenger activities. This extreme situation, if to be durable, would generate a rapid and irreversible de-capitalization of the freight segment business of the railway, whatever amortization policy is implemented.

Table 3. Financial Highlights, Regional Railways of UZ
for the year ended December 31st 1996, in million Hrv's

	Donetsk	Dnieper	Lvov	Odessa	SouthWest	South
Operating revenue	886.9	926.6	727.5	713.8	871.7	644.9
Op. Result before Depreciation	109.4	78.1	103.3	97.1	147.2	122.1
Working margin	12%	8%	14%	14%	17%	19%
Net Operating Result (NOR)	- 51.6	- 48.2	- 14.4	- 41.8	- 48.8	- 22.3
Operating margin	- 6%	- 5%	- 2%	- 6%	- 6%	- 3%
NOR on freight traffic	90.6	110.4	67.6	73.2	95.5	104.8
NOR on passenger traffic	- 134.1	- 181.4	- 155.2	- 137.5	- 167.8	- 153.7
NOR on other activities	- 8.1	22.8	73.2	22.6	23.5	26.7
Assets (end of period)	4 992.8	4 357.6	4 554.7	4 727.8	5 223.1	2 879.2
Net fixed assets	4 725.7	4 077.0	4 327.6	4 538.4	4 743.4	2 647.5
State of wear	50%	56%	42%	35%	44%	43%

10. The analysis of the financial performance of each of the six railways, performed for 1996, confirms that the main characteristics of the situation described are more or less the same in each of the railways. The situation in the Dnieper railway is probably more deteriorated than for the other railways.

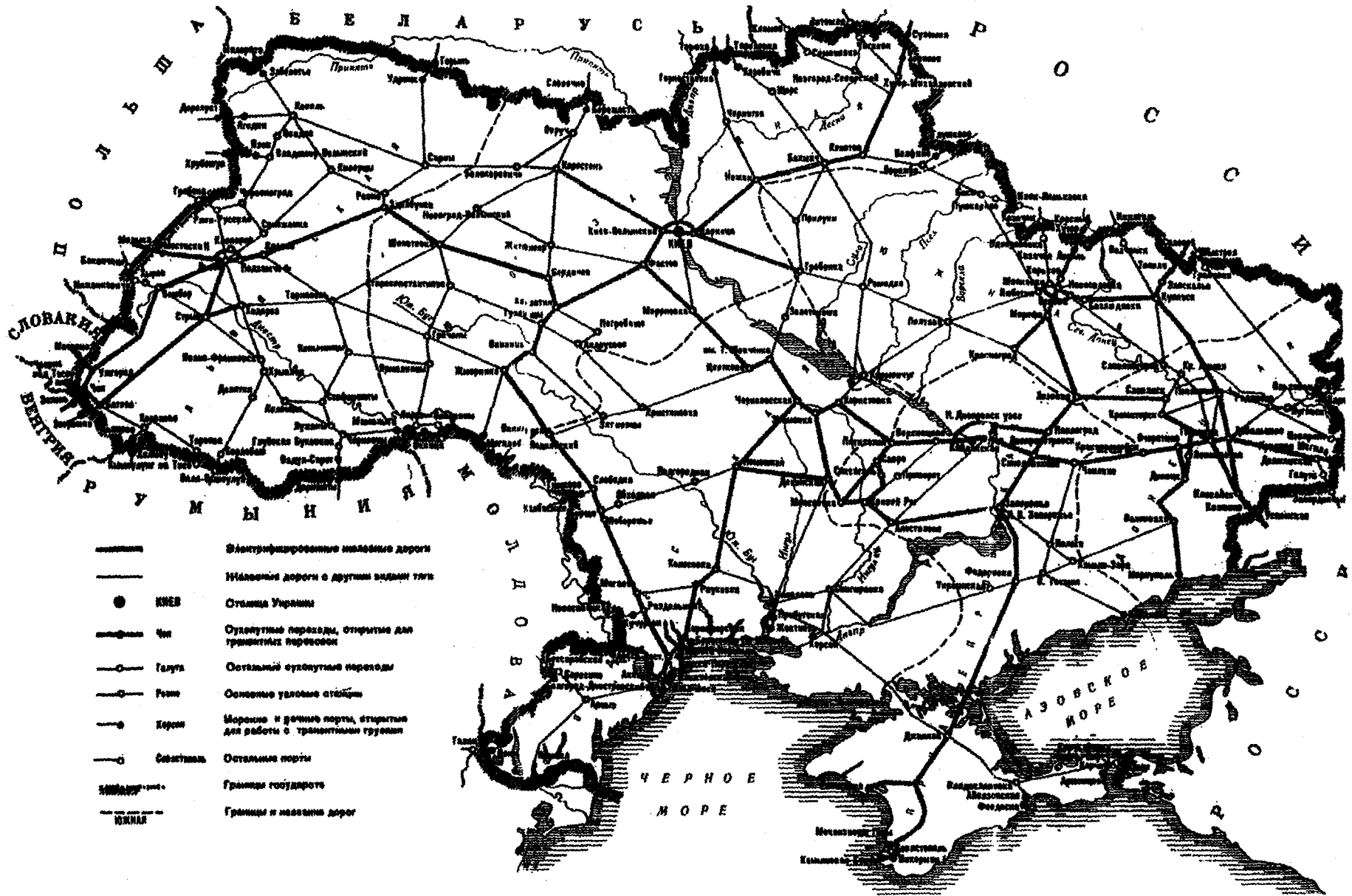
Figure 8

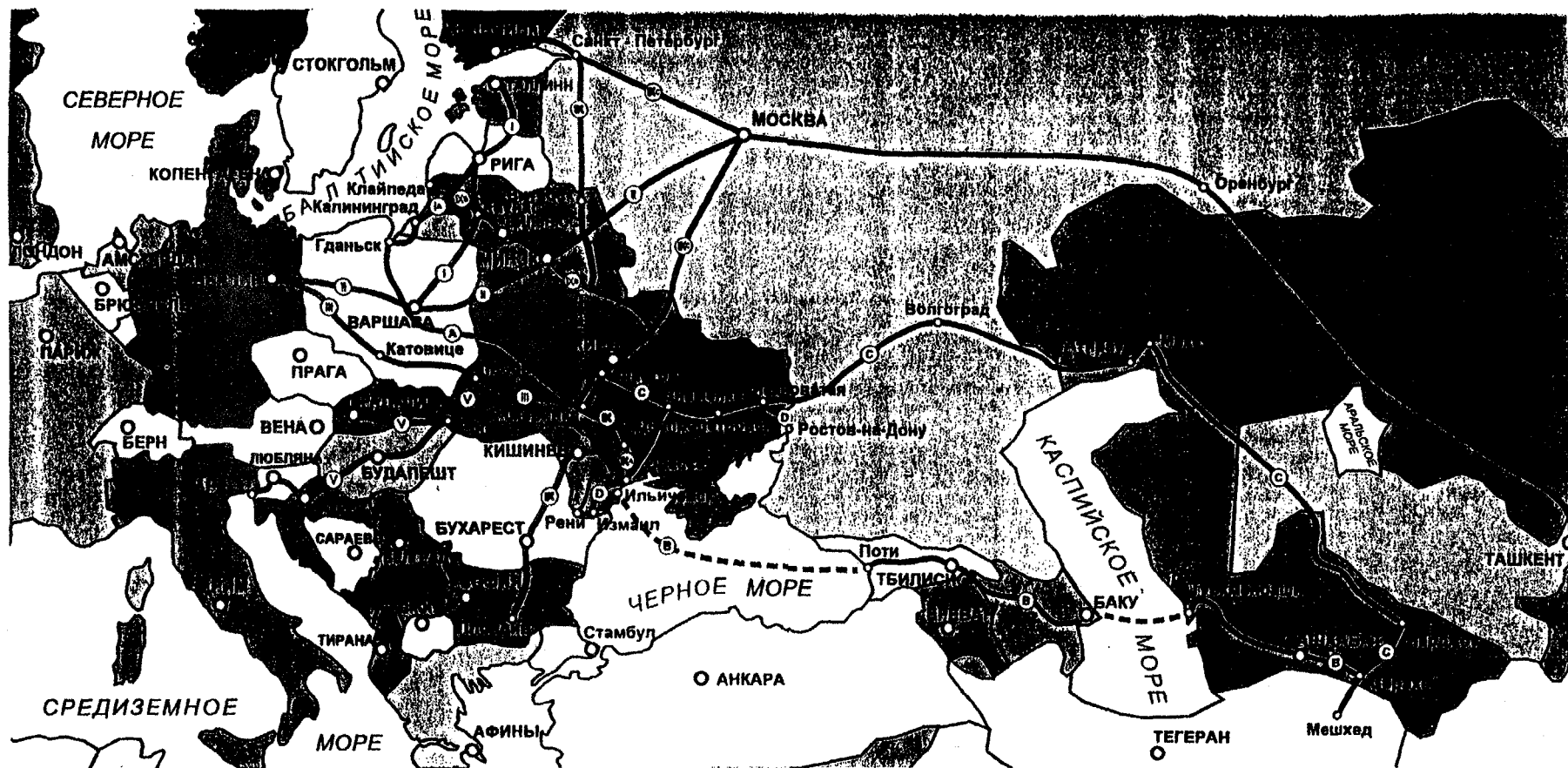


11. The financial structure of the balance sheet of the Transport Activities, as a group, has been extensively modified between 1995 and 1997. The total of the balance sheet has been multiplied by more or less 5. UZ went through several governmentally driven assets reevaluation, (1995, 1996 and 1997) and applies now the new depreciation rate. An in-depth analysis should be done to ensure that the actual reevaluated values and yearly depreciation amount represent fairly and adequately the economical and financial realities of the group and its transport enterprises and ensure proper modernization of the railway network.

12. The short-term financial structure of the Transport Activities, as a group, is fragile. The amount of receivables moved from about Hrv 1 billion at the end of 1996 to Hrv 1.9 billion at the end of 1997. This now represents about 180 days of the actual freight turnover. These amounts are largely constituted by overdue payments or arrears on state enterprises in the mining and industry sectors, which are also going through a stabilization process. It is notable that ministries instead of companies are in charge for handling settlement of overdue receivables and indebtedness between large state companies. Delay in salary payments has reached 6 month. In addition, UZ has a growing debt to budget and Pension Fund, thus contributing to a growing fiscal problem. If not urgently and properly addressed, the settlement of this situation will generate additional implications.

13. Financial situation of UZ is further damaged by the fact that freight services to the large extent are bartered rather than sold against cash. In addition, parts of revenues are coming from inter-company non-cash transactions. According to UZ only 40% of total sales in freight tonnage is paid in cash. Despite extensive internal operational and technical resource available, UZ may face liquidity crises already in the near future.





- "Critical" corridors**
- I** Tallinn - Riga - Kaunas - Warsaw
 - IA** Riga - Kaliningrad - Gdansk
 - II** Berlin - Warsaw - Minsk - Moscow
 - III** Berlin - Katowice - Lvov - Kiev
 - V** Trieste - Ljubljana - Zagreb - Budapest - Chop - Lvov; Bratislava - Chop - Lvov
 - IX** Plovdiv - Bucharest - Kishinev - Razdelnaya - Kiev - Vitebsk - St. Petersburg - Helsinki
 - IXA** Odessa - Razdelnaya
 - IXB** Kiev - Minsk - Vilnius - Kaunas - Klaipeda
 - IXC** Kiev - Moscow - St. Petersburg
- Additional corridors, suggested by Ukraine**
- A** Baltic Sea (Gdansk) - Black Sea (Odessa)
 - B** EuroAsia - Ilychovsk - ferry passage - Poti - Tbilisi - Baku - ferry passage - Turkmenbashi - Ashkhabad - Meshhad
 - C** Europe - Asia. Fastov - Znamenka - Dnepropetrovsk - Volgograd - Makal - Chardzhou
 - D** Corridor of the Black Sea economic union. Reni - Izmail - Odessa - Znamenka - Dnepropetrovsk - Yashnovataya - Kvashino
- Other corridors. Moscow - Orenburg - Tashkent**

Table 8.1.3: UKRAINIAN RAILWAYS - HISTORICAL DATA

Main Operatial Statistics	1990	1993	1994	1996	1997
Freight tons (million)	974.0	532.2	408.0	343.2	333.3
Freight tkm (billion)	474.0	246.4	200.4	163.4	160.4
Freight Traffic Indice (100=1990)	100	52	42	34	34
Ave. length of haul (km)	486.7	463.0	491.2	476.0	481.3
Pasenger journeys (million)	669.0	502.0	736.0	538.6	505.8
Passenger km (billion)*	81.9	76.0	70.9	59.1	54.6
Passenger Traffic Indice (100=1990)	100	75	110	81	76
Locomotive/DMU/EMU km (million)				180.9	172.3
Train km (million)				131.2	125.0
Wagon km (million)				5.3	5.2
Employment ('000)				531.7	495.7
Productivity* ('000 tkm/employee)				384.1	404.5

Graph 8.1.4: Ukrainian Railways- Indexed Traffic Trends

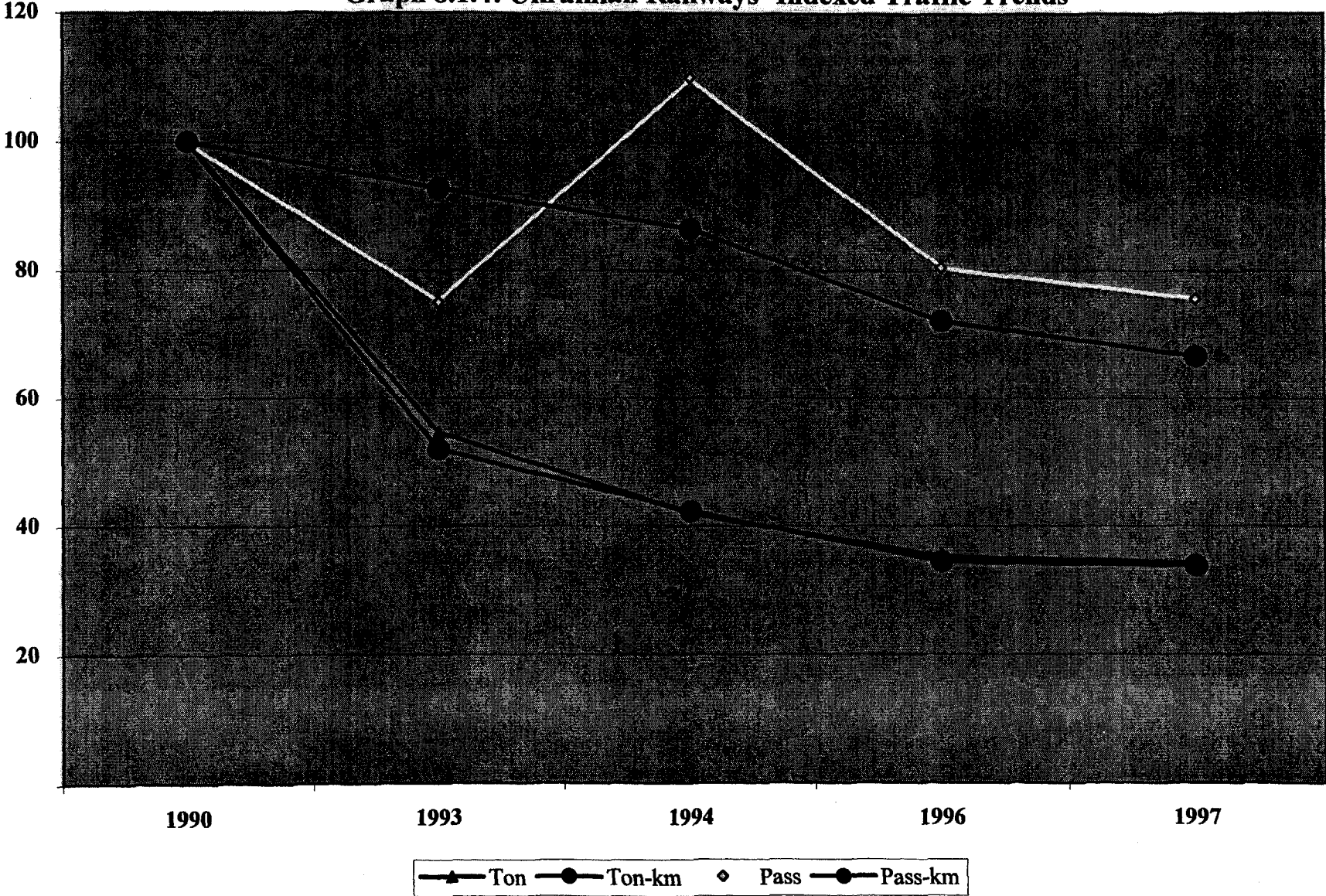


Table 8.1.6
TRANSPORT SECTOR REVIEW
RAILWAYS

Income Statements and Cash Flow
for the year ended December 31st, 1996

	(in million Hrv's)		(in million Hrv's)		(in million Hrv's)		1996 Total
	1996 Donetsk	1996 L'viv	1996 Odessa	1996 Dniprop.	1996 Lviv	1996 South	
Source :							
Operating revenues	886.9	727.5	713.8	926.6	871.7	644.9	4,771.5
Operating Expenses	917.8	736.2	746.7	960.5	908.5	689.9	4,959.5
Ope. Result before depreciation*	109.4	103.3	97.1	78.1	147.2	122.1	657.2
Net operating result	(51.6)	(14.4)	(41.8)	(48.2)	(48.8)	(22.3)	(227.1)
Net Profit (Loss) before Tax	185.2	85.2	20.4	99.9	19.3	30.3	440.2
Net Profit (Loss) after Tax	146.6	59.7	(4.1)	40.7	(8.6)	12.3	246.7
Working Ratio	88%	86%	86%	92%	83%	81%	86%
Operating Ratio	103%	101%	105%	104%	104%	107%	104%
Net Operating Cash Flow	88.7	97.6	88.2	63.8	135.2	144.7	618.2
Net Cash Flow	286.8	171.7	125.9	152.7	175.4	179.3	1,092.0
Net Cash Flow/Operating Revenues	32%	24%	18%	16%	20%	28%	23%
Operating Result on Freight Traffic	90.6	67.6	73.2	110.4	95.5	104.8	541.9
Operating Result on Passenger Traffic	(134.1)	(155.2)	(137.5)	(181.4)	(167.8)	(153.7)	(929.8)
Operating Result on other activities	(8.1)	73.2	22.6	22.8	23.5	26.7	160.7

Table 8.1.7
TRANSPORT SECTOR REVIEW
RAILWAYS
Financial Highlights

for the year ended December 31st

	(in million H-r's)		(in million US\$)	
	TRANSPORT 1996	TRANSPORT 1997	TRANSPORT 1996	TRANSPORT 1997
Operating revenues	4,882.9	5,052.3	2,653.8	2,687.4
Working Expenses	3,455.0	3,811.0	1,877.7	2,027.1
Operating Result before depreciation	1,427.9	1,241.3	776.1	660.3
Net operating result	(513.1)	(1,771.7)	(278.8)	(942.4)
Net Profit (Loss) before Tax	(175.8)	(1,415.4)	(95.5)	(752.9)
Net Profit (Loss) after Tax	(374.0)	(1,434.4)	(203.2)	(763.0)
Traffic (million tons)	343,212	333,311	343,212	333,311
Traffic (billion km)	163,380	160,435	163,380	160,435
Traffic (million pass)	538,585	505,759	538,585	505,759
Traffic (billion pass km)	59,079	54,553	59,079	54,553
Working Ratio	71%	75%	71%	75%
Operating Ratio	111%	135%	111%	135%
Pricing Ratio (kp/dkm)	1.9	2.1	1.01	1.12
Pricing Ratio (kp/plkm)	1.0	1.2	0.56	0.64
Net Operating Cash Flow	1,229.7	1,222.3	668.3	650.2
Net Cash Flow	1,567.0	1,578.6	851.7	839.7
Net Cash Flow/Operating Revenues	32%	31%	32%	31%

Source :

Table 8.1.7
TRANSPORT SECTOR REVIEW
RAILWAYS

Income Statements and Cash Flow
for the year ended December 31st

Source :	(in million Hrv's)		(in million US\$'s)	
	TRANSPORT 1996	TRANSPORT 1997	TRANSPORT 1996	TRANSPORT 1997
Operating revenues	4,882.9	5,052.3	2,653.8	2,687.4
Freight	3,039.9	3,374.5	1,652.1	1,794.9
Passengers	611.5	651.8	332.4	346.7
Other	1,231.5	1,026.0	669.3	545.7
Operating Expenses				
Materials	657.0	971.0	357.1	516.5
Fuel	313.0	313.0	170.1	166.5
Energy	525.0	420.0	285.3	223.4
Salaries & benefits	1,040.0	1,019.0	565.2	542.0
Other expenses	920.0	1,088.0	500.0	578.7
Working expenses	3,455.0	3,811.0	1,877.7	2,027.1
Depreciation	1,941.0	3,013.0	1,054.9	1,602.7
Operating Expenses	5,396.0	6,824.0	2,932.6	3,629.8
Operating Income	(513.1)	(1,771.7)	(278.8)	(942.4)
Other non Operating Income	349.7	405.1	190.0	215.5
Other Expenses	12.4	48.7	6.7	25.9
Profit before Tax	(175.8)	(1,415.4)	(95.5)	(752.9)
Tax	198.2	19.0	107.7	10.1
Profit after tax	(374.0)	(1,434.4)	(203.2)	(763.0)
Net Operating Cash Flow	1,229.7	1,222.3	668.3	650.2
Net Cash Flow	1,567.0	1,578.6	851.7	839.7

Table 8.1.7
TRANSPORT SECTOR REVIEW
RAILWAYS

Estimated operating results - Freight/Passenger/other activities
for the year ended December 31st

Source :	(in million Hrv's)		(in million US\$'s)	
	TRANSPORT 1996	TRANSPORT 1997	TRANSPORT 1996	TRANSPORT 1997
Result on Freight Traffic	451.3	(172.7)	245.3	(91.9)
Result on Passenger Traffic	(795.7)	(1,380.4)	(432.4)	(734.3)
Result on other activities	168.8	137.7	91.7	73.2
Estimated Transport services	(175.6)	(1,415.4)	(95.4)	(752.9)

Table 8.1.8
TRANSPORT SECTOR REVIEW
RAILWAYS
Balance Sheets
per year, as of December 31
(in million Hrv's)

Source :	1995	1996	1997
ASSETS			
Cash	20	40	99
Accounts Receivables	662	992	1,956
Inventories	441	644	836
	—	—	—
Current assets	1,123	1,676	2,891
Fixed assets	6,358	46,592	46,836
Accumulated depreciation	2,541	21,534	24,878
	—	—	—
Net Fixed assets	3,817	25,058	21,958
Other assets	46	33	25
	—	—	—
Total Assets	4,983	26,767	24,874
LIABILITIES			
Current Liabilities	758	1,011	1,383
Long Term Liabilities	4	3	3
Paid in Capital	3,960	24,637	22,338
Other Funds	263	762	3,406
Retained earning & Current income	0	1,064	(2,255)
	—	—	—
Total Equity	4,223	26,462	23,488
	—	—	—
Liabilities and Equity	4,983	26,767	24,874

Table 8.2.1

UKRAINIAN RAILWAYS		PROJECTED							
Traffic estimates		ЗАПЛАНОВАНО							
and Average tariff per product									
	1997	1998	1999	2000	2001	2002	2003	2004	2005
TRAFFIC DATA									
Product 1: Ores									
Freight (mln t)	59	60	61	62	62	63	64	64	65
Freight (mln t.km)	34,750	34,750	35,098	35,448	35,803	36,161	36,523	36,888	37,257
Average trip (km)	590	575	575	575	575	575	575	575	575
Average freight tariff (Hrv / t.km)	0.014	0.014	0.015	0.016	0.018	0.019	0.020	0.020	0.022
Product 2: Coal & Coke									
Freight (t)	99	92	83	75	67	69	70	71	73
Freight (mln t.km)	32,000	30,000	27,000	24,300	21,870	22,307	22,754	23,209	23,673
Average trip (km)	322	325	325	325	325	325	325	325	325
Average freight tariff (Hrv / t.km)	0.022	0.022	0.024	0.025	0.027	0.029	0.030	0.031	0.033
Product 3: Black Metals									
Freight (t)	31	31	31	31	31	32	32	32	33
Freight (mln t.km)	17,100	17,100	17,271	17,444	17,618	17,794	17,972	18,152	18,334
Average trip (km)	560	560	560	560	560	560	560	560	560
Average freight tariff (Hrv / t.km)	0.023	0.023	0.025	0.027	0.029	0.029	0.029	0.029	0.029
Product 4: Construction Materials									
Freight (t)	49	49	50	51	52	53	55	56	58
Freight (mln t.km)	17,500	17,000	17,340	17,687	18,041	18,582	19,139	19,713	20,305
Average trip (km)	355	350	350	350	350	350	350	350	350
Average freight tariff (Hrv / t.km)	0.019	0.019	0.021	0.022	0.024	0.025	0.026	0.028	0.029
Product 5: Oil & Oil products									
Freight (t)	24	24	25	25	25	25	26	26	26
Freight (mln t.km)	13,600	13,600	13,736	13,873	14,012	14,152	14,294	14,437	14,581
Average trip (km)	565	560	560	560	560	560	560	560	560
Average freight tariff (Hrv / t.km)	0.025	0.025	0.027	0.029	0.031	0.032	0.034	0.036	0.037
Other Products									
Freight (t)	72	75	77	78	80	82	84	87	90
Freight (mln t.km)	45,500	45,000	45,900	46,818	47,754	49,187	50,663	52,182	53,748
Average trip (km)	635.0	600	600	600	600	600	600	600	600
Average freight tariff (Hrv / t.km)	0.024	0.024	0.026	0.028	0.030	0.032	0.033	0.035	0.037
Total Freight									
Freight (t)	334	338	326	321	317	324	330	337	344
Freight (mln t.km)	166,450	157,450	156,345	155,570	155,098	156,184	161,244	164,581	167,897
Average trip (km)	491	475	480	485	489	485	489	488	488
Average freight tariff (Hrv / t.km)	0.021	0.021	0.022	0.024	0.025	0.027	0.028	0.030	0.031

Table 8.2.2
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

Scenario 1: Complete Reform

Forecasted Statistics

for the years ended december 31st

Source :	ФАКТИЧНО ACTUAL		ЗАПЛАНОВАНО PROJECTED									
	1997	1998	1999	2000	2001							
Freight :												
Total Freight (mln tons)	334	331	326	321	317	324	330	337	344			
Total Freight (bln tkm)	160.5	157.5	156.3	155.6	155.1	158.2	161.3	164.6	167.90			
Passengers:												
Total Passengers (mln pas.)	506	469	384	315	260	227	198	173	152			
Total Passenger (bln p.km)	54.6	51.5	45.6	40.6	36.4	33.6	31.1	28.8	26.8			
Other												
Total TU (bln)	215.0	209.0	201.9	196.1	191.5	191.8	192.4	193.4	194.7			
Number Employees	300,000	300,000	255,000	216,750	184,238	175,026	166,274	157,961	150,063			
Productivity Employee	717	697	792	905	1039	1096	1157	1224	1298			
Turnover/Employee	6,879	6,738	8,427	10,563	13,269	14,808	16,472	18,339	20,434			
Salary/Employee (Hrv/month)	84	100	125	156	195	215	236	260	286			

Table 8.2.3
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

Scenario 1: Complete Reform

ProForma Income Statements
for the years ended december 31st
(US\$ million)

	ФАКТИЧНО ACTUAL	1998	1999	2000	2001				
Source :	1997								
Revenue :									
Freight	1,687	1,655	1,765	1,887	2,022	2,154	2,296	2,448	2,612
Passengers	326	317	331	346	362	362	362	363	363
Other	51	50	53	57	61	75	80	86	91
Operating Revenues	2,064	2,021	2,149	2,290	2,445	2,592	2,739	2,897	3,066
Expense :									
Salaries & Benefits	445	475	518	528	541	532	556	581	608
Materials	489	475	436	424	414	423	424	427	430
Other operating expenses	557	541	496	482	471	481	483	486	489
Other overhead expenses	100	100	88	88	88	75	75	75	75
Working Expenses	1,591	1,591	1,538	1,522	1,513	1,512	1,539	1,569	1,601
Operating Result	473	430	611	768	931	1,080	1,200	1,328	1,465
Depreciation	1,475	848	859	870	881	933	944	956	967
Provision for bad debts	169	83	88	94	101	65	69	73	78
Gross Operating Result	(1,170)	(500)	(336)	(196)	(51)	83	187	299	420
Non operating items	0	0	0	0	0	0	0	0	0
Extraordinary items (net)	(770)	(5,000)	0	0	0	0	0	0	0
Provision for Social Program			108	92	78	33	32	30	28
Net Income (Loss) before taxes	(400)	4,500	(444)	(288)	(129)	49	155	269	391
Taxes			0	0	0	15	47	81	117
Current Income	(400)	4,500	(444)	(288)	(129)	35	109	188	274
Operating Expenditures	3,066	2,522	2,485	2,486	2,495	2,509	2,552	2,598	2,646

Table 8.2.4
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

ProForma Sources & Uses of Funds

per year, as of December 31

US\$ million)

ФАКТИЧНО

ЗАПЛАНОВАНО

ACTUAL

PROJECTED

Source :	1997	1998	1999	2000	2001	2002	2003	2004	2005
SOURCES OF FUNDS									
Net Income after Taxes	(400)	4,500	(444)	(288)	(129)	35	109	188	274
Depreciation & Provisions	1,475	931	1,055	1,056	1,060	1,030	1,044	1,059	1,074
Other	(770)	(5,000)	0	0	0	0	0	0	0
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Funds from Operations	305	430	611	768	931	1,065	1,153	1,247	1,348
Write off & Sale of assets	0	0	0	0	0	0	0	0	0
Borrowings	0	0	0	0	0	0	0	0	0
Equity Capital	0	0	0	0	0	0	0	0	0
Change in working capital		(14)	189	163	140	9	(40)	(44)	(47)
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Financing	0	(14)	189	163	140	9	(40)	(44)	(47)
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total Sources	305	416	800	931	1,071	1,074	1,113	1,203	1,300
	=====	=====	=====	=====	=====	=====	=====	=====	=====
USES OF FUNDS									
Repayment of LT Debt	0	0	0	0	0	0	0	0	0
Re-evaluation of assets	0	0	0	0	0	0	0	0	0
Net Plant & Equipment	0	100	500	500	500	500	500	500	500
Change in Working Capital needs		92	90	77	65	42	(1)	(2)	(2)
Bad debts	169	83	88	94	101	65	69	73	78
Staff rightsizing program	0	0	108	92	78	33	32	30	28
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total Uses	169	274	786	763	744	640	599	602	605
	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total Sources & Uses	136	142	14	168	327	434	513	602	696
	=====	=====	=====	=====	=====	=====	=====	=====	=====
Th.Inv. Financing Capacity	136	242	514	668	827	934	1,013	1,102	1,196
Actual Inv. Financing Capacity	(539)	(420)	(16)	290	625	826	1,013	1,102	1,196

Table 8.2.5
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

Scenario 1: Complete Reform

ProForma Balance Sheets

per year, as of December 31

US\$ million)

Source :	ФАКТИЧНО	ЗАПЛАНОВАНО								
	ACTUAL	PROJECTED					1997	1998	1999	2000
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
ASSETS										
Cash	42	184	198	366	693	1,127	1,640	2,242	2,938	
Accounts Receivables	968	975	829	704	599	598	638	680	725	
Inventories	418	425	383	344	310	301	303	304	306	
Current assets	1,428	1,584	1,409	1,414	1,602	2,027	2,581	3,226	3,969	
Fixed assets	23,418	38,548	39,048	39,548	40,048	40,548	41,048	41,548	42,048	
Accumulated depreciation	12,439	23,287	24,146	25,016	25,897	26,830	27,774	28,730	29,697	
Net Fixed assets	10,979	15,261	14,902	14,532	14,151	13,718	13,274	12,818	12,351	
Deffered Charges	0	0	0	0	0	0	0	0	0	
Other assets	30	0	0	0	0	0	0	0	0	
Total Assets	12,437	16,845	16,311	15,946	15,752	15,745	15,855	16,045	16,321	
LIABILITIES										
Current Liabilities	692	600	510	434	368	326	328	329	331	
Long Term Debt	1	0	0	0	0	0	0	0	0	
Provisions	0	0	0	0	0	0	0	0	0	
Paid in Capital										
Authorized Capital	12,921	12,922	12,922	12,922	12,922	12,922	12,922	12,922	12,922	
Retained Earning (Loss)	(852)	(1,177)	3,323	2,879	2,590	2,461	2,496	2,605	2,793	
Current income	(325)	4,500	(444)	(288)	(129)	35	109	188	274	
Total Equity	11,744	16,245	15,801	15,513	15,384	15,418	15,527	15,715	15,990	
Liabilities and Equity	12,437	16,845	16,311	15,946	15,752	15,745	15,855	16,045	16,321	

Table 8.2.6
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

Scenario 1: Complete Reform

ProForma Ratio Analysis

ФАКТИЧНО

ACTUAL

ЗАПЛАНОВАНО

PROJECTED

Source :	1997	1998	1999	2000	2001				
Efficiency:									
Revenue turnover	18.8%	13.2%	14.4%	15.8%	17.3%	18.9%	20.6%	22.6%	24.8%
Receivables turnover *	169	174	139	111	88	83	84	85	85
Inventory turnover *	73	76	64	54	46	42	40	38	36
Number Employees	300,000	300,000	255,000	216,750	184,238	175,026	166,274	157,961	150,063
Traffic Units /Employee	717	697	792	905	1,039	1,096	1,157	1,224	1,298
Pricing :									
Net ton /km (million)									
@ US\$ per Tkm	0.011	0.011	0.011	0.012	0.013	0.014	0.014	0.015	0.016
Million Passenger/km									
@ US\$ per Pas-km	0.006	0.006	0.007	0.009	0.010	0.011	0.012	0.013	0.014
Profitability :									
Working Ratio	77%	79%	72%	66%	62%	58%	56%	54%	52%
Operating Ratio	149%	125%	116%	109%	102%	97%	93%	90%	86%
Return on Fixed Assets	-10.7%	-3.3%	-2.3%	-1.4%	-0.4%	0.6%	1.4%	2.3%	3.4%
Liquidity :									
Working Capital needs	695	800	701	615	540	573	613	655	700
Current Ratio	2.07	2.64	2.76	3.26	4.35	6.21	7.88	9.80	11.99
Quick Ratio	2.00	2.33	2.38	2.42	2.47	2.76	2.87	2.99	3.12
Capitalization:									
Asset Leverage	5.6%	3.6%	3.1%	2.7%	2.3%	2.1%	2.1%	2.1%	2.0%

Graph 8.2.7: Main Financial Indicators

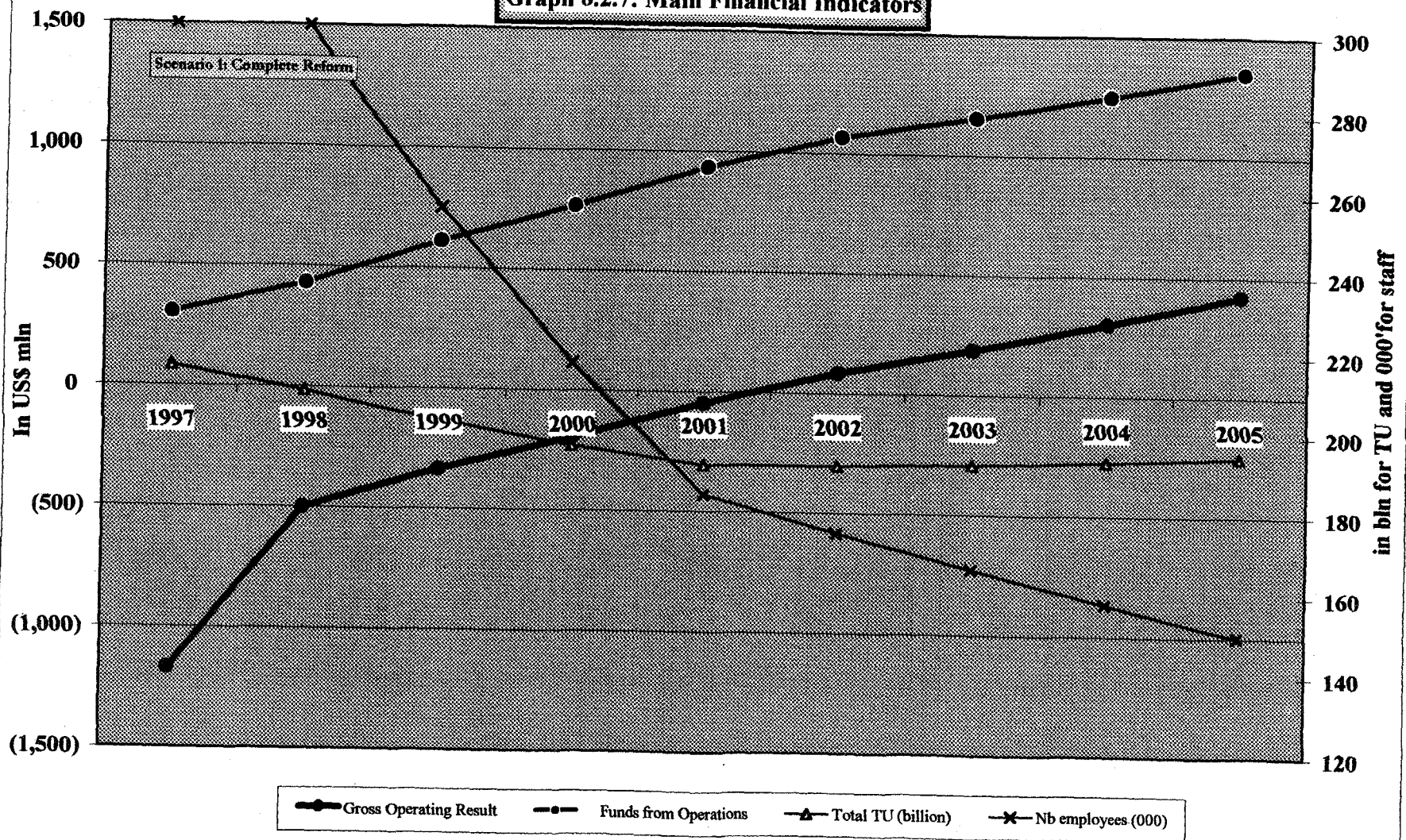


Table 8.2.1

UKRAINIAN RAILWAYS		ACTUAL АКТУАЛЬНО			PROJECTED ЗАПЛАНОВАНО					
Traffic estimates and Average tariff per product		1997	1998	1999	2000	2001	2002	2003	2004	2005
TRAFFIC DATA										
Product 1: Ores										
Freight (mln t)	59	60	57	55	52	52	52	52	52	52
Freight (mln t.km)	34,750	34,750	33,013	31,362	29,794	29,794	29,794	29,794	29,794	29,794
Average trip (km)	590	575	575	575	575	575	575	575	575	575
Average freight tariff (Hrv / t.km)	0.014	0.014	0.014	0.015	0.015	0.015	0.015	0.015	0.016	0.016
Product 2: Coal & Coke										
Freight (t)	99	92	90	89	87	83	78	74	71	71
Freight (mln t.km)	32,000	30,000	29,400	28,812	28,236	26,824	25,483	24,209	22,998	22,998
Average trip (km)	322	325	325	325	325	325	325	325	325	325
Average freight tariff (Hrv / t.km)	0.022	0.022	0.022	0.022	0.023	0.023	0.023	0.024	0.024	0.024
Product 3: Black Metals										
Freight (t)	31	31	31	31	31	31	31	31	31	32
Freight (mln t.km)	17,100	17,100	17,186	17,271	17,358	17,445	17,532	17,619	17,708	17,708
Average trip (km)	560	560	560	560	560	560	560	560	560	560
Average freight tariff (Hrv / t.km)	0.023	0.023	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024
Product 4: Construction Materials										
Freight (t)	49	49	49	50	50	51	51	52	52	52
Freight (mln t.km)	17,500	17,000	17,170	17,342	17,515	17,690	17,867	18,046	18,226	18,226
Average trip (km)	355	350	350	350	350	350	350	350	350	350
Average freight tariff (Hrv / t.km)	0.019	0.019	0.019	0.020	0.020	0.020	0.021	0.021	0.021	0.021
Product 5: Oil & Oil products										
Freight (t)	24	24	24	25	25	25	25	25	25	25
Freight (mln t.km)	13,600	13,600	13,668	13,736	13,805	13,874	13,943	14,013	14,083	14,083
Average trip (km)	565	560	560	560	560	560	560	560	560	560
Average freight tariff (Hrv / t.km)	0.025	0.025	0.025	0.025	0.025	0.026	0.026	0.027	0.027	0.028
Other Products										
Freight (t)	72	75	75	76	76	77	77	77	77	78
Freight (mln t.km)	45,500	45,000	45,225	45,451	45,678	45,907	46,136	46,367	46,599	46,599
Average trip (km)	635.0	600	600	600	600	600	600	600	600	600
Average freight tariff (Hrv / t.km)	0.024	0.024	0.025	0.025	0.025	0.026	0.026	0.027	0.027	0.027
Total Freight										
Freight (t)	334	333	327	324	321	317	314	312	309	309
Freight (mln t.km)	160,450	157,450	155,601	153,974	152,336	151,533	150,755	150,048	149,408	149,408
Average trip (km)	481	475	475	475	475	476	480	481	483	483
Average freight tariff (Hrv / t.km)	0.024	0.024	0.024	0.024	0.024	0.024	0.025	0.025	0.025	0.025

Table 8.2.2
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

Forecasted Statistics
 for the years ended december 31st

Source :	ФАКТИЧНО ACTUAL		ЗАПЛАНОВАНО PROJECTED						
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Freight :									
Total Freight (mln tons)	334	331	327	324	321	317	314	312	309
Total Freight (bln tkm)	160.5	157.5	155.7	154.0	152.4	151.5	150.8	150.0	149.41
Passengers:									
Total Passengers (mln pas.)	506	469	445	423	402	382	363	344	327
Total Passenger (bln p.km)	54.6	51.5	48.9	46.5	44.2	41.9	39.8	37.9	36.0
Other									
Total TU (bln)	215.0	209.0	204.6	200.5	196.5	193.5	190.6	187.9	185.4
Number Employees	300,000	300,000	297,000	294,030	291,090	285,268	279,563	273,971	268,492
Productivity /Employee	717	697	689	682	675	678	682	686	690
Turnover /Employee	6,879	6,738	6,765	6,798	6,835	7,036	7,218	7,410	7,613
Salary/Employee (Hrv/month)	84	100	105	110	116	122	128	134	141

Table 8.2.3
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

Українські залізничні дороги

ProForma Income Statements
for the years ended december 31st
US\$ million)

Source :	ФАКТИЧНО ACTUAL		ЗАПЛАНОВАНО PROJECTED										
	1997	1998	1999	2000	2001								
Revenue :													
Freight	1,687	1,655	1,658	1,663	1,668	1,687	1,708	1,729	1,752				
Passengers	326	317	301	286	272	261	250	240	231				
Other	51	50	50	50	50	59	60	61	61				
Operating Revenues	2,064	2,021	2,009	1,999	1,990	2,007	2,018	2,030	2,044				
Expense :													
Salaries & Benefits	445	475	532	554	578	593	610	628	646				
Materials	489	475	465	456	447	440	434	427	422				
Other operating expenses	557	541	530	519	509	501	493	486	480				
Other overhead expenses	100	100	88	88	88	75	75	75	75				
Working Expenses	1,591	1,591	1,614	1,617	1,621	1,609	1,612	1,617	1,622				
Operating Result	473	430	395	382	368	398	406	414	422				
Depreciation	1,475	738	744	749	755	795	800	806	812				
Provision for bad debts	169	165	166	166	167	169	171	173	175				
Gross Operating Result	(1,170)	(473)	(514)	(533)	(553)	(565)	(565)	(565)	(566)				
Non operating items	0	0	0	0	0	0	0	0	0				
Extraordinary items (net)	(770)	0	0	0	0	0	0	0	0				
Provision for Social Program			0	0	0	0	0	0	0				
Net Income (Loss)	(400)	(473)	(514)	(533)	(553)	(565)	(565)	(565)	(566)				
before taxes													
Taxes			0	0	0	0	0	0	0				
Current Income	(400)	(473)	(514)	(533)	(553)	(565)	(565)	(565)	(566)				
Operating Expenditures	3,066	2,495	2,523	2,532	2,543	2,572	2,583	2,596	2,610				

Table 8.2.4
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

Scenario 1: Status Quo
ProForma Sources & Uses of Funds
per year, as of December 31
US\$ million)

Source :	ФАКТИЧНО ACTUAL		ЗАПЛАНОВАНО PROJECTED						
	1997	1998	1999	2000	2001	2002	2003	2004	2005
SOURCES OF FUNDS									
Net Income after Taxes	(400)	(473)	(514)	(533)	(553)	(565)	(565)	(565)	(566)
Depreciation & Provisions	1,475	904	909	915	921	963	971	979	987
Other	(770)	0	0	0	0	0	0	0	0
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Funds from Operations	305	430	395	382	368	398	406	414	422
Write off & Sale of assets	0	0	0	0	0	0	0	0	0
Borrowings	0	0	0	0	0	0	0	0	0
Equity Capital	0	0	0	0	0	0	0	0	0
Change in working capital		(14)	0	0	0	86	(3)	(4)	(5)
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Financing	0	(14)	0	0	0	86	(3)	(4)	(5)
Total Sources	305	416	395	382	368	484	403	409	416
	=====	=====	=====	=====	=====	=====	=====	=====	=====
USES OF FUNDS									
Repayment of LT Debt	0	0	0	0	0	0	0	0	0
Re-evaluation of assets	0	0	0	0	0	0	0	0	0
Net Plant & Equipment	0	100	250	250	250	250	250	250	250
Change in Working Capital needs		92	0	0	0	92	7	7	6
Bad debts	169	165	166	166	167	169	171	173	175
Staff rightsizing program	0	0	0	0	0	0	0	0	0
	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total Uses	169	357	416	416	417	511	428	430	431
	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total Sources & Uses	136	59	(21)	(34)	(48)	(26)	(25)	(20)	(15)
	=====	=====	=====	=====	=====	=====	=====	=====	=====
Th. Inv. Financing Capacity	136	159	229	216	202	224	225	230	235
Actual. Inv. Financing Capacity	(539)	(502)	(434)	(449)	(465)	(367)	(287)	(202)	(115)

Table 8.2.5
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

ProForma Balance Sheets
per year, as of December 31
US\$ million)

Source :	ФАКТИЧНО ACTUAL					ЗАПЛАНОВАНО PROJECTED				
	1997	1998	1999	2000	2001	1997	1998	1999	2000	2001
ASSETS										
Cash	42	101	81	47	(2)	(28)	(53)	(73)	(88)	
Accounts Receivables	968	975	975	975	975	844	854	865	876	
Inventories	418	425	425	425	425	470	463	457	451	
Current assets	1,428	1,501	1,481	1,447	1,398	1,286	1,264	1,249	1,239	
Fixed assets	23,418	33,548	33,798	34,048	34,298	34,548	34,798	35,048	35,298	
Accumulated depreciation	12,439	23,177	23,921	24,670	25,424	26,219	27,019	27,825	28,637	
Net Fixed assets	10,979	10,371	9,877	9,378	8,874	8,329	7,779	7,223	6,661	
Deffered Charges	0	0	0	0	0	0	0	0	0	
Other assets	30	0	0	0	0	0	0	0	0	
Total Assets	12,437	11,872	11,358	10,825	10,272	9,615	9,043	8,471	7,899	
LIABILITIES										
Current Liabilities	692	600	600	600	600	508	501	494	488	
Long Term Debt	1	0	0	0	0	0	0	0	0	
Provisions	0	0	0	0	0	0	0	0	0	
Paid in Capital										
Authorized Capital	12,921	12,922	12,922	12,922	12,922	12,922	12,922	12,922	12,922	
Retained Earning (Loss)	(852)	(1,177)	(1,650)	(2,164)	(2,697)	(3,250)	(3,815)	(4,380)	(4,946)	
Current income	(325)	(473)	(514)	(533)	(553)	(565)	(565)	(565)	(566)	
Total Equity	11,744	11,272	10,758	10,225	9,672	9,107	8,542	7,977	7,411	
Liabilities and Equity	12,437	11,872	11,358	10,825	10,272	9,615	9,043	8,471	7,899	

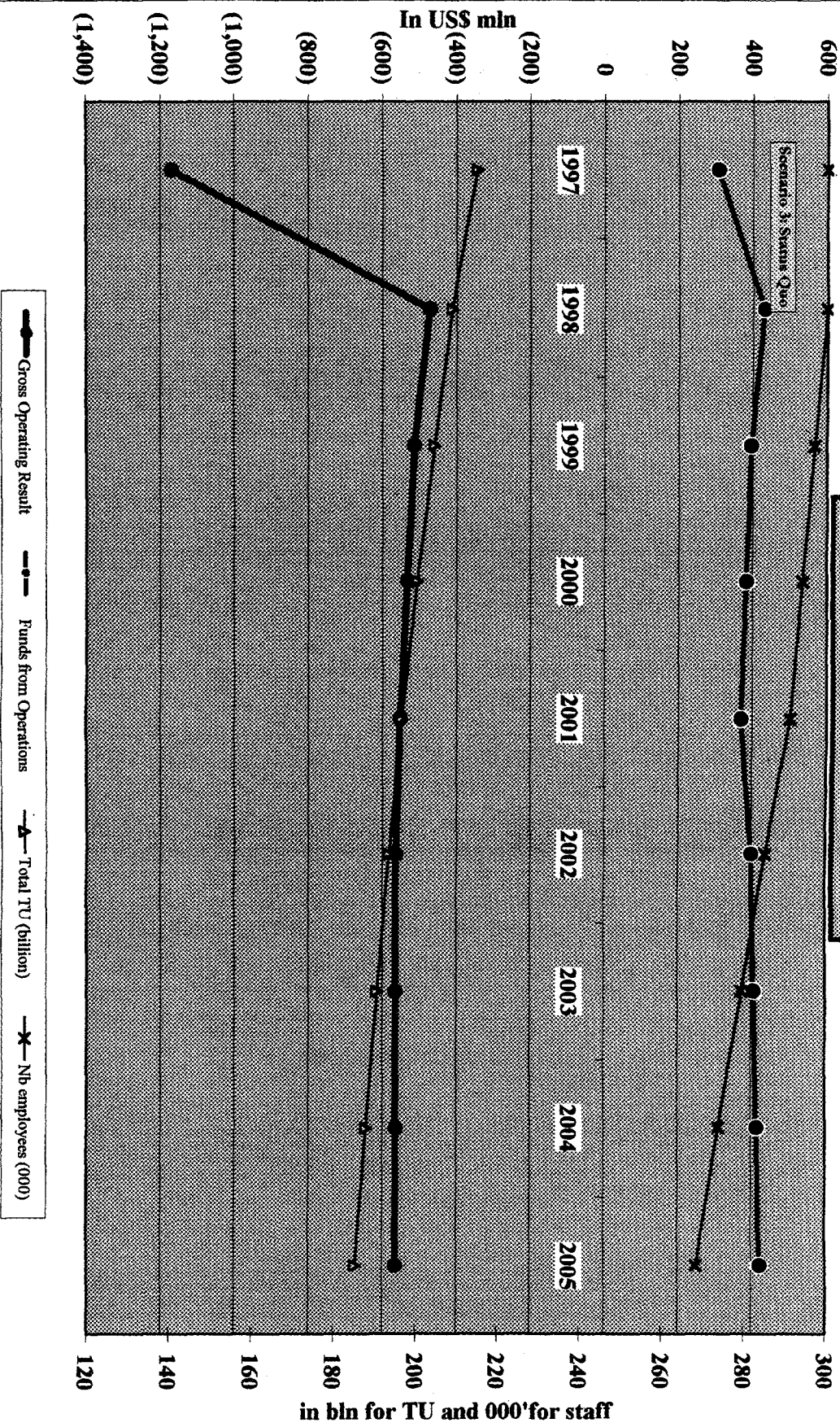
Table 8.2.6
TRANSPORT SECTOR REVIEW
UKRAINIAN RAILWAYS

Scenario 1 - Status Quo

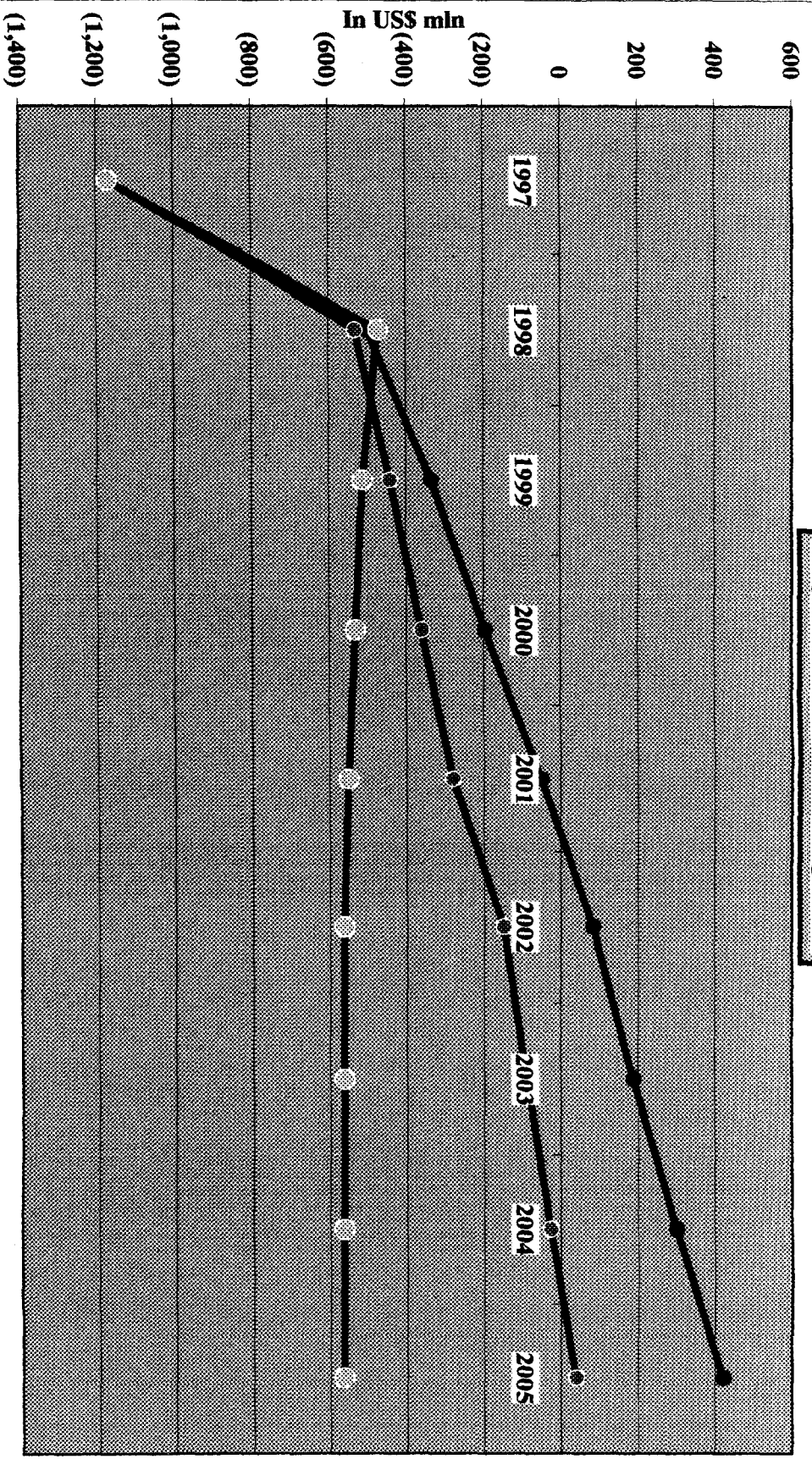
ProForma Ratio Analysis
ФАКТИИЧНО
ЗАПЛАНОВАНО
ACTUAL
PROJECTED

Source :	1997	1998	1999	2000	2001				
Efficiency:									
Revenue turnover	18.8%	19.5%	20.3%	21.3%	22.4%	24.1%	25.9%	28.1%	30.7%
Receivables turnover *	169	174	175	176	176	151	152	153	154
Inventory turnover +	73	76	76	77	77	84	83	81	79
Number Employees	300,000	300,000	297,000	294,030	291,090	285,268	279,563	273,971	268,492
Traffic Units /Employee	717	697	689	682	675	678	682	686	690
Pricing :									
Net ton /km (million) @ US\$ per Tkm	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.012	0.012
Million Passenger /km @ US\$ per Pas-km	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
Profitability :									
Working Ratio	77%	79%	80%	81%	81%	80%	80%	80%	79%
Operating Ratio	149%	123%	126%	127%	128%	128%	128%	128%	128%
Return on Fixed Assets	-10.7%	-4.6%	-5.2%	-5.7%	-6.2%	-6.8%	-7.3%	-7.8%	-8.5%
Liquidity :									
Working Capital needs	695	800	800	800	800	806	816	827	839
Current Ratio	2.07	2.50	2.47	2.41	2.33	2.53	2.52	2.53	2.54
Quick Ratio	2.00	2.33	2.33	2.33	2.33	2.59	2.63	2.67	2.72
Capitalization:									
Asset Leverage	5.6%	5.1%	5.3%	5.5%	5.8%	5.3%	5.5%	5.8%	6.2%

Graph 8.2.7: Main Financial Indicators

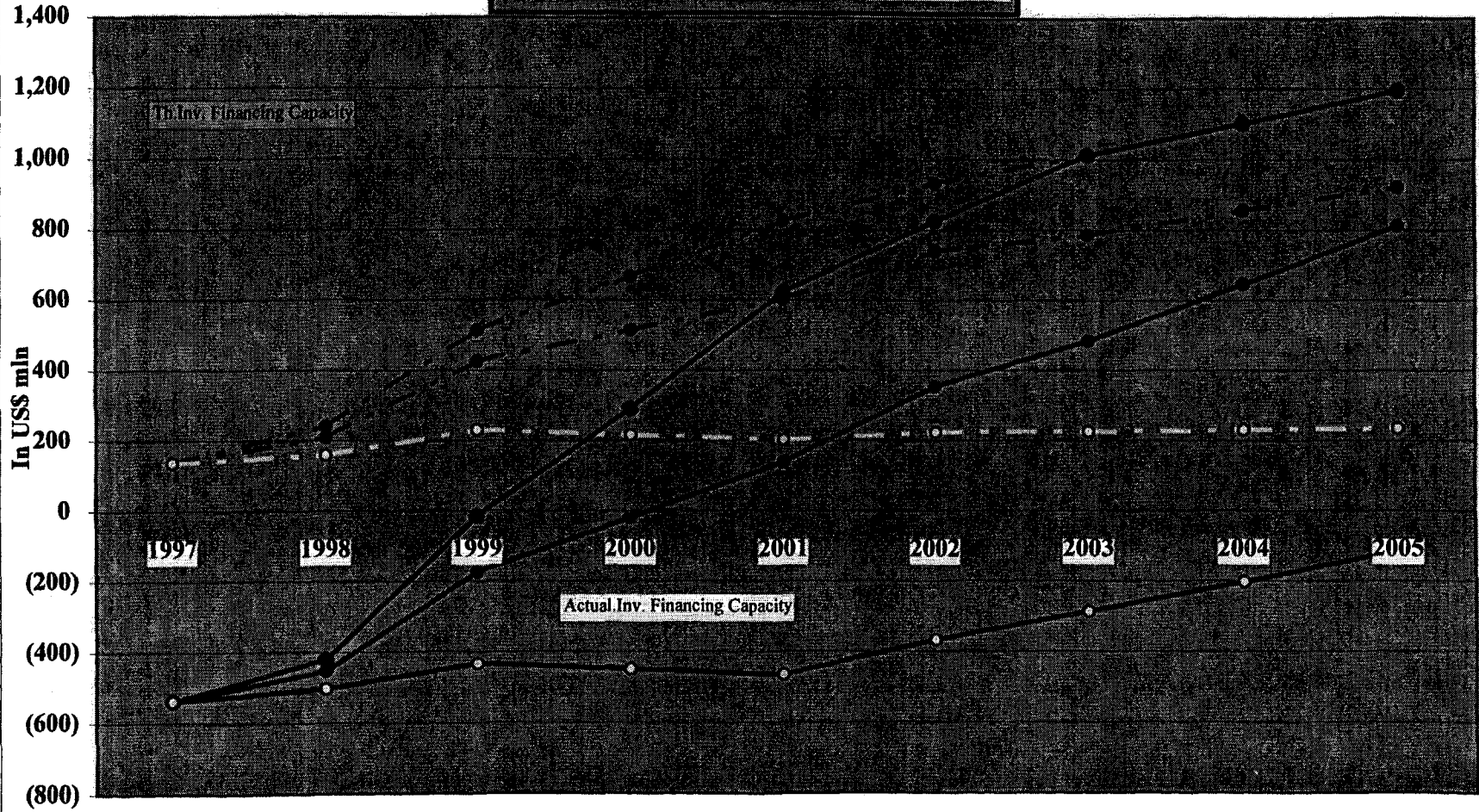


Graph 8.2.8: Gross Operating Result



Scenario 1: Complete Reform
 Scenario 2: Gradual Reform
 Scenario 3: Status Quo

Graph 8.2.9: Investment Financing Capacity



-●- Scenario 1: Complete Reform -●- Scenario 2: Gradual Reform -○- Scenario 3: Status Quo
 -●- Scenario 1: Complete Reform -●- Scenario 2: Gradual Reform -○- Scenario 3: Status Quo

Annex 9.1. The Main Seaports of Ukraine

This section describes in more details the ports in the following locations : Odessa, Ilyichevsk, Mariupol, Izmail, Reni, Nikolayev, Kherson, Sevastopol, Theodosia, and Kerch.

Main Ports

- 1. Odessa Port.** Odessa port was founded in 1794. It has an old layout consisting of finger piers, has a total of 40 berths with a total length of 7 km and water depths varying from 10.5 m to 12.5 m. In spite of its obsolete layout, typical of old port design with narrow finger piers, and being cramped by the city, not being able to expand its land side area, it handles the largest tonnage of cargo among the rest of the ports in Ukraine. In 1997 it amounted to about 21 million tons, of which 70% (14.4 million tons) consisted of transit (export mostly of Russian oil), and 21% of steel products, containers represented only 2% of the total cargo handled. In 1990 total tonnage handled in Odessa port was 28 million tons, of which 64% (18 million tons) was export of Russian oil. Annual capacity of the port is about 35 million tons. The port of Odessa, represents alone about 50% of the export and transit traffics with the oil transshipment (about 14 million tons). Despite its good results and constant traffic increase, has lost important tonnage of dry cargo and containers (1997 containers traffic level is 51.500 TEU, down from 64.500 T.E.U in 1996).
- 2. Port operations** are divided into six zones specializing in: a) chemicals, steel products, general cargo, and containers; b) cereals in bulk, paper, and general cargo; c) general cargo consisting mainly of steel products, paper rolls, pipes, timber, and chemicals; d) import cargo; e) refrigerated cargo; and f) grain. The oil handling facilities are located to the north of the ports. Each of the six zones are managed by a stevedoring company with which the port has "a joint agreement". The stevedoring companies absorbed a total of 2,000 workers of the ports. These joint agreement operations were initially not accepted either by the MOT or the Fund of the State Property. It took three years for the Odessa port to convince the Government of the benefits in such operations and to obtain an official permission for the "joint arrangement" operations with the stevedoring companies. This is not an ideal arrangement, however, under the existing legal system, it is the only one which is workable, as neither "joint ventures" nor "leasing" of the port property is allowed under the Ukrainian law.
- 3. The Oil Terminal** in Odessa port has recently been rehabilitated. It has four berths, admitting ships of maximum of 70,000 DWT. All berths can load or unload crude oil and products, and can handle up to 30 million tons annually. The port has storage facilities for crude oil in the amount of 150,000 tons, and for light products of 120,000 tons. The oil port is equipped with marine environmental protection equipment to take care of any problem related to oil spills. Given the spare capacity of about 15 million tons for crude oil and products, it is not clear why a new facility is being built in Yuzhni port for handling the same amount of oil and products in the first stage of its developments.

4. One of the main problems of the Odessa port is the land access. All trucks have to go through the city creating traffic jams. The Odessa port has found a solution to this problem by initiating construction of a 4.5 km long elevated road out of the port with a capacity of 200 trucks per hour. Already 800 m of the access road has been built, the rest is planned to be completed in two years. The estimated cost of construction is US\$ 50 million.

5. Odessa Port is operating at just about its capacity. However, its existing capacity can be increased if the area occupied by the navy is ceded to the port. This would provide additional storage areas, as well as additional berthing space. It is understood that the navy might be willing to give up its territory and move to Sevastopol. The port has also the option of reclaiming additional land on the south, which has already been initiated and is continuing with the financial support of the stevedoring companies.

6. **Ilyichevsk Port.** Ilyichevsk port was built in 1958. The port has 28 berths with a total length of about of 5.5 km, and with water depths varying from 9 m to 12 m. Theoretical annual capacity of the port is about 13.0 million tons. In 1997, it handled about 9.0 million tons, and was second after Odessa. Of the total tonnage handled, 65% accounted for export, 24% for transit, and 1% for imports. The port is divided into seven terminals, specializing in: a) steel products, b) containers, c) grain, d) vegetable oil, e) fertilizers, and f) a pier for RO/RO ships and railway ferries operating to Varna port in Bulgaria and Poti port in Georgia. Unlike Odessa, all terminals are operated by the port. The port also has a container repair facility, which is not very active at this time.

7. The port is carrying out the following investments: a) rehabilitating and equipping berths #1 and #2 mainly for handling steel products at a total estimated cost of US\$120.0 million, of which 40% has already been invested; b) a new grain terminal by Cyrus American at US\$ 12 million, mostly completed, the port is considering to double the capacity of the grain terminal and invest an additional US\$12.0 million; c) a new potash fertilizer terminal at the existing berth #12 at US\$4.0 million, invested by Russia, d) a cement terminal at the back of berth #22 by Driktron Europe at US\$8.0 million, e) terminal for wine and alcohol at US\$4.0 million by French company Naval, f) terminal for handling chemical products and storage tanks at US\$6.0 million by Ukrainian/American company, to be built on the eastern shore of the bay, g) multimodal container terminal for chemical and hazardous cargo at the ferry terminal, at ECU 7.0 million by European Community for further development of Corridor #9. The port is also planning to set up its own shipping line, and is trying to obtain financing for two or three river/sea type (Volga/Balt) of 5,500 DWT capacity each. In addition, the port is also planning to replenish its stock of equipment ranging from 16 tons to 32 tons forklifts, cranes, front-end loaders, etc. at a total cost of US\$8.0 million

8. The Ilyichevsk port has fairly good road and railway accesses, however, the road network inside the port requires improvements. The general layout of the port is better suited for handling cargo than Odessa ports. It has a strip of land behind the berths of 400 m. to 500 m. wide, the quays are almost in a straight line which enables making best use of the facilities. The port is over equipped with portal cranes, which is the case with most of the FSU country ports, utilization of these cranes on the average is only about 50%. These cranes in the future need to be reduced in number and replaced by more efficient types of equipment to improve cargo handling rates, and reduce ship service time, which is excessive. Mean productivity level in Ilyichevsk port is low at 6.6 tons per hour for loading and 4.8 tons per hour for unloading per docker and is about half of

those achieved in European ports. Container handling rates of 10 units per hour needs also to be improved. These improvements could be achieved with the help of private sector involvement in port operations, where the stevedoring companies would bring along their know how and appropriate equipment to increase the productivity in cargo handling operations and cut down the costs:

9. **Yuzhni Port.** Yuzhni port was built in 1978, to initially serve a chemical plant, built in its vicinity. The port has good land and rail accesses. The port has a total of six berths with a total length of 1,500 m. Depths of water at berths vary from 12.5 m. to 14.0 m. The berths have been built to accommodate deepening in the future up to 19 m. of water depth. The theoretical capacity of the port is about 16.0 million tons per year, could be increased up to 40.0 million tons per year. In 1997 it handled about 9.0 mil tons, of which 61% was export, and 38% was transit. Port operations are divided into five areas specializing in: a) loading of carbonide in bulk and in bags (lately loading in bags has been discontinued); b) loading of liquid gasses e.g. ammonia, super phosphoric acid, methanol, and nitrile-acrylic acid; c) reclamation of sand; d) handling coal and various ores as well as steel products; e) unloading of phosphate. All of the berths, except for the coal terminal, and sand reclamation terminal, are operated by the manufacturers of the specific cargo. The coal complex, consists of: two berths 750 m long with 14 m water depth, open storage areas, coal car dumper, stackers and conveyor belt lines, with quay side portal cranes. Due to increases in cost of rail transport in Russia, coal practically stopped coming from Russia to Yuzhni ports. At this time the port is handling mainly steel products and some ores, the equipment for handling coal is idle. The phosphate terminal built in 1983, in the first phase of development was to handle 2.5 million tons per year (total development was conceived for 10 million tons per year). It was not operated until last year, when a 4,000 DWT ship was unloaded into railway wagons. The reason for this delay was due to the opposition from the environmentalists. Last year the Regional Environmental Authority reviewed the phosphate terminal together with foreign experts and on the basis of favorable conclusions reached, lifted the environmental ban. Now the terminal may unload phosphates without any further restrictions.

10. For import of crude oil, an oil terminal with an offshore single mooring buoy is being built at Yuzhni. In the first phase of development it is planned to handle 12.0 million tons per year, and at its full development 40.0 million tons. The first phase of development is scheduled to be completed by the year 2,000. Oil pipes to connect to the storage tanks are already at the site. The storage tanks for the first stage of development will be of 80,000 tons capacity and for the second stage of development will be 250,000 tons. The construction of the terminal has been slowed down due to some problems encountered in financing of the project. It is not clear why this project is going ahead when Odessa port has spare capacity in import of crude oil and products equivalent to the first stage development of the oil terminal in Yuzhni.

11. In comparison with Odessa and Ilyichevsk ports, Yuzhni port does not have a long berthing line. This creates a problem, as investments for construction of new berths are significant while conversion of existing berths for adaptation to new types of cargo to be handled, is significantly less expensive. This feature slows down expansion possibilities of the ports.

12. Yuzhni port is carrying out the following investments: a) at berth #17, the site of phosphate complex, two warehouses of 70,000 cu. m. each are being built for perishable cargo and bagged cargo e.g. sugar, flour etc.; b) berth #4, used for loading super phosphoric acid, is idle; the port is planning to start a passenger service from there; c) Cargill of USA is interested in investing in

Yuzhni port in a grain handling facility. However ownership or lease of land by foreign company is not clearly defined in legal terms which creates concerns on behalf of the investor. The newly elected Parliament of Ukraine will look into this problem sometime this year and take a decision to resolve it. Also in this connection, the President of Ukraine created " A Special Quick Reaction Unit" to facilitate settlement of problems arising from the implementation of the investment by the American companies, which is expected also to help to settle the investment problem in Yuzhni ports.

Remaining Important Sea Ports of Ukraine

13. Of the remaining important Ukrainian seaports, according to the tonnage handled in the descending order are: Mariupol, Izmail, Reni, Nikolayev and Kherson ports.

14. **Mariupol Port.** Mariupol port is located on the Azov Sea. The port has 16 berths, with a total length of about 3,000 m, with depth of water of about 8.5 m. In 1997 the port handled about 6.4 million tons. Of the total tonnage handled, about 50% accounted for transit cargo, 49 % for export, and about 1% for imports. Maximum annual throughput capacity of the port is 14.0 million tons. Coal was the major cargo handled by the port, but with the dwindling down of this cargo, steel products and fertilizer will most probably account for the major part of traffic. Container traffic may increase to some extent. The port has rail and road accesses, with an unusual feature of road overpassing the railways. Mariupol port is well placed with respect to the economic and industrial centers of Ukraine, in particular to the Donbass Region. It is also well placed to Russia's industrial areas, and its access to the Volga-Don basin from where 9 months of the year barges arrive carrying mostly fertilizer. In spite of all these benefits, the restricted nautical access, limits the development of the port to cargo destinations not further than the Mediterranean Sea.

15. **Izmail Port.** Port facilities are located in three different sites along the Danube River: a) at the site #1, there are 7 river berths with total length of 650 m., with water depth ranging from 1.0 m. to 4.0 m., and one berth for sea ships 150.0 m. long with water depth of 7.5 m.; b) at the site #2, there are 7 berths with a total length of 1,000.0 m., and water depth of 7.5 m.; and c) at site #3, there is a small dock mainly for handling sand and building materials. In 1997 the port handled about 4.0 million tons. Of the total tonnage handled, about 85% accounted for exports, and 12% for transit. Steel products and various ores in bulk accounted for most of the cargo handled. The port also handles containers. Maximum annual throughput capacity of the port is about 9.0 million tons. Izmail port due to its location on the Danube river can play a major role in multimodal transport serving Danube and CIS countries. However, with the political instability in the Balkans traffic through the port may actually further decrease. A major disadvantage of the port is its being far from the industrial areas of Ukraine. Izmail port was conceived mainly for direct loading from train wagons to barges or vice versa. The port has limited open and covered storage, which is a disadvantage taking into account the cargo handling operations in the future that will require extensive storage areas.

16. **Reni Port.** Reni port is located at three sites on the Danube river: a) at the site #1 there are 9 berths with a total length of 900.0 m., of which seven are for river transport with water depths of 3.5 m. and the remaining two with water depths of 7.5 m.; b) at the site #2 there is an old oil terminal and two RO/RO piers; c) at site #3 there are 12 berths, with water depth of about 7.5 m. In 1997 the port handled about 2.5 mi. tons. Of the total tonnage handled, transit and export

cargoes are split half way. Most of the cargo consists of metal and various bulk commodities. The port has a maximum annual throughput capacity of 10.0 million tons. RO/RO operations started in 1993 between Reni and Russe on the Danube in Bulgaria appear to be doing well. Political instability in the Balkans resulted in significant reduction in traffic of the ports. There is also a problem of the railway line to the port which goes across Moldova for an appreciable length, which causes increases in transport costs on account of high rail tariffs in Moldova and time lost in border crossing.

17. **Nikolayev Port.** Nikolayev port is located on the estuary of the Bug river, it has 14 berths, of about 3.0 km long, with water depths ranging from 8.3 m. to 10.5 m. In 1997 the port handled about 1.9 million tons. Of the total tonnage handled, about 55% accounted for transit cargo, and 38% for exports. The maximum annual throughput of the port is 9.0 million tons. Around half of the port capacity was dedicated to handling of iron ore and coal, both of these cargoes have stopped coming to Nikolayev ports. At present the main cargo consists of steel products. Nikolayev port is located at the crossing of the railroads going east, west and north toward Russia. The port is also located on the main road linking Odessa with Mariupol. The port is surrounded by the city and cannot be expanded. It has draught limitations; maintenance dredging of a long approach channel to the sea is very costly. The cost of dredging was previously borne by the users e.g. Navy as in Nikolayev was a large naval ship building yard. The maintenance costs of the channel could not be absorbed by Nikolayev port alone, this may hamper the future operation and development of the ports.

18. **Kherson Port.** Kherson port is located on the Dniepr river, 85 km. from the Black sea. The entrance channel to the port is 5.5 m. deep, and in some places even shallower due to arrears in dredging. The port facilities are divided into three sites: a) at site #1 there are five berths of a total length of about 550m. with depth of water varying from 7.3 m. to 8.3 m.; b) at site #2 there are 4 berths managed by Ministry of Agriculture; at site #3 there exist three basins mainly used for handling sand. In 1997 the port handled about 1.5 mi. tons, of which 61% was transit cargo, and 38% was export cargo. The port mainly handles chemical products, and sand. Maximum annual throughput capacity of the port is 4.0 million tons. The port has railway connections, but no road access. It is well placed with respect to industries and economic centers, however, due to restricted draughts, its cargo handling possibilities are limited. Also with river-sea ships offering direct shipping from ports on Dniepr such as Zaparojie to the final destinations in foreign countries, there is likelihood of cargo by-passing the port of Kherson.

Crimean Ports

19. The Crimean ports in spite of being ice-free, are at a disadvantage in comparison with other Ukrainian ports, especially with those of Azov Sea and Odessa region ports, due to being further away from industrial center of Ukraine and Russia. Only the ports of Sevastopol, Theodosia, and Kerch have railway links, all other ports are connected by road only. Due to additional ton kilometers required to transport cargo by road or rail to the ports, makes the ports of Crimea non competitive with other ports of Ukraine. Most of the ports of Crimea were at one time heavily involved in transport of passengers, and extraction of construction materials from the sea, e.g. sand and gravel, however, these activities over the last few years have dwindled down. Regarding the marine ecology, unfortunately most of the Crimean littoral is contaminated by garbage, with plastics predominating, disposed from ships sailing in the BLACK Sea. Of the Crimean ports, in view of their unique situation, only Sevastopol, Theodosia, and Kerch are described hereunder.

20. **Sevastopol Port.** Sevastopol was the main naval base of the USSR in the Black Sea, and continues to accommodate naval installations and naval ships of Ukraine and Russia. Due to its strategic importance, until recently it was closed to foreigners. From July 1996 the Sevastopol port was opened to foreign flag merchant ships. Sevastopol is a harbor well protected against wind and waves. It consists of two bays, the Sevastopol and Southern. The Sevastopol bay is 6.3 km. Long, 900 m. wide and 16 m. to 20 m. deep. The Southern bay is 2.3 km. Long, 500 m. wide and 12 m. to 15 m. deep. Commercial seaport in Sevastopol is located at the eastern end of the Sevastopol bay. It consists of a berth 112 m. long, with 8.5 m. depth of water. The berth has limited storage capacity, it is equipped with 3 portal cranes with capacities varying from 6 t. to 20 t. Annual cargo handling capacity of the port is estimated to be about 0.7 million tons. The port handled 0.5 million tons of general cargo in 1992, gradually annual throughput decreased to 0.16 million tons in 1997, and in 1998 the port expects to handle about 0.25 million tons. Sevastopol port is planning to expand its facilities by building additional berths with a total throughput capacity of about 2.0 million tons. Construction is planned to be completed by 2001. In the Sevastopol area along the littoral there are about 20 berths for handling passengers. In Sevastopol area, at the port of Kamishov, it is reported that 3.0 million tons of oil is exported annually.

21. The bay of Sevastopol is used by about 150 naval ships, which is the main source of pollution. The bed of the bay is heavily contaminated by oil and is covered with steel cables dropped from the ships. A Japanese bank is considering to assist in financing cleaning of the bay. However, at this time the port needs first of all to establish its ownership of land and water areas in the bay to sign relevant agreements with the navy, before proceeding with the cleaning of the bay.

22. The uniqueness of the Sevastopol port is that from 1992 to 1997 it was the only port in Ukraine that was under the municipal authority, thereafter it reverted to the Ministry of Transport. The Sevastopol Municipality was mainly involved in the port for financing passenger transport, it did not take an active part in the management of the port. At that time the port was oriented to operate as a semi autonomous commercial enterprise, which it is trying to continue in spirit at this time. On the basis of the past experience, it would be an interesting pilot experiment to revert back to municipal ownership under well structured legal and financially independent organization.

23. **Theodosia Port.** The Theodosia port consists of a pier and a basin. The basin is occupied by the navy, and commercial activities take place on the seaside of the pier. The pier consists of two parts: one is 445 m. long with depth of water varying from 5.8 m. to 7.3 m., and the second one is 275 m. long with water depth of 6.5 m. There are a total of 5 berths engaged in commercial cargo handling activities, these berths are not protected against wave disturbance, and for this reason cannot operate for about 60 to 80 days annually. At the port site there are 13 portal cranes with capacities varying from 6 t. to 20 t. Total annual throughput capacity of these berths is estimated to be about 1.5 million tons of general cargo, mainly consisting of kaolin, steel products, mineral fertilizer, sawn timber, cellulose, and non ferrous metal products. Cargo handling operations have been steadily increasing, and the port in 1996 handled about 0.50 tons, which decreased in 1997 to 0.40 tons. At a site to the north of the commercial port, is an offshore oil export facility which has an annual capacity of about 4.0 million tons. The tonnage handled there dropped to its' lowest in 1996 to 0.50 tons, in 1997 it increased to 0.70 tons. The port management is sensitive to environmental protection, in this connection it devised a system for loading of fertilizer into ships' hold. It consists of containers full of fertilizer which are lowered

into ships' hold and emptied with minimal dust being generated. For this operation the port acquired 6,000 special containers which were built at Illichevsk port. The port management is well aware of efficient port operations, however, at this stage they do not seem to be motivated in improving operations through modifications to the existing infrastructure and procurement of modern cargo handling equipment.

24. The uniqueness of the port is that in spite of being further away from other ports to the industrial region of Ukraine, it still manages to receive cargo for export. It appears that one of the reasons for this is the frustration created at the Kerch straight, through collection of significant unofficial charges over and above official charges, from the ships. In this connection it is too bad that the Theodosia port has a rather limited capacity, as otherwise it could have been an effective regulator against the charges collected at the Kerch straight.

25. **Kerch Port.** The Kerch port is 'U' shaped, with a pier on either end. There are a total of 7 berths, with the following characteristics: berths #1 and #3 are each 230 m. long, and berth #2 is 130 m. long. All three berths have a water depth of 8.75 m. and are equipped with 13 portal cranes of various capacities. Berths #4 and #5 are each 191 m. long with water depth of 8.5 m., and are equipped with 10 cranes of various capacities. Berths #6 and #7 are each 206 m. long, with water depth of 9.75 m., and are equipped with 12 cranes with maximum capacity of 40 tones. Berths #1, #4, and #5 are used mainly for general cargo, berth #2 is used for parking of port fleet, berth #3 is used mainly for metal products and sand, and berths #6 and #7 are mainly used for handling of containers, RO/RO ships, and general cargo. Total annual throughput capacity of the port is estimated at about 3 million tons. Since Independence of Ukraine, the port handled under a million tons annually. To the north of Kerch is the port of Crimea, from which during the USSR a ferry was operating to Port-Caucasus (only four miles away), thus providing a railway link from Crimea to the Caucasus. Now, only a car ferry operates between these two ports and the link has been discontinued. Thus Kerch happens to be at the end of the railway. With the disruption of the railway service to Caucasus, the Kerch port lost a significant amount of cargo.

26. The uniqueness of the Kerch port is that it also manages the straight of Kerch, and thus, in addition to the normal port activities receives additional income from the ships sailing through the straight of Kerch. It may be an interesting thought to discontinue collecting these charges and help the ports in Azov sea to increase their volume of cargo handled.

Annex 9.2. Maritime Shipping Before Independence

1. Before independence of Ukraine, in the FSU, the merchant marine fleet was responsible for meeting the needs of each port rather than the country's overall needs in international trade. Each shipping company was given a number of ports to serve, and there was no competition among them. The country's major seaports were subordinated to the regionally based national carriers. Smaller ports came under the jurisdiction as subdivisions of the carriers, and were fully integrated in the carrier's organization. The central authorities used to decide on what role a particular port should play, and directed specific types of ships and cargo there. Thus a number of ports became specialized, and each liner was responsible for carrying most of the cargo to its home base. There was no consideration given to diversification, and the centrally assigned carriers created a situation in which competitive strategy and improvement in service was of no concern.
2. With the existing monopoly of the Government in maritime shipping, the Government obliged all national forwarders to transport cargo on national shipping lines. Schedules were prepared by the Government, and accordingly the national fleet was used 100%. In some cases there were even shortages in capacity of national shipping. Also, to maximize the use of the national ships, domestic exporters were forced to arrange international cargo transactions on CIF terms, and importers were to execute freight contracts on FOB terms. Such practices were designed to ensure that national carriers carried most of the national cargo contracted for sea transport, thus minimizing foreign exchange outlays for ocean freight. An exception applied to countries with which FSU had preferential trade agreements that provided for a 50-50 split for carriers from each of the trading company.

TABLE 9.1.1- UKRAINIAN PORTS - HISTORICAL TRAFFIC PER PORT

EXPORT in 000'tons		1990	1993	1994	1995	1996	1997
PORT OF:							
Belgorod-Dnestrovskiy			233.4	151.1	332.6	195.2	221.4
Berdyansk			1,067.9	1,111.3	701.8	467.5	649.8
Ilyichevsk			5,645.2	6,924.6	6,520.8	6,733.4	5,741.1
Izmail			2,323.5	2,784.7	2,947.4	3,203.0	3,527.3
Kerch			347.6	257.0	454.8	415.0	462.5
Kherson			612.3	423.6	247.2	429.0	591.0
Mariupol			2,928.3	2,887.7	1,919.1	1,577.8	3,122.3
Nicholayev			1,044.4	982.9	584.9	220.4	711.7
Odessa			2,312.4	3,855.4	3,426.9	3,235.2	4,654.1
Okryabrsk			319.0	177.2	153.0	65.6	348.0
Reni			1,089.0	388.6	406.0	1,049.9	1,186.3
Sevastopol			17.8	3.8	64.8	40.6	45.6
Skadovsk			6.3	25.5	7.7	4.2	19.1
Theodosia			151.2	332.5	718.9	524.7	577.0
Ust-Dunaisk				69.5	128.0	157.0	164.0
Yalta			6.3				
Yevpatoria			3.0	24.3	10.4	0.1	14.0
Yuzhny			11,012.4	4,789.7	3,291.5	3,231.6	5,543.2
TOTAL			29,120.0	25,189.4	21,915.8	21,550.2	27,578.4

TABLE 9.1.2- UKRAINIAN PORTS - HISTORICAL TRAFFIC PER PORT

IMPORT in 000'tons	1990	1993	1994	1995	1996	1997
PORT OF:						
Belgorod-Dnistrovskly		2.2	3.0	3.2	3.0	3.0
Berdyansk		24.8	2.7	22.2	15.4	2.0
Ilyichevsk		1,926.6	1,169.5	1,415.5	1,494.1	1,027.3
Izmail		222.4	26.2	18.0	26.0	33.1
Kerch		106.5	1.7	1.1	38.3	82.4
Kherson		0.7	1.8	2.9	9.8	10.0
Mariupol		98.4	81.2	80.3	184.7	195.9
Nicholayev		96.8	6.5	140.7	80.2	137.5
Odessa		2,521.0	955.8	1,245.5	1,018.2	808.9
Oktyabrsk		5.4	4.0	18.0	32.6	6.2
Reni		25.0	40.8	243.5	93.1	95.0
Sevastopol						
Skadovsk		0.4				15.0
Theodosia		33.3	455.3	735.8	4.4	392.7
Ust-Dunaisk			621.9	333.0	268.0	89.0
Yalta			1.0	1.0		
Yevpatoria		0.2	1.0	9.0	18.7	27.1
Yuzhny		8.3	9.1			57.9
TOTAL		5,072.0	3,381.5	4,269.7	3,286.5	2,983.0

TABLE 9.13- UKRAINIAN PORTS - HISTORICAL TRAFFIC PER PORT

TRANSIT in 000'tons	1990	1993	1994	1995	1996	1997
PORT OF:						
Belgorod-Dnestrovskiy			56.7	72.1	47.9	15.9
Berdyansk			105.9	183.3	224.1	219.6
Ilyichevsk						2,094.9
Izmail			50.2	623.0	545.5	485.2
Kerch			582.2	636.2	418.5	411.6
Kherson			1,242.9	1,478.8	1,018.6	944.0
Mariupol			2,330.1	4,302.1	2,985.2	3,098.3
Nicholayev			292.4	386.4	904.5	1,034.0
Odessa			11,301.3	13,053.5	14,052.8	15,338.8
Oktyabrsk			35.8	225.0	260.6	115.1
Reni			1,797.0	1,808.6	1,673.7	1,213.0
Sevastopol						
Skadovsk						23.3
Theodosia			788.8	31.5	11.9	187.9
Ust-Dunaisk			198.7	218.4	466.0	298.0
Yalta						
Yevpatoria			15.0			39.4
Yuzhny			4,120.0	1,442.4	920.0	3,451.2
TOTAL		21,098.2	22,917.0	24,461.3	23,529.3	28,970.2

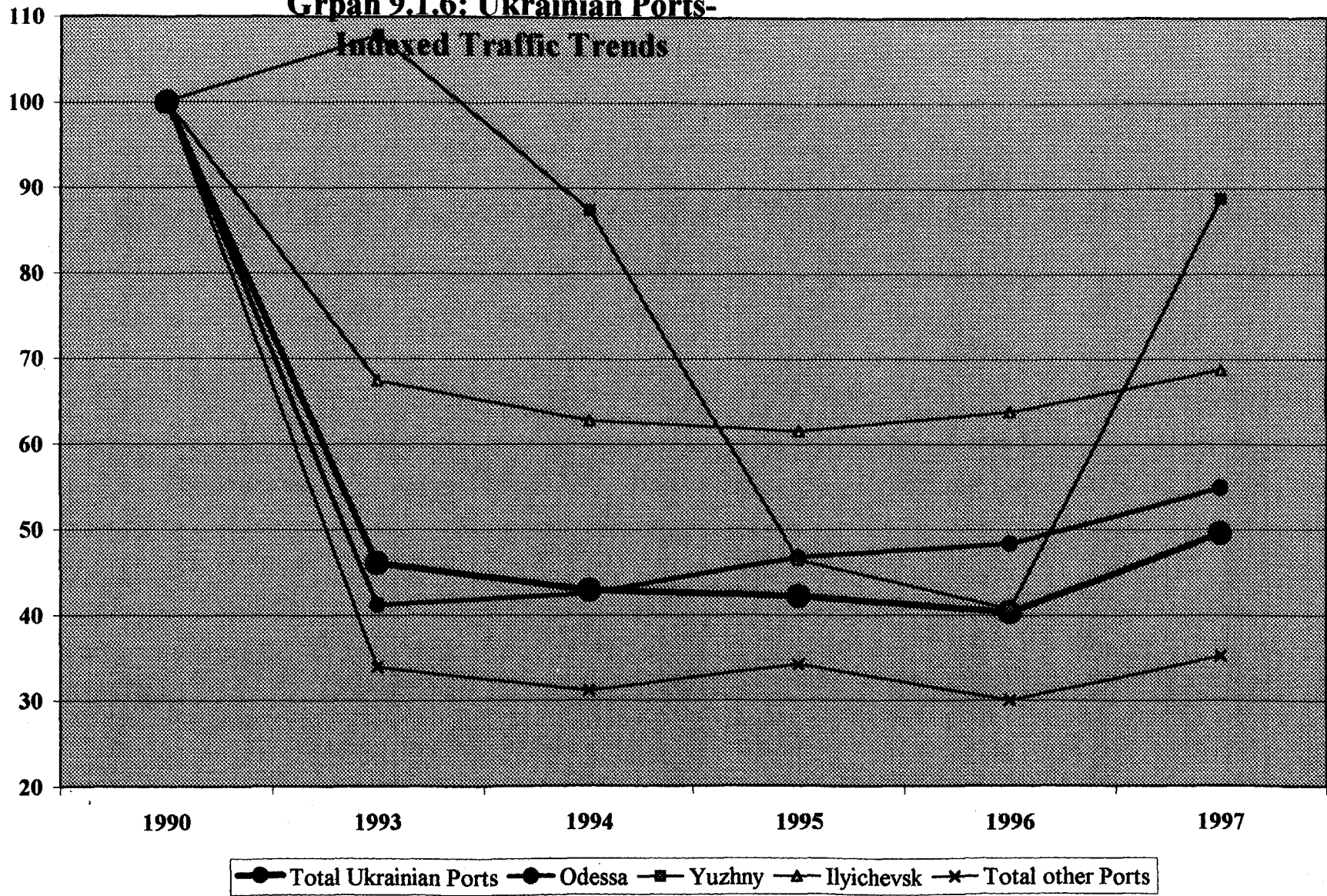
TABLE 9.1.4- UKRAINIAN PORTS - HISTORICAL TRAFFIC PER PORT

TOTAL in 000*tons		1990	1993	1994	1995	1996	1997
PORT OF:							
Belgorod-Dnestrovskiy	-	235.6	210.8	407.9	246.1	240.3	
Berdyansk	-	1,092.7	1,219.9	907.3	707.0	871.4	
Ilyichevsk	-	7,571.8	8,094.1	7,936.3	8,227.5	8,863.3	
Izmail	-	2,545.9	2,861.1	3,588.4	3,774.5	4,045.6	
Kerch	-	454.1	840.9	1,092.1	871.8	956.5	
Kherson	-	613.0	1,668.3	1,728.9	1,457.4	1,545.0	
Mariupol	-	3,026.7	5,299.0	6,301.5	4,747.7	6,416.5	
Nicholayev	-	1,141.2	1,281.8	1,112.0	1,205.1	1,883.2	
Odessa	-	4,833.4	16,112.5	17,725.9	18,306.2	20,801.8	
Oktyabrsk	-	324.4	217.0	396.0	358.8	469.3	
Reni	-	1,114.0	2,226.4	2,458.1	2,816.7	2,494.3	
Sevastopol	-	17.8	3.8	64.8	40.6	45.6	
Skadovsk	-	6.7	25.5	7.7	4.2	57.4	
Theodosia	-	184.5	1,576.6	1,486.2	541.0	1,157.6	
Ust-Dunaisk	-	-	890.1	679.4	891.0	551.0	
Yalta	-	6.3	1.0	1.0	-	-	
Yevpatoria	-	3.2	40.3	19.4	18.8	80.5	
Yuzhny	-	11,020.7	8,918.8	4,733.9	4,151.6	9,052.3	
TOTAL	-	55,290.2	51,487.9	50,646.8	48,366.0	59,531.6	

Table 9.1.5: UKRAINIAN PORTS - HISTORICAL TRAFFIC BREAKDOWN PER PORT 1993-1997									
(in million tons) PORT OF:	1993				1997				
	Export	Import	Transit	Total	Export	Import	Transit	Cabotage	Total
All main Ports				65.5	27.6	3.0	27.0	2.0	59.5
Including					46%	5%	45%	3%	
Odessa	2.3	2.5	10.7	15.6	4.7	0.8	15.2	0.1	20.8
Yuzhny	6.1	-	4.9	11.3	5.5	0.1	3.4	0.1	9.1
Ilyichevsk	3.3	1.3	3.8	8.7	5.7	1.0	1.8	0.3	8.9
Total main Black Sea ports	11.7	3.8	19.4	35.5	15.9	1.9	20.4	0.5	38.7
	33%	11%	55%	100%	41%	5%	53%	1%	100%

Table 9.1.5: UKRAINIAN PORTS - HISTORICAL TRAFFIC PER PORT 1990-1997						
(in million tons)						
PORT OF:	1990	1993	1994	1995	1996	1997
Total main Ports						
Theoretical capacity (estimates)		120	120	120	135	135
Actual traffic	120	55.3	51.5	50.6	48.4	59.5
Including						
Odessa	37.9	15.6	16.1	17.7	18.3	20.8
Yuzhny	10.2	11.0	8.9	4.7	4.2	9.1
Ilyichevsk	12.9	8.7	8.1	7.9	8.2	8.9
Total main Black Sea Ports	61.0	35.3	33.1	30.4	30.7	38.7
% of Total	41%	24%	23%	20%	19%	24%
Total other Ports	59.0	20.0	18.4	20.2	17.7	20.8

**Graph 9.1.6: Ukrainian Ports-
Indexed Traffic Trends**



Graph 9.1.7: 1997 Total Sea Ports Traffic

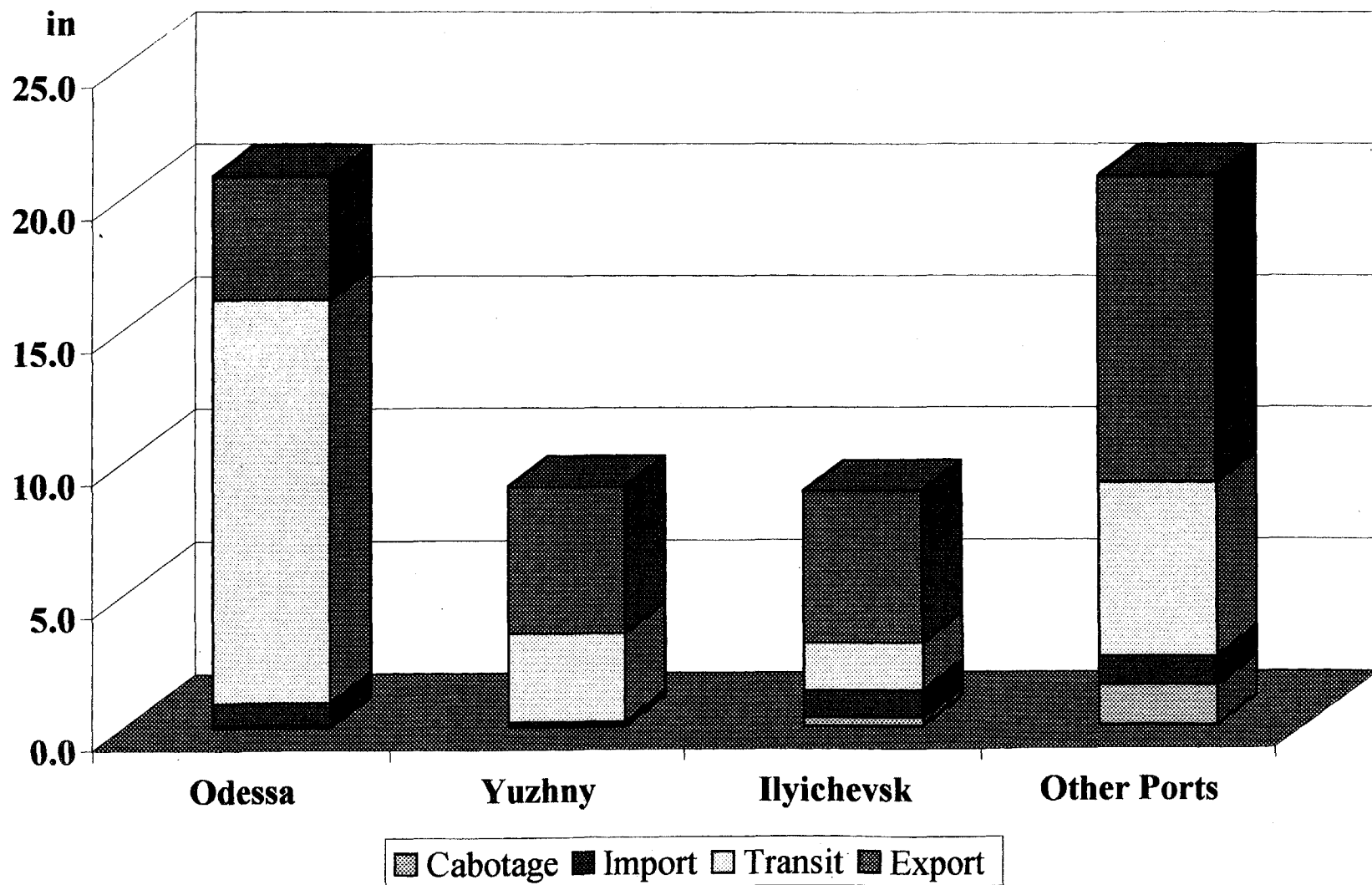


Table 9.1.8:
TRANSPORT SECTOR REVIEW
BLACK SEA PORTS
Financial Highlights

for the year ended December 31st
(in million Hrv's)

(in million US\$'s)

Source :	ODESSA		ILYICHEVSK	
	1997	1997	1997	1997
Operating revenues*	104.4	136.6	55.5	72.7
Working Expenses	42.8	62.4	22.8	33.2
Operating Result before depreciation	61.6	74.2	32.8	39.5
Net operating result	53.7	64.9	28.6	34.5
Net Profit (Loss) before Tax	94.2	68.2	50.1	36.3
Net Profit (Loss) after Tax	73.3	52.6	39.0	28.0
Traffic (million tons)	20.802	8.863	20.802	8.863
Working Ratio	41%	46%	41%	46%
Operating Ratio	49%	52%	49%	52%
Pricing Ratio (in MU/ton)*	5.02	15.41	2.67	8.20
Net Operating Cash Flow	45.8	56.6	24.4	30.1
Net Operating Cash Flow/Operating Revenue	44%	41%	44%	41%
Net Cash Flow	81.2	61.9	43.2	32.9
Net Cash Flow/Operating Revenues	78%	45%	78%	45%

*For Odessa, without cargo handling which represents about 13 Hrv/ton.

Table 9.1.8:
TRANSPORT SECTOR REVIEW
BLACK SEA PORTS

Income Statements and Cash Flow

for the year ended December 31st

(in million Hrv's)

(in million US\$'s)

Source :	ODESSA		ILYICHEVSK	
	1997	1997	1997	1997
Operating revenues	104.4	136.6	55.5	72.7
Materials	11.6	22.6	6.2	12.0
Labor	19.2	35.7	10.2	19.0
Other	12.0	4.1	6.4	2.2
Working expenses	42.8	62.4	22.8	33.2
Depreciation	7.9	9.3	4.2	4.9
Operating Expenses	50.7	71.7	27.0	38.1
Other Income	41.6	9.5	22.1	5.1
Other Expenses	1.1	6.2	0.6	3.3
Profit before Tax	94.2	68.2	50.1	36.3
Tax	20.9	15.6	11.1	8.3
Profit after tax	73.3	52.6	39.0	28.0
Net Operating Cash Flow	45.8	56.6	24.4	30.1
Net Cash Flow	81.2	61.9	43.2	32.9

Table 9.2.1

TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

Scenario 1 - Complete Reform

Traffic Statistics

'000 Tons for the years

	ACTUAL				PROJECTED				PROJECTED				PROJECTED				PROJECTED				PROJECTED				PROJECTED							
	1998				1999				2000				2001				2002				2003				2004				2005			
	Black Se	zov Se	Danub	Total	Black Se	Azov Se	Danub	Total	Black Se	zov Se	Danub	Total	Black Se	zov Se	Danub	Total	Black Se	zov Se	Danub	Total	Black Se	zov Se	Danub	Total	Black Se	Azov Se	Danub	Total				
LIQUID BULK																																
Export	0.9	0.3	0.3	1.4	1.0	0.3	0.3	1.5	1.0	0.3	0.3	1.5	1.1	0.3	0.3	1.6	1.1	0.3	0.3	1.7	1.2	0.3	0.3	1.7	1.2	0.3	0.3	1.8	1.2	0.3	0.3	1.8
Import	0.6	0.3	0.1	1.0	0.6	0.2	0.1	1.0	0.7	0.2	0.1	1.0	0.7	0.2	0.1	1.1	0.7	0.3	0.1	1.1	0.7	0.3	0.1	1.1	0.8	0.3	0.1	1.2	0.8	0.3	0.1	1.2
Transit	17.3	0.8	0.4	18.5	19.7	0.9	0.4	21.0	22.6	0.9	0.5	24.0	25.8	1.0	0.5	27.3	27.1	1.1	0.5	28.7	28.5	1.1	0.6	30.1	29.9	1.2	0.6	31.6	31.4	1.2	0.6	33.2
TOTAL (mln tons)	18.8	1.3	0.8	20.8	21.3	1.4	0.8	23.5	24.3	1.4	0.8	26.6	27.6	1.5	0.9	30.0	29.0	1.6	0.9	31.5	30.4	1.6	1.0	33.0	31.9	1.7	1.0	34.6	33.4	1.8	1.0	36.2
SOLID BULK																																
Export	14.4	3.8	3.0	21.2	15.4	3.8	3.0	22.2	16.5	3.8	3.1	23.4	17.7	3.9	3.1	24.6	18.2	4.0	3.2	25.4	18.8	4.1	3.3	26.1	19.3	4.2	3.4	26.9	19.9	4.3	3.5	27.7
Import	0.2	0.7	0.3	1.1	0.2	0.6	0.2	1.1	0.2	0.6	0.2	1.1	0.2	0.6	0.2	1.1	0.2	0.7	0.3	1.2	0.2	0.7	0.3	1.2	0.3	0.7	0.3	1.2	0.3	0.7	0.3	1.2
Transit	3.5	1.6	0.9	6.0	3.9	1.7	1.0	6.6	4.5	1.9	1.0	7.4	5.2	2.0	1.1	8.3	5.4	2.1	1.2	8.7	5.7	2.2	1.2	9.1	6.0	2.3	1.3	9.6	6.3	2.4	1.4	10.1
TOTAL (mln tons)	18.1	6.0	4.2	28.2	19.6	6.2	4.2	30.0	21.3	6.3	4.4	31.9	23.1	6.5	4.5	34.1	23.9	6.7	4.6	35.3	24.7	7.0	4.8	36.5	25.6	7.2	4.9	37.7	26.5	7.5	5.1	39.1
GENERAL CARGO																																
Export	2.7	1.0	1.8	5.5	2.9	1.0	1.8	5.7	3.1	1.0	1.8	5.9	3.3	1.0	1.8	6.1	3.4	1.1	1.9	6.3	3.5	1.1	1.9	6.5	3.6	1.1	2.0	6.7	3.7	1.2	2.0	6.9
Import	1.2	0.1	0.1	1.4	1.3	0.1	0.1	1.5	1.4	0.1	0.1	1.6	1.4	0.1	0.1	1.7	1.5	0.1	0.1	1.7	1.5	0.1	0.1	1.7	1.5	0.1	0.1	1.8	1.6	0.1	0.1	1.8
Transit	2.3	1.6	0.7	4.6	2.6	1.7	0.8	5.1	3.0	1.9	0.8	5.7	3.4	2.0	0.9	6.3	3.6	2.1	0.9	6.6	3.8	2.2	1.0	7.0	4.0	2.3	1.0	7.3	4.2	2.4	1.1	7.7
TOTAL (mln tons)	6.2	2.7	2.6	11.5	6.8	2.8	2.6	12.3	7.5	3.0	2.7	13.2	8.2	3.1	2.8	14.1	8.5	3.3	2.9	14.7	8.8	3.4	3.0	15.2	9.1	3.6	3.1	15.8	9.5	3.7	3.2	16.4
TOTAL FREIGHT																																
Export	18.0	5.0	5.0	28.0	19.3	5.0	5.0	29.4	20.7	5.1	5.1	30.8	22.1	5.1	5.1	32.4	22.8	5.3	5.3	33.4	23.5	5.5	5.5	34.4	24.2	5.6	5.6	35.4	24.9	5.8	5.8	36.5
Import	2.0	1.0	0.5	3.5	2.1	1.0	0.5	3.6	2.3	1.0	0.5	3.7	2.4	1.0	0.5	3.9	2.4	1.0	0.5	4.0	2.5	1.0	0.5	4.0	2.5	1.1	0.5	4.1	2.6	1.1	0.5	4.2
Transit	23.0	4.0	2.0	29.0	26.3	4.3	2.2	32.8	30.1	4.6	2.3	37.1	34.4	5.0	2.5	42.0	36.2	5.3	2.6	44.0	38.0	5.5	2.8	46.3	39.9	5.8	2.9	48.6	41.9	6.1	3.0	51.0
TOTAL (mln tons)	43.0	10.0	7.5	61	47.7	10.4	7.7	66	53.0	10.7	7.9	72	58.9	11.2	8.1	78	61.4	11.6	8.4	81	63.9	12.0	8.7	85	66.6	12.5	9.0	88	69.3	13.0	9.4	92

Table 9.2.2
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

Scenario 1: Complete Reform

Statistics

for the years ended december 31st

Source :	ACTUAL	PROJECTED				PROJECTED			
	ФАКТИЧНО	1998	1999	2000	2001	2002	2003	2004	2005
	1997								
Freight :									
Liquid Bulk		20.825	23.508	26.562	30.041	31.478	32.985	34.566	36.224
Solid Bulk		28.200	29.992	31.946	34.077	35.254	36.474	37.739	39.052
General cargo		11.475	12.277	13.158	14.129	14.663	15.219	15.797	16.400
SubTotal Dry		39.675	42.269	45.104	48.206	49.917	51.693	53.537	55.452
Total Freight (mln tons)	57.500	60.500	65.777	71.666	78.247	81.395	84.678	88.403	91.676
Passengers (mln)	5.000	5.000	5.100	5.202	5.306	5.465	5.629	5.798	5.972
Vessels:									
ADW	7,000	7,500	7,875	8,269	8,682	9,116	9,572	10,051	10,553
Passengers/vessel	1,500	1,500	1,575	1,654	1,736	1,823	1,914	2,010	2,111
Freight vessels		8,067	8,353	8,667	9,012	8,928	8,846	8,766	8,687
Passenger vessels		3,333	3,238	3,146	3,056	2,998	2,940	2,884	2,829
Total Vessels	11,000	11,400	11,591	11,813	12,068	11,926	11,787	11,650	11,516
Number Employees	30,000	30,000	22,500	16,575	12,450	12,023	11,422	10,851	10,309
Productivity/Employee		2,017	2,923	4,247	6,182	6,770	7,413	8,119	8,893
Turnover/Employee		9,286	12,580	17,029	23,104	25,676	28,540	31,728	35,279
Salary/Employee		150	175	198	220	246	282	324	377

Table 9.2.3
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

Scenario 1 - Concluding Reform

Pro-Forma Income Statements
for the years ended december 31st
(US\$ million)

Source : Reports	ACTUAL		PROJECTED							
	1997	1998	1999	2000	2001					
Revenue :										
Port Dues (Vessel)	0.0	17.5	15.6	14.4	13.2	13.3	13.4	13.5	13.6	
Port Dues (Goods)	0.0	90.0	93.7	97.0	100.6	106.8	113.3	120.2	127.6	
Cargo Handling	0.0	217.5	220.9	223.9	227.3	240.1	253.6	267.9	283.0	
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Operating Revenues	324.0	325.0	330.2	335.3	341.1	360.2	366.3	402.6	424.2	
Expense :										
Salaries & Wages	0.0	62.5	54.3	46.9	40.4	40.3	40.2	40.1	40.0	
Pension & Benefits	0.0	25.0	19.0	16.4	14.1	10.1	10.1	10.0	10.0	
SubTotal Salaries & Benefits	77.3	87.5	73.4	63.3	54.6	50.4	50.3	50.1	50.0	
Materials	48.3	67.5	74.5	83.6	94.1	102.7	112.2	122.6	133.9	
Other	21.1	22.5	23.8	26.7	30.1	32.8	35.9	39.2	42.8	
Working Expenses	146.7	177.5	171.7	179.9	178.7	186.0	198.4	211.9	226.8	
Operating Result	177.3	147.5	158.5	161.6	162.4	174.2	182.0	190.7	197.4	
Depreciation & Provisions	24.2	30.0	31.7	33.9	36.2	45.7	49.2	52.7	56.2	
Provision for bad debts	0.0	0.0	3.3	3.4	3.4	3.6	3.8	4.0	4.2	
Gross Operating Result	153.1	117.5	126.8	127.7	126.2	128.5	132.0	137.1	141.2	
Interest expenses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Extraordinary items (net)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Provision for Social Progra	0.0	0.0	36.2	31.2	26.9	6.4	6.4	6.3	6.3	
Net Income (Loss) before	153.1	117.5	127.7	128.8	136.3	128.1	135.6	137.8	144.9	
Taxes	46.2	35.3	26.2	27.9	28.8	35.6	36.8	38.0	39.2	
Net Income (Loss) after	106.9	82.2	101.5	100.9	107.5	92.5	98.8	99.8	105.7	
Operating Expenditures	171.0	208.0	207.0	211.0	218.0	235.0	251.0	269.0	287.0	

Table 9.2.4
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

Pro-Forma Sources & Uses of Funds
 per year, as of December 31
 (US\$ million)

Source : Reports	ACTUAL	ПРОЕКТЕ ЗА ПРОГНОЗОМ							
	ФАКТИЧНО	1998	1999	2000	2001				
	1997								
SOURCES OF FUNDS									
Net Income	107.7	82.3	61.1	65.2	67.2	83.0	85.8	88.7	91.5
Depreciation & Provisions	24.2	30.0	71.2	68.5	66.5	55.6	59.3	63.0	66.7
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Funds from Operations	132	112	132	134	134	139	145	152	158
Borrowings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Equity Capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in working capital	0.0	0.0	(4.8)	(3.5)	(4.0)	19.3	(4.4)	(4.7)	(5.0)
Financing	0	0	(5)	(3)	(4)	19	(4)	(5)	(5)
Total Sources	132	112	128	130	130	158	141	147	153
USES OF FUNDS									
Repayment of LT Debt									
Net Plant & Equipment	0.0	100.0	75.0	75.0	75.0	100.0	100.0	100.0	100.0
Change in Working Capital n	0.0	0.0	13.8	(4.0)	(4.6)	7.5	(3.1)	(3.4)	(3.7)
Bad debts	0.0	0.0	3.3	3.4	3.4	3.6	3.8	4.0	4.2
Staff rightsizing program	0.0	0.0	36.2	31.2	26.9	6.4	6.4	6.3	6.3
Total Uses	0	100	128	106	101	117	107	107	107
Total Sources & Uses	132	12	(1)	25	29	40	34	40	46
Financing capacity	131.9	112.3	74.2	99.6	103.9	140.4	133.8	140.1	146.4

Table 9.2.5
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

УСЛОВИЯ ПРОГНОЗ

Pro-Forma Balance Sheets

per year, as of December 31

(US\$ million)

ПРОЕКТЕ ЗА ПРОГНОЗОМ

Source : Reports	ACTUAL ФАКТИЧНО 1997	1998	1999	2000	2001				
ASSETS									
Cash	8	21	20	45	74	114	148	188	235
Accounts Receivables	55	55	55	56	57	45	48	50	53
Inventories	17	17	22	24	27	20	22	24	26
Current assets	79	93	97	125	158	179	217	262	314
Fixed assets	818	980	1,055	1,130	1,205	1,305	1,405	1,505	1,605
Accumulated depreciation	346	376	408	442	478	523	573	625	681
Net Fixed assets	472	604	648	689	727	782	833	880	924
Work in Progress	62								
Other assets	1								
Total Assets	613	697	745	814	866	961	1,050	1,142	1,237
LIABILITIES									
Current Liabilities	47	47	33	37	41	34	37	40	44
Long Term Debt									
Provisions									
Paid in Capital									
Authorized Capital	454	454	454	454	454	454	454	454	454
Reserves	115	115	115	115	115	115	115	115	115
Retained Earning (Loss)	0	0	82	143	209	276	359	445	533
Current income	0	82	61	65	67	83	86	89	92
Total Equity	568	651	712	777	844	927	1,013	1,102	1,193
Total Liabilities	613	697	745	814	866	961	1,050	1,142	1,237

Table 9.26
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

Source : Reports	ACTUAL	ProForma Ratio Analysis				PROJECTE 3A ΠΡΟΓΗΘ3ΟΜ			
	ΦΑΚΤΗΧΗΟ	1998	1999	2000	2001				
Efficiency:									
Revenue turnover	68.8%	53.8%	51.0%	48.7%	46.9%	46.1%	45.7%	45.6%	45.9%
Receivables turnover *	61	61	60	60	60	45	45	45	45
Inventory turnover *	19	19	24	26	29	20	21	21	22
Payables turnover	52	52	36	40	44	34	35	36	37
Number Employees	30,000	30,000	22,500	16,875	12,656	12,023	11,422	10,851	10,309
Traffic Units/Employee	0	2,017	2,923	4,247	6,182	6,770	7,413	8,119	8,893
Pricing :									
Net ton (million) @ US\$per ton	5.6	5.4	5.0	4.7	4.4	4.4	4.5	4.6	4.6
Profitability :									
Working Ratio	45%	55%	52%	52%	52%	52%	52%	53%	53%
Operating Ratio	53%	64%	63%	63%	64%	65%	66%	67%	68%
Return on Fixed Assets	22.8%	13.6%	15.5%	14.5%	13.4%	11.9%	11.5%	11.3%	11.1%
Liquidity :									
Working Capital ****	25	25	44	43	43	31	32	33	35
Current Ratio	1.71	2.00	2.96	3.40	3.82	5.29	5.87	6.48	7.10
Quick Ratio	1.54	1.54	2.34	2.18	2.03	1.91	1.87	1.83	1.79

Graph 9.2.7: Main Financial Indicators

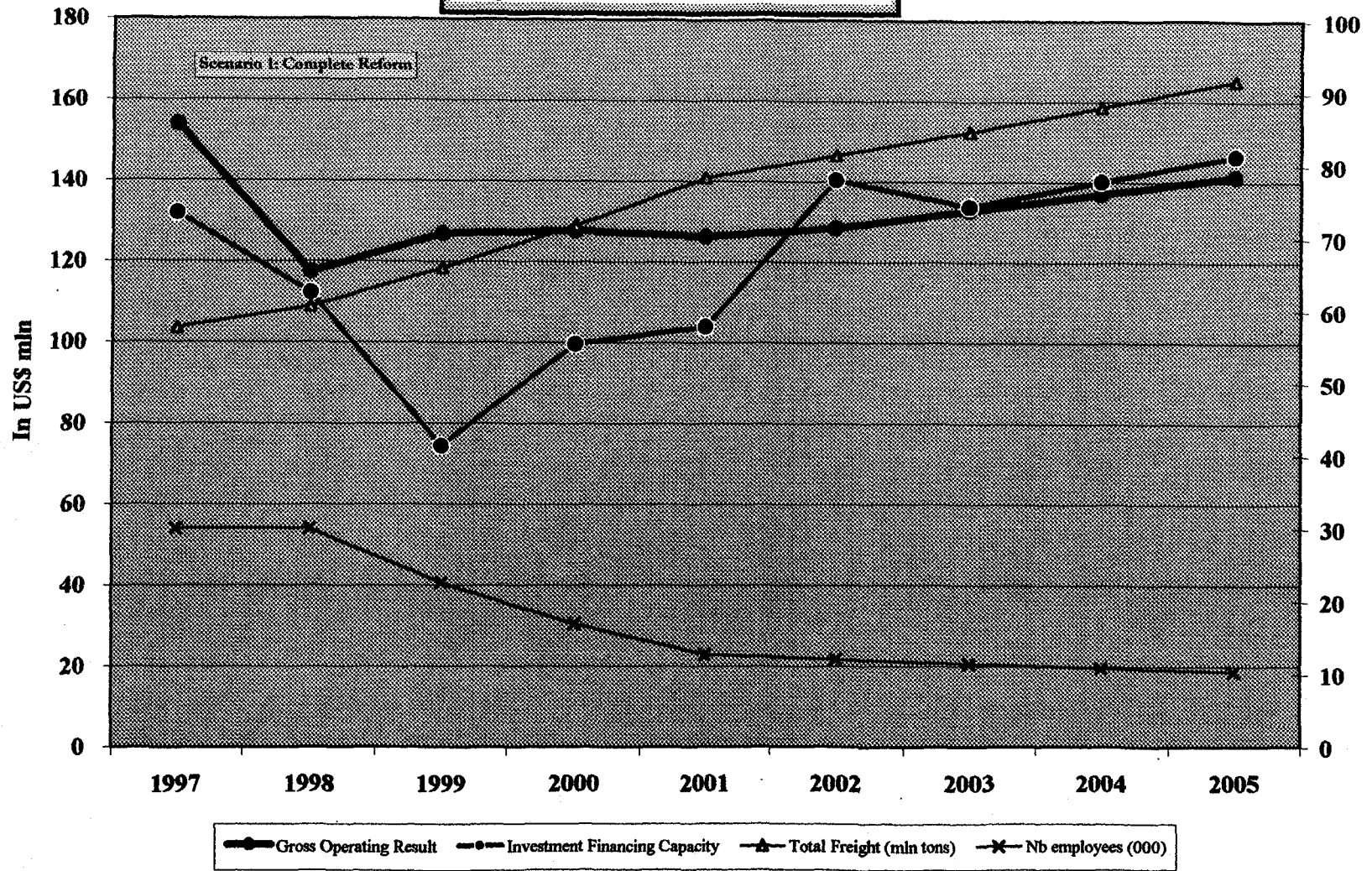


Table 9.2.1

TRANSPORT SECTOR REVIEW

UKRAINIAN SEA PORTS

Source: Ukrainian Maritime Administration

Traffic Statistics

'000 Tons for the years

	ACTUAL				PROJECTED				PROJECTED				PROJECTED				PROJECTED				PROJECTED				PROJECTED							
	1998				1999				2000				2001				2002				2003				2004				2005			
	Black Se	zov Se	Danub	Total	Black Se	Azov Se	Danub	Total	Black Se	zov Se	Danub	Total	Black Se	zov Se	Danub	Total	Black Se	zov Se	Danub	Total	Black Se	zov Se	Danub	Total	Black Se	Azov Se	Danub	Total				
LIQUID BULK																																
Export	0.9	0.3	0.3	1.4	0.9	0.3	0.3	1.4	0.9	0.3	0.3	1.4	0.9	0.3	0.3	1.4	0.9	0.3	0.3	1.5	0.9	0.3	0.3	1.5	1.0	0.3	0.3	1.5	1.0	0.3	0.3	1.5
Import	0.6	0.3	0.1	1.0	0.6	0.3	0.1	1.0	0.6	0.3	0.1	1.0	0.6	0.3	0.1	1.0	0.6	0.3	0.1	1.1	0.7	0.3	0.1	1.1	0.7	0.3	0.1	1.1	0.7	0.3	0.1	1.1
Transit	17.3	0.8	0.4	18.5	18.1	0.8	0.4	19.4	19.0	0.9	0.4	20.3	20.0	0.9	0.5	21.4	20.4	0.9	0.5	21.8	20.8	1.0	0.5	22.2	21.2	1.0	0.5	22.7	21.6	1.0	0.5	23.1
TOTAL (mln tons)	18.8	1.3	0.8	20.8	19.6	1.3	0.8	21.8	20.6	1.4	0.8	22.8	21.5	1.4	0.9	23.8	22.0	1.5	0.9	24.3	22.4	1.5	0.9	24.8	22.8	1.5	0.9	25.2	23.3	1.6	0.9	25.7
SOLID BULK																																
Export	14.4	3.8	3.0	21.2	14.5	3.8	3.0	21.4	14.7	3.8	3.1	21.6	14.8	3.9	3.1	21.8	15.0	3.9	3.1	22.0	15.1	3.9	3.2	22.2	15.3	4.0	3.2	22.5	15.4	4.0	3.2	22.7
Import	0.2	0.7	0.3	1.1	0.2	0.7	0.3	1.1	0.2	0.7	0.3	1.1	0.2	0.7	0.3	1.2	0.2	0.7	0.3	1.2	0.2	0.7	0.3	1.2	0.2	0.7	0.3	1.2	0.2	0.7	0.3	1.3
Transit	3.5	1.6	0.9	6.0	3.6	1.7	0.9	6.2	3.8	1.8	1.0	6.6	4.0	1.9	1.0	6.9	4.1	1.9	1.1	7.0	4.2	1.9	1.1	7.2	4.2	2.0	1.1	7.3	4.3	2.0	1.1	7.5
TOTAL (mln tons)	18.1	6.0	4.2	28.2	18.4	6.1	4.2	28.7	18.7	6.3	4.3	29.3	19.0	6.4	4.4	29.8	19.3	6.5	4.5	30.2	19.5	6.6	4.5	30.6	19.7	6.7	4.6	31.0	20.0	6.8	4.6	31.4
GENERAL CARGO																																
Export	2.7	1.0	1.8	5.5	2.7	1.0	1.8	5.5	2.8	1.0	1.8	5.6	2.8	1.0	1.8	5.6	2.8	1.0	1.8	5.7	2.8	1.1	1.8	5.7	2.9	1.1	1.9	5.8	2.9	1.1	1.9	5.8
Import	1.2	0.1	0.1	1.4	1.2	0.1	0.1	1.5	1.2	0.1	0.1	1.5	1.3	0.1	0.1	1.5	1.3	0.1	0.1	1.5	1.3	0.1	0.1	1.6	1.4	0.1	0.1	1.6	1.4	0.1	0.1	1.6
Transit	2.3	1.6	0.7	4.6	2.4	1.7	0.7	4.8	2.5	1.8	0.8	5.1	2.7	1.9	0.8	5.3	2.7	1.9	0.8	5.4	2.8	1.9	0.8	5.5	2.8	2.0	0.9	5.7	2.9	2.0	0.9	5.8
TOTAL (mln tons)	6.2	2.7	2.6	11.5	6.4	2.8	2.6	11.8	6.5	2.9	2.7	12.1	6.7	3.0	2.7	12.5	6.8	3.0	2.8	12.6	6.9	3.1	2.8	12.8	7.0	3.1	2.9	13.0	7.2	3.2	2.9	13.2
TOTAL FREIGHT																																
Export	18.0	5.0	5.0	28.0	18.2	5.1	5.1	28.3	18.4	5.1	5.1	28.6	18.5	5.2	5.2	28.8	18.7	5.2	5.2	29.1	18.9	5.3	5.3	29.4	19.1	5.3	5.3	29.7	19.3	5.4	5.4	30.0
Import	2.0	1.0	0.5	3.5	2.0	1.0	0.5	3.6	2.1	1.0	0.5	3.6	2.1	1.1	0.5	3.7	2.2	1.1	0.5	3.8	2.2	1.1	0.6	3.9	2.3	1.1	0.6	3.9	2.3	1.1	0.6	4.0
Transit	23.0	4.0	2.0	29.0	24.2	4.2	2.1	30.5	25.4	4.4	2.2	32.0	26.6	4.6	2.3	33.6	27.2	4.7	2.4	34.2	27.7	4.8	2.4	34.9	28.3	4.9	2.5	35.6	28.8	5.0	2.5	36.3
TOTAL (mln tons)	43.0	10.0	7.5	61	44.4	10.3	7.7	62	45.8	10.6	7.8	64	47.3	10.8	8.0	66	48.1	11.0	8.1	67	48.8	11.2	8.2	68	49.6	11.3	8.3	69	50.4	11.5	8.4	70

Table 9.2.2
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

Statistics

for the years ended december 31st

Source :	ACTUAL	PROJECTED							
	ФАКТИЧНО	1998	1999	2000	2001				
	1997								
Freight :									
Liquid Bulk		20.825	21.781	22.784	23.835	24.298	24.769	25.250	25.740
Solid Bulk		28.200	28.731	29.279	29.846	30.225	30.609	30.999	31.395
General cargo		11.475	11.788	12.114	12.452	12.645	12.842	13.041	13.244
SubTotal Dry		39.675	40.519	41.393	42.299	42.870	43.451	44.040	44.639
Total Freight (mln tons)	57.500	60.500	62.300	64.177	66.134	67.168	68.220	69.290	70.379
Passengers (mln)	5.000	5.000	5.100	5.202	5.306	5.468	5.629	5.790	5.972
Vessels:									
ADW	7,000	7,500	7,875	8,269	8,682	9,116	9,572	10,051	10,553
Passengers/vessel	1,500	1,500	1,575	1,654	1,736	1,823	1,914	2,010	2,111
Freight vessels		8,067	7,911	7,761	7,617	7,368	7,127	6,894	6,669
Passenger vessels		3,333	3,238	3,146	3,056	2,998	2,940	2,884	2,829
Total Vessels	11,000	11,400	11,197	10,907	10,673	10,366	10,067	9,778	9,498
Number Employees	30,000	30,000	29,700	29,401	29,100	28,810	28,530	28,244	27,962
Productivity/Employee		2,017	2,098	2,183	2,272	2,331	2,391	2,453	2,517
Turnover/Employee		9,286	9,515	9,722	9,939	10,364	10,810	11,275	11,762
Salary/Employee		150	173	198	226	249	282	314	377

Table 9.23
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

SCENARIO 1 - STABLE GDP

Pro-Forma Income Statements
for the years ended december 31st
(US\$ million)

Source : Reports	ACTUAL	PROJECTED				PROJECTED			
	1997	1998	1999	2000	2001	1998	1999	2000	2001
Revenue :									
Port Dues (Vessel)	0.0	17.5	16.6	16.0	15.5	15.4	15.2	15.1	15.0
Port Dues (Goods)	0.0	90.0	92.5	94.3	96.3	99.7	103.3	107.0	110.9
Cargo Handling	0.0	217.5	220.6	223.1	225.7	233.4	241.3	249.4	257.9
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating Revenues	324.6	325	330	334	338	348	360	372	384
Expense :									
Salaries & Wages	0.0	62.5	71.7	81.7	93.0	96.6	100.5	104.4	108.6
Pension & Benefits	0.0	25.0	28.7	32.7	37.2	38.7	40.2	41.8	43.4
SubTotal Salaries & Benefits	77.3	87.5	100.4	114.3	130.2	135.3	140.6	146.2	152.0
Materials	48.3	67.5	69.2	72.0	75.0	77.6	80.4	83.3	86.3
Other	21.1	22.5	22.1	23.0	24.0	24.8	25.7	26.6	27.6
Working Expenses	146.7	177.5	191.6	209.4	229.1	239.8	246.8	254.2	263.9
Operating Result	178.1	147.5	137.9	124.2	109.4	108.7	115.0	115.4	117.8
Depreciation & Provisions	24.2	30.0	31.7	33.9	36.2	45.7	49.2	52.7	56.2
Provision for bad debts	0.0	0.0	9.9	10.0	10.1	10.5	10.8	11.1	11.5
Gross Operating Result	153.9	117.5	106.3	90.3	72.9	65.9	63.8	62.7	61.4
Interest expenses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Extraordinary items (net)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provision for Social Progra	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Income (Loss) before	154	118	106	90	72	65	64	63	62
Taxes	46.2	35.3	28.9	24.1	18.7	16.4	15.9	15.5	15.0
Net Income (Loss) after	108	82	77	66	54	49	48	47	47
Operating Expenditures	171	208	233	253	275	294	307	320	334

Table 9.2.4
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

Summary of Sources & Uses
Pro-Forma Sources & Uses of Funds
 per year, as of December 31
 (US\$ million)

Source : Reports	ACTUAL	PROJEKTE ZA PROGNOZOM								
	ФАКТИЧНО	1998	1999	2000	2001					
	1997									
SOURCES OF FUNDS										
Net Income	107.7	82.3	67.5	56.2	43.5	38.2	37.1	36.1	35.1	
Depreciation & Provisions	24.2	30.0	41.5	43.9	46.3	56.1	60.0	63.8	67.7	
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Funds from Operations	132	112	109	100	90	94	97	100	103	
Borrowings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Equity Capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Change in working capital	0.0	0.0	(3.2)	(1.4)	(1.5)	19.4	(2.0)	(2.0)	(2.1)	
Financing	0	0	(3)	(1)	(2)	19	(2)	(2)	(2)	
Total Sources	132	112	106	99	88	114	95	98	101	
USES OF FUNDS										
Repayment of LT Debt										
Net Plant & Equipment	0.0	100.0	75.0	75.0	75.0	100.0	100.0	100.0	100.0	
Change in Working Capital n	0.0	0.0	16.2	(1.2)	(1.3)	7.4	(0.9)	(1.0)	(1.0)	
Bad debts	0.0	0.0	9.9	10.0	10.1	10.5	10.8	11.1	11.5	
Staff rightsizing program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Uses	0	100	101	84	84	118	110	110	111	
Total Sources & Uses	132	12	5	15	4	(4)	(15)	(12)	(10)	
Financing capacity	131.9	112.3	79.8	89.9	79.4	95.9	85.3	87.7	90.1	

Table 9.25
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

Прогнози за 1999-2001
Pro-Forma Balance Sheets
 per year, as of December 31

(US\$ million)

ПРОЕКТЕ ЗА ПРОГНОЗОМ

Source : Reports	ACTUAL ФАКТИЧНО		PROJEKTE ZA PROGNOZOM								
	1997	1998	1999	2000	2001						
ASSETS											
Cash	8	21	26	41	45	41	27	14	4		
Accounts Receivables	55	55	55	56	56	44	45	46	48		
Inventories	17	17	20	21	22	15	16	16	17		
Current assets	79	93	101	117	123	100	87	77	69		
Fixed assets	818	980	1,055	1,130	1,205	1,305	1,405	1,505	1,605		
Accumulated depreciation	346	376	408	442	478	523	573	625	681		
Net Fixed assets	472	604	648	689	727	782	833	880	924		
Work in Progress	62										
Other assets	1										
Total Assets	613	697	749	806	851	892	943	997	1051		
LIABILITIES											
Current Liabilities	47	47	30	32	33	26	27	27	28		
Long Term Debt											
Provisions											
Paid in Capital											
Authorized Capital	454	454	454	454	454	454	454	454	454		
Reserves	115	115	115	115	115	115	115	115	115		
Retained Earning (Loss)	0	0	82	150	206	249	288	325	361		
Current income	0	82	67	56	44	38	37	36	35		
Total Equity	568	651	718	774	818	856	893	929	964		
Total Liabilities	613	697	749	806	851	892	943	997	1051		

Table 9.2.6
TRANSPORT SECTOR REVIEW
UKRAINIAN SEA PORTS

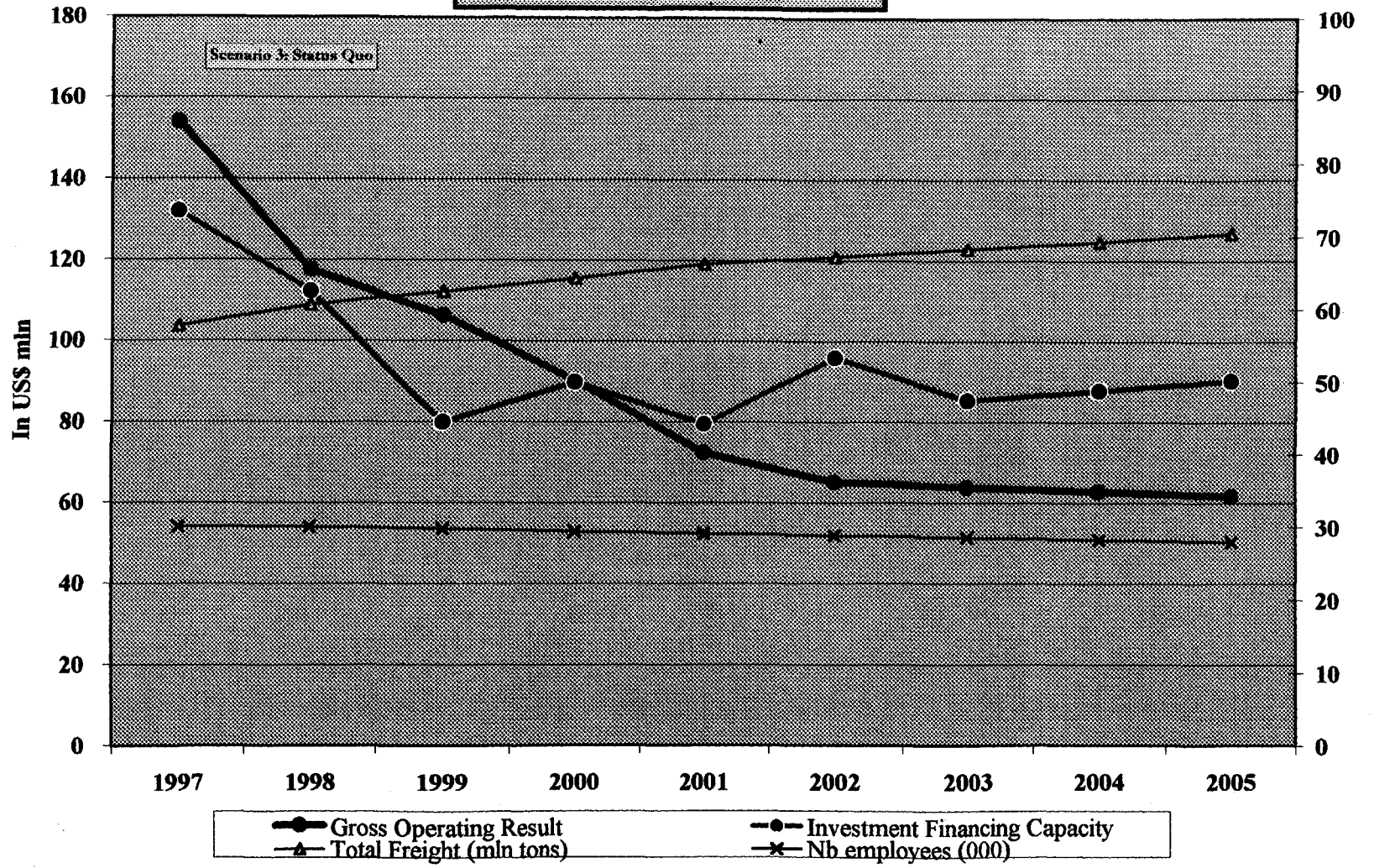
SPENDING STANDARDS

ProForma Ratio Analysis

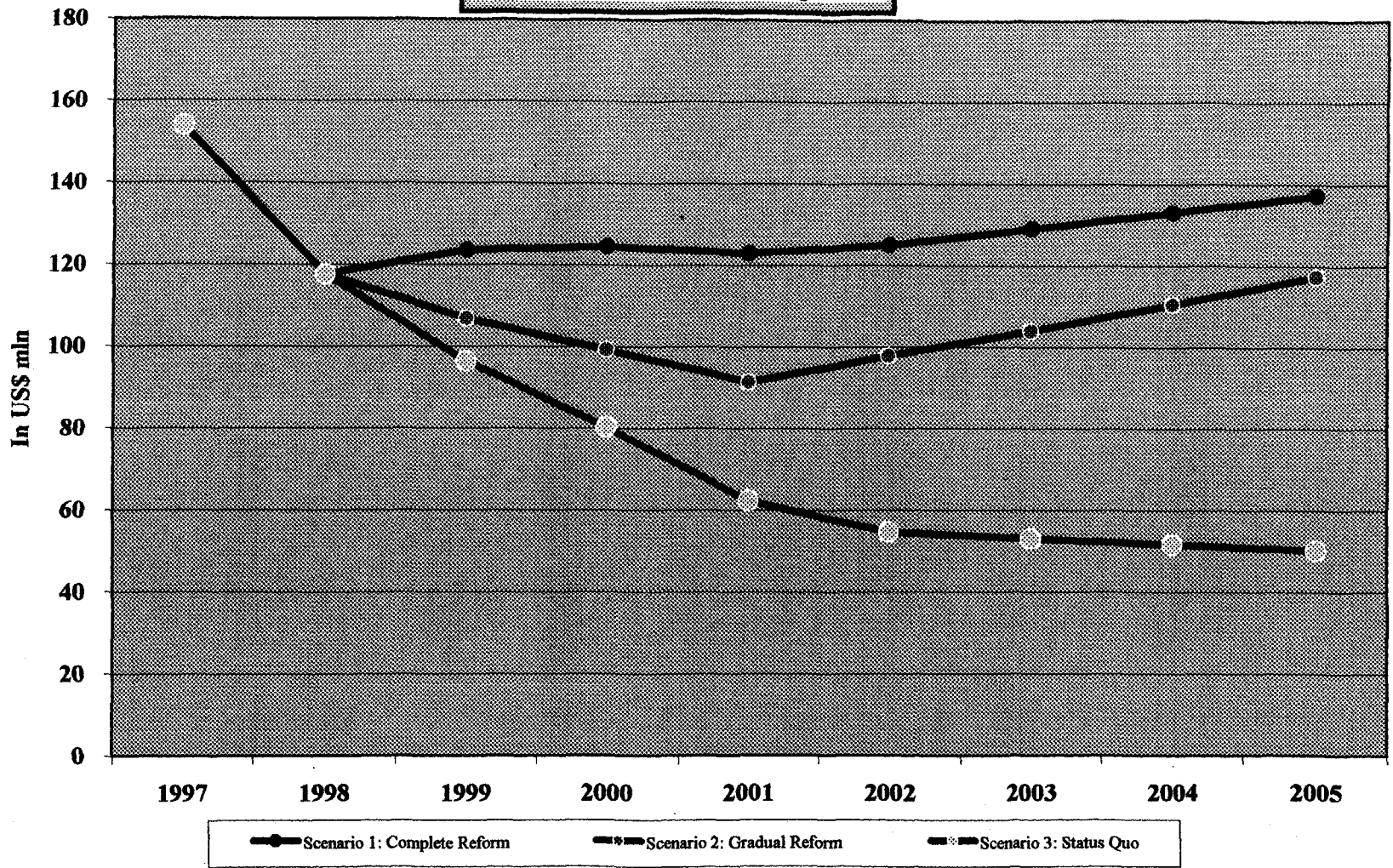
ПРОЕКТЕ ЗА ПРОГНОЗОМ

Source : Reports	ACTUAL	PROFORMA RATIO ANALYSIS				PROFORMA RATIO ANALYSIS			
	ФАКТИЧНО	1998	1999	2000	2001	2002	2003	2004	2005
Efficiency:									
Revenue turnover	68.8%	53.8%	50.9%	48.4%	46.4%	44.6%	43.2%	42.2%	41.5%
Receivables turnover *	61	61	60	60	60	45	45	45	45
Inventory turnover *	19	19	22	23	23	16	16	16	16
Payables turnover	52	52	33	34	35	26	27	27	27
Number Employees	30,000	30,000	29,700	29,403	29,109	28,818	28,530	28,244	27,962
Traffic Units/Employee	0	2,017	2,098	2,183	2,272	2,331	2,391	2,453	2,517
Pricing :									
Net ton (million)									
@ US\$ per ton	5.6	5.4	5.3	5.2	5.1	5.2	5.3	5.4	5.5
Profitability :									
Working Ratio	45%	55%	58%	63%	68%	68%	69%	69%	69%
Operating Ratio	53%	64%	71%	76%	82%	84%	85%	86%	87%
Return on Fixed Assets	22.8%	13.6%	11.9%	9.6%	7.4%	6.2%	5.8%	5.4%	5.0%
Liquidity :									
Working Capital ****	25	25	45	45	45	33	34	35	36
Current Ratio	1.71	2.00	3.32	3.70	3.74	3.90	3.28	2.79	2.42
Quick Ratio	1.54	1.54	2.46	2.41	2.37	2.29	2.28	2.28	2.27

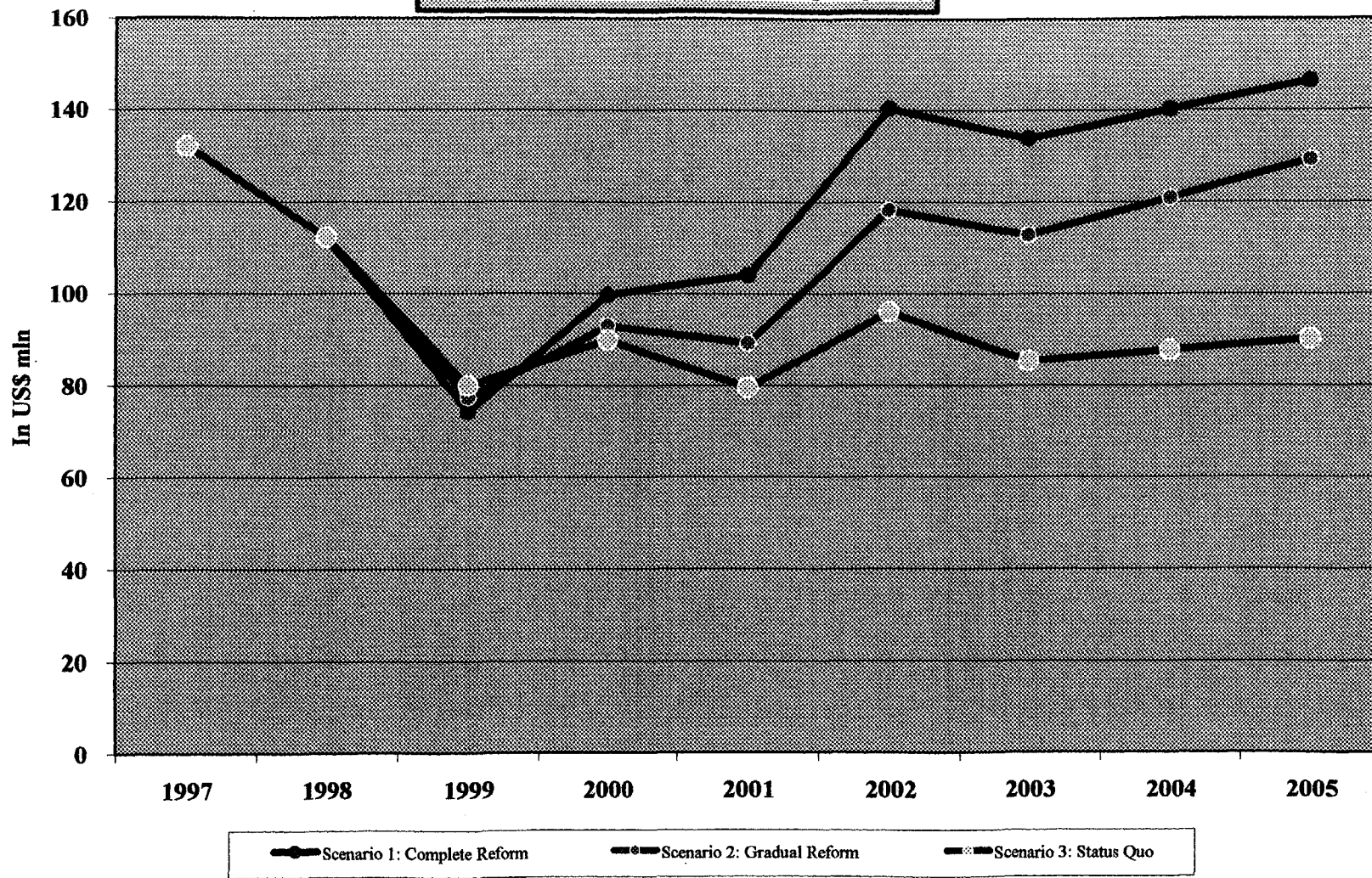
Graph 9.2.7: Main Financial Indicators



Graph 9.2.8: Gross Operating Result



Graph 9.2.9: Investment Financing Capacity



Annex 10.1. Air Ukraine

1. **Air Ukraine Financial Status.** Air Ukraine's accounts showed apparent profits up \$6M for a revenue of \$100M in 1995. Air Ukraine financial performance is difficult to estimate since it includes several regional airlines, which include themselves their airport base, and most aircraft are already fully depreciated. Moreover, the inappropriate taxation artificially increase profits. Such taxation rules will prevent airlines from making sufficient fleet renewal provisions which, on the long term, will endanger, the Ukrainian sector (public and private). Air Ukraine's 1996 and 1997 accounts show aggravated deficits. Revenue decline far exceeded cost reductions. Low level of revenue can be mainly explained by the relatively low level of tariffs, although the airline has already applied several important increases since 1990. The rate of UScent6,0/RPK (Revenue Passenger/ Kilometer) is still almost 25% below world average. It is understandable that, due to the low average purchasing power of the Ukrainian (and other CIS) passengers (Table 10.2), the airline may wish to keep some reduced fares for the lower end of its market, but it should also be able to charge higher fares to those customers (mainly business men) whose purchasing power is often comparable to those in western countries.

2. **Air Ukraine Future.** Unlike its successful sister company, Air Ukraine faces considerable challenges. It remains fully government-owned and operates on low profitability routes (CIS and long-haul). Its current fragmentation plans go against international trend towards concentration. Moreover, its management seems not ready to compete actively in its new target market (Western Europe). Technical assistance that would ensure the development of a sound business plan and institutional building is required to prevent Air Ukraine from becoming a burden for the national budget. In order to remain on the international scene, Air Ukraine's priority is to acquire sufficient financing capacity to purchase or lease new generation aircraft. Its monopoly on its long haul market may evolve with the growth of this market. Possibility of foreign new entrants is not excluded. Besides, although there is no direct competitor today on these routes, Air Ukraine is facing a fierce competition from Western Europe carriers which propose long haul routes through their respective hubs (Amsterdam, Frankfurt, London, Paris, Vienna...). Air Ukraine has already tried to acquire one 767s (260 seats) under a lease agreement, but this attempt remained apparently unsuccessful because of the lack of financing guarantees. Such an aircraft is needed, if the airline is intending to compete on the high yield contribution with a large business class, while offering increased capacity for belly cargo.

3. **Air Ukraine Investment Needs.** Air Ukraine must dispose of its unproductive assets (Table10.1). A fleet of 40 aircraft should be sufficient to serve its current network, including the re-opening of some former routes if needed. Acquisition of new generation 150 to 200-seater, and maybe one long-range aircraft in replacement of the Il62M is necessary by the beginning of next century. New generation aircraft could be availability of second-hand/Chapter 3 aircraft, with a significantly lower acquisition or leasing price. The selection of aircraft type should be also based on the cargo capabilities in the light of the cargo market needs so specific to the international trade nature of Ukraine economy. Technical assistance in the commercial field, the development of management information system, including cost accounting, would also be needed. This would represent an investment of about US\$300 million by the end of next decade, not including acquisition of a long-range aircraft, an estimate which would have to be sharpened in the light of

the elaboration of the business plan. Without a deep structural adjustment, such an investment program is out of reach.

**Table 10.1. : Ukrainian Main Airlines
Fleets**

Type of aircraft	Number		Capacity Seats (min/max)	Average age
	in fleet	ordered		
Air Ukraine				
Antonov An-12	3		freighter	33,5
Antonov An-140	(1)	40	40/52	
Antonov An 24	54		48	29,5
Antonov An-26	9		freighter	20,7
Antonov An-30	3		freighter	22,7
Antonov An-32	5		freighter	7,8
Ilyushin Il-62M	8		144	16,4
Ilyushin Il-76M	6		freighter	12,5
L-410 Turbolet	20		15	16,0
Tupolev Tu-134A/A	15		76	20,7
Tupolev Tu-154B	26		164	18,3
Tupolev Tu-154M	3		164	7,0
Yakovlev Yak-40/40k	15		27/36	23,9
Yakovlev Yak-42	21		120	17,8
Dornier 328		3	30/33	
Falcon 20/200	1		exec (10/16)	n.a.
Boeing 767	(2)		254/290	
S/Total :	189	43	Average age:	21,4
Ukraine International Airlines				
B737-200 Adv.	(3)	3	108	13,7
B737-300	(4)	2	135	n.a.
B737-700		1	128/149	
S/Total:	5	2	Average age:	13,7
Aerosweet				
Antonov An-24		1	48	32,0
B737-200 Adv.	(3)	2	120	18,0
S/Total:	3	2	Average age:	22,7
Total	197		Average age	21,3

Source : JP Airline Fleet, Airclaims, IATA Databank, World Bank mission

- (1) New Antonov Product expected off production line by 1998/99 to replace An 24s
- (2) Being contemplated in view of network extension to long-haul flights (Chicago, New-York, Toronto...)
- (3) 737-200s acquired in 1994, 1995, 1997, will be forbidden to operate to Europe as from 2002
- (4) Leased since Feb1998

Table 10.2. - Air Ukraine Fares for Services to/from Kiev (Summer 1998)

Country/City	Weekly flights	Aircraft type	Fares		Distance (km)	Fares (US Cent/km)	
			IATA (US\$)	CIS citizens (US\$) (1)		IATA	CIS citizens (1)
Domestic							
Donietsk	18	An-24	<i>n.d.</i>	80	557	<i>n.d.</i>	14,4
Lvov	11	An-24	<i>n.d.</i>	65	501	<i>n.d.</i>	13,0
Luganzk	9	An-24	<i>n.d.</i>	68	671	<i>n.d.</i>	10,1
Mariupol	3	An-24	<i>n.d.</i>	78	636	<i>n.d.</i>	12,3
Simferopol	3	An-24	<i>n.d.</i>	60	641	<i>n.d.</i>	9,4
Uzhgorod	10	An-24	<i>n.d.</i>	64	623	<i>n.d.</i>	10,2
CIS countries							
Baku	1	TU-154	<i>n.d.</i>	150	1 844	<i>n.d.</i>	8,1
Batumi	1	TU-134	<i>n.d.</i>	145	1 249	<i>n.d.</i>	11,6
Erevan	1	TU-134	<i>n.d.</i>	150	1 546	<i>n.d.</i>	9,7
Kazan	1	TU-134	<i>n.d.</i>	160	1 347	<i>n.d.</i>	11,9
Kutaicy	1	TU-134	<i>n.d.</i>	135	1 301	<i>n.d.</i>	10,4
Moscow	14	TU-134	391	107	721	54,2	14,8
Murmansk	2	TU-134	<i>n.d.</i>	112	2 077	<i>n.d.</i>	5,4
Nizhnevartovsk	1	TU-134	<i>n.d.</i>	260	3 035	<i>n.d.</i>	8,6
Surgut	1	TU-134	<i>n.d.</i>	300	2 868	<i>n.d.</i>	10,5
Tashkent	1	TU-154	<i>n.d.</i>	189	3 110	<i>n.d.</i>	6,1
Tbilisi	1	TU-134	<i>n.d.</i>	160	1 431	<i>n.d.</i>	11,2
Tumen	1	TU-134	<i>n.d.</i>	149	2 371	<i>n.d.</i>	6,3
Ufa	1	TU-134	<i>n.d.</i>	150	1 000	<i>n.d.</i>	15,0
Central and Western Europe							
Bratislava	3	An-24	<i>n.d.</i>	190	1 023	<i>n.d.</i>	18,6
Bucharest	2	An-24	308	164	745	41,3	22,0
Budapest	3	TU-134	357	216	913	39,1	23,7
Istambul	3	TU-154	790	300	1 057	74,7	28,4
Praha	3	TU-134	447	274	1 172	38,1	23,4
Sofia	2	TU-134	375	245	1 027	36,5	23,9
Warsaw	2	TU-134	292	206	721	40,5	28,6
Others							
Beijing	3	TU-154	2 401	749	6 440	37,3	11,6
Beyrouth	1	TU-154	<i>n.d.</i>	405	1 886	<i>n.d.</i>	21,5
Cairo	1	TU-134	1 195	320	2 260	52,9	14,2
Sharja	1	TU-154	1 301	450	3 485	37,3	12,9
Damascus	1	TU-134	1 226	368	1 927	63,6	19,1
Delhi	1	Il-62	1 379	660	4 552	30,3	14,5
Dubai	1	TU-154	1 301	450	3 511	37,1	12,8
New-York	3	Il-62	<i>n.d.</i>	480	7 544	<i>n.d.</i>	6,4
Toronto	1	Il-62	1 914	721	7 552	25,3	9,5
Tunis	1	TU-134	1 063	400	2 231	47,6	17,9
Total flights (perweek) : 99			Average flight length :		1 554		

Annex 10.2. Condition of Main Airports

1. **Infrastructure.** During its mission in 1996, the TACIS/TTC performed a visit to 18 airports, which covers all airports suggested to remain open to commercial traffic, and some ten more to be classified as «C category». Apart from the completion of the new runway at Borispol, the situation has virtually not changed since then. The major diagnosis was two fold:

- i) there is no need for new infrastructure, the current one representing excess capacity;
- ii) but, at most airports, «A critical situation exists with regard to airport pavements (runways, taxiways, and apron)».

2. Runways lengths are generally far sufficient to serve most aircraft since they were built for former soviet aircraft which need more take-off length than their western counterparts. Yet, because these aircraft were equipped with more boogies, they did not need as much resistant pavement as needed by more modern aircraft. This is the major constraint today, if Ukraine wishes to open its regional airports to international traffic. These remarks remain valid for most airports in Ukraine. The following part focuses on major issues relevant to major airports. For all other fields, reference can be made directly to the TACIS/TTC study.

3. **Borispol.** No major capital investment is required for the coming decade. Its terminal was recently refurbished for a relatively low cost (US\$15million) extending its capacity to 2.5 million passenger per year, a level of traffic which should not be reached before 2010. Its new runway is under completion, and it should be open to traffic by the coming autumn, although the airport is still searching financing for the building or corresponding taxiways and aprons. Borispol development is guided by a sound master plan (the only one in the country).

4. **Simferopol.** No specific need was identified. Refurbishment is completed, and the airport, which has been separated from its airline, has been able to finance these minor investments on its own resources.

5. **Odessa.** This airport represents a major issue. Its pavement requires urgent rehabilitation but works have been postponed because a former Soviet law which remains valid until supplemented by a new Ukrainian law, still plans its relocation. Indeed, this airport is very close to the city, and the levels of traffic of more than 3 million passengers in FSU times could justify its relocation. Today, the significant drop of its activity (below 300,000 passengers) along with the expected gradual replacement of older noisy and polluting aircraft by new generation ones does not justify such a costly investment anymore. Subsequently, the adoption of a law, even prior to the achievement of a Airport Development Strategy is needed to define long term objectives, and, in particular, to proceed with the launching of a runway rehabilitation program.

6. Its terminal building, which was designed in FSU times when traffic was almost exclusively intra-Soviet Union, also needs refurbishment because it is not suited to new needs for international traffic treatment.

7. **Kiev-Zhulyany.** This airport used to be Kiev domestic airport. It is indeed located almost in the center of the city, which makes it very convenient for commuter flights and business

aviation. Former plans to relocate it further from the city has fortunately been dropped at the light of current traffic (300,000 passengers in 1997).

8. Its aeronautical infrastructures are very poor and do not meet requirements to serve new generation aircraft. Its current terminal is also in poor condition although a VIP lounge has just been completed. Yet, passenger treatment has not changed since FSU times: no modern check-in, no baggage treatment with passengers having to carry their luggage to and from the aircraft. The construction of a new terminal worth US\$19 million was started in 1993/94, but it has been interrupted due to cash shortage, which is not surprising with its low traffic level: today, its revenues do not exceed US\$2 million per year. Its transfer to the Municipality in 1994 may be welcome as an effort to separate airports from airlines. Yet, because it has introduced a lack of coordination with Kiev-Borispol, which, cumulated with the lack of Airport Development Strategy defining the roles and objectives for the elements of an airport system, may lead to costly duplicate investments than Ukrainian public resources are not able to support today. Moreover, because most domestic flights from the regions land at Zhulyany, this situation prevents international Ukrainian airlines from proposing good connections with their international routes since driving time between both airports may exceed 2 hours. This is contradictory with the claimed objective to make Borispol the hub of Ukraine, and even represents an incentive for regional markets to use foreign airlines on direct routes from regional airports.

9. This issue needs further investigation to be held during the elaboration of the Airport Development Strategy. Special attention should be paid in particular on the cost/advantages at the national level to consider the re-classification of this airport which could be limited to general (business) aviation, and the possible merging of its management with Borispol's one.

Annex 10.3. Technical Assistance Program

1. Many studies have already been done in the aviation sector and the Ukrainian administration is well aware of the overall objectives to achieve. The many issue lies in the implementation strategies needed to set up the adequate policy and institutional framework. Therefore, technical assistance is highly needed, with special focus on implementation processes. It could include the following projects:

a) **Administration:** Training for CAA executive managers for transition to a market driven economy

- (i) Reform of the tax system for the aviation/airport sector
- (ii) English training course

Expected cost : US\$0.5 million

b) **Airports**

- (i) Airport Development Strategy
- (ii) Legal framework for airport concessions;
- (iii) Airport(s) privatization strategy formulation.

Expected cost : US\$2 million

c) **Airlines**

- (i) Business Plan for Air Ukraine, including technical assistance for its implementation
- (ii) Training in English for middle and top management

Expected cost : US\$2 million

Table 10.1.1
 TRANSPORT SECTOR REVIEW
 Main Ukrainian airlines (as registered on 01/01/1998), excluding Ministry of Defense,
 airlines without aircraft, aviation schools and academies, and agriculture aerial work, and sport activities.

Airline	Base	Nbe of aircraft	Fleet		1997 Traffic		Staff
			Main types	Capacity Max/Min	Passenger (x1000)	Freight (Tons)	
Passenger only airlines							
Aerosweet (1)	Kiev	2	737-200	120	156.6	447t	
Columbus	Kiev	2	Yak40	32	0.7		
D.M. International	Donetsk	5	Yak40;Le410	14 / 27			
Donbass Airlines	Donetsk	3	Yak40;An24;Tu154	12 / 164	18.1		
Omega	Simferopol	2	An24	48			
Tavria-Mak Joint Stock Cy	Simferopol	3	An24	48	19.2		
Transago Borispol	Kiev	5	Let410,Yak40,Tu134	15 / 68	0.1		
Passenger and Cargo airlines							
Crimea Air	Simferopol	10	An24	36 / 48	173.2	2,457t	2,000
Air Ukraine (1)	Kiev	189	An2;Yak40;Tu34;Tu154;Il62;Il76	12 / 144	910.7	7,312t	9,500
Air Urga	Kirovograd	15	An-24;An26	16 / 48	40.0	1,991t	145
Aviaton	Kiev	4	Yak40;An26	28			
BSL Airline	Kiev	8	Tu154;Il76	144	0.7	4,537t	
Dniproavia	Dnepropetrovsk	17	Yak42;Yak40, An26	32	144.1	2,890t	1,300
ICAR Airlines	Kiev	5	Let410;An24;An26;An74, An12	36	1.7	1,170t	145
Kharkov Aviation Product A	Kharkov	8	Let410;An24;An26;An12;An74	36			
Khortitsa-Air	Zaporozhye	3	Yak40;An32	32			
Kryla	Lvov	2	Il18	96	1.3	76t	
Motor Sich Aviakompania	Zaporozhye	14	Yak40;An24,An26,An12	30	2.2	1,032t	
Odessa Airlines	Odessa	11	Yak40,Tu154	27 / 164	92.0	1,150t	
Tavria Aviakompania	Odessa	1	Tu154	164	28.4	370t	
Ukraine International Airlines	Kiev	5	737-200,737-300	108 / 135	177.6	1,532t	215
Cargo Airlines							
Air Service Ukraine	Kiev	11	Il-76 MD	-		769t	150
Antonov Airtrack	Kiev	4	An26;An32;An124	-		3,559t	
Antonov Design Bureau	Kiev	20	All Antonov	-			
Artem-Avia	Kiev	4	An26	-		204t	
ATI Air company	Kiev	8	Il76	-			
Aviacompania Transavia	Kiev	2	An26/32	-			
Aviant	Kiev	20	An24/32/124	-			
Avilond	Feodosia	2	Il76	-			
Avirciti	Odessa	1	An12	-			
Azov-Avia	Melitopol	3	Il76	-			
Busol	Kiev	7	An12;Il76	-		17t	50
Khors Aircompany	Kiev	13	An24;Il76	-	0.2	10,963t	
Kroonk Air Agency	Kiev	2	An26	-			25
Polissyaaviatrans	Zhitomyr	5	Il76	-			
Ukraine Air Alliance	Kiev	8	An26,An2,An74,A12	-		1,945t	
Veteran Airlines	Dzhankoi	15	An12,Il76	-		2,062t	
Vitair	Kiev	3	An24	-			
Volare	Kiev	6	An12;Il76	-		500t	
Yuzhmashavia	Dnepropetrovsk	6	Yak40/Il76	-	7.0	3,746t	
Others (V.I.P.)							
Aerocharter	Kiev	1	Yak 40	Executive			
Aeroleasing	Kiev	2	Falcon	Executive			
AVIS-Avia Service Internatio	Donetsk	1	Falcon	Executive			
Cabi	Donetsk	3	Falcon	Executive			
Chaika	Kiev	5	Yak;An2;An28	Executive			
UES Avia	Dnepropetrovsk	4	Yak40,Il76	Executive	6.2	2,216t	
Ukraina Aviapredpriatie	Kiev	7	Yak40,Tu134,Tu154,Il62	Executive			
UNA Southern Independant	Odessa	2	Yak40	Executive	4.5		
Universal Avia	Kiev	9	Let410	12 / 15			
TOTAL		488			1,788.0	65,648t	

including, Chernovtsy, Donetsk, Kirovograd, Lugansk, Lvov, Vinnytsa, and Zaporozhye aviation enterprises which are former Aeroflot geographical divisions and operates from airports of the same name, with operations in Air Ukraine colors, although aircraft are marked under their own names.

Source : IATA database, Airclaims, Ukrainian CAA

Table 10.12
 TRANSPORT SECTOR REVIEW
 Passenger traffic of Ukrainian airlines (in thousands)

	International traffic			Domestic traffic			Total traffic		
	1996	1997	%	1996	1997	%	1996	1997	%
Private sector									
1 Crimea	181.1	117.9	- 35%	51.2	55.3	+ 8%	232.3	173.2	- 25%
2 Air Ukraine	852.5	698.3	- 18%	208.2	212.4	+ 2%	1,060.7	910.7	- 14%
<i>of which</i>									
<i>Vinnitsa a/l</i>	6.6	6.2	- 6%	0.2	0.0	- 100%	6.8	6.2	- 9%
<i>Donetsk a/l</i>	123.1	105.4	- 14%	47.3	44.7	- 5%	170.4	150.1	- 12%
<i>Zaporizhzhia a/l</i>	17.8	10.0	- 44%	17.5	14.1	- 19%	35.3	24.1	- 32%
<i>Kiev a/l</i>	67.8	43.4	- 36%	79.9	86.9	+ 9%	147.7	130.3	- 12%
<i>Borispol a/l</i>	440.1	334.9	- 24%	0.0	0.5		440.1	335.4	- 24%
<i>Kirovograd a/l</i>	2.9	39.4	n.s.	0.0	0.9		2.9	40.3	n.s.
<i>Lugansk a/l</i>	40.4	21.8	- 46%	24.3	21.3	- 12%	64.7	43.1	- 33%
<i>Lvov a/l</i>	88.3	74.5	- 16%	38.4	38.6	+ 1%	126.7	113.1	- 11%
<i>Kharkov a/l</i>	45.5	41.9	- 8%	0.3	3.1	n.s.	45.8	45.0	- 2%
<i>Khmelnitsk a/l</i>	4.2	9.2	+ 119%	0.1	1.6	n.s.	4.3	10.8	+ 151%
<i>Chernovtsy a/l</i>	15.8	11.6	- 27%	0.2	0.7	n.s.	16.0	12.3	- 23%
3 Dniproavia	124.5	111.8	- 10%	29.7	32.3	+ 9%	154.2	144.1	- 7%
4 Universalavia	0.0	0.0		2.8	0.7	- 75%	2.8	0.7	- 75%
<i>of which</i>									
<i>Uzhgorod a/l</i>				1.2	0.3	- 75%	1.2	0.3	- 75%
<i>Poltava a/l</i>				0.8	0.0	- 100%	0.8		- 100%
<i>Chernigov a/l</i>				0.0	0.0				
<i>Sunny a/l</i>				0.8	0.4	- 50%	0.8	0.4	- 50%
5 Odessa airlines	95.6	71.8	- 25%	17.6	20.2	+ 15%	113.2	92.0	- 19%
6 Ukrainian International	178.6	177.6	- 1%	0.0	0.0		178.6	177.6	- 1%
Total public sector	1,432.3	1,177.4	- 18%	309.5	320.9	+ 4%	1,741.8	1,498.3	- 14%
Private sector									
7 Aerosweet	116.6	156.6	+ 34%	0.0	0.0		116.6	156.6	+ 34%
8 Others	126.4	118.6	- 6%	12.8	14.5	+ 13%	139.2	133.1	- 4%
Total private sector	243.0	275.2	+ 13%	12.8	14.5	+ 13%	255.8	289.7	+ 13%
TOTAL	1,675.3	1,452.6	- 13%	322.3	335.4	+ 4%	1,997.6	1,788.0	- 10%

Table 10.1.3
 TRANSPORT SECTOR REVIEW
 Freight traffic of Ukrainian airlines (in tons)

	International traffic			Domestic traffic			Total traffic		
	1996	1997	%	1996	1997	%	1996	1997	%
Private sector									
1 Crimea	145.6	119.8	- 18%	5,921.8	2,337.2	- 61%	6,067.4	2,457.0	- 60%
2 Air Ukraine	11,767.5	7,168.2	- 39%	130.8	144.1	+ 10%	11,898.3	7,312.3	- 39%
<i>of which</i>									
<i>Vinnitsa a/l</i>	3.0	12.0	+ 300%				3.0	12.0	+ 300%
<i>Donetsk a/l</i>	637.1	458.5	- 28%	23.4	22.7	- 3%	660.5	481.2	- 27%
<i>Zaporizhzhya a/l</i>	110.5	13.8	- 88%	6.0	4.8	- 20%	116.5	18.6	- 84%
<i>Kiev a/l</i>	152.7	109.9	- 28%	69.9	70.7	+ 1%	222.6	180.6	- 19%
<i>Borispol a/l</i>	3,419.7	1,804.0	- 47%	0.0	1.2		3,419.7	1,805.2	- 47%
<i>Kirovograd a/l</i>		349.0		0.0	0.0			349.0	
<i>Lugansk a/l</i>	1,289.7	266.6	- 79%	10.0	10.5	+ 5%	1,299.7	277.1	- 79%
<i>Lvov a/l</i>	5,517.4	3,680.1	- 33%	21.5	26.5	+ 23%	5,538.9	3,706.6	- 33%
<i>Kharkov a/l</i>	291.8	383.5	+ 31%	0.0	5.8		291.8	389.3	+ 33%
<i>Khmelnitsk a/l</i>	279.6	89.3	- 68%	0.0	1.8		279.6	91.1	- 67%
<i>Chernovtsy a/l</i>	66.0	1.5	- 98%	0.0	0.1		66.0	1.6	- 98%
3 Dniproavia	924.1	2,874.5	+ 211%	13.5	15.9	+ 18%	937.6	2,890.4	+ 208%
4 Universalavia									
<i>of which</i>									
<i>Uzhgorod a/l</i>									
<i>Poltava a/l</i>									
<i>Chernigov a/l</i>									
<i>Sunny a/l</i>									
5 Odessa airlines	2,346.2	1,143.3	- 51%	7.9	6.6	- 16%	2,354.1	1,149.9	- 51%
6 Ukrainian International	1,387.0	1,531.9	+ 10%	0.0	0.0		1,387.0	1,531.9	+ 10%
Total public sector	16,570.4	12,837.7	- 23%	6,074.0	2,503.8	- 59%	22,644.4	15,341.5	- 32%
Private sector									
7 Aerosweet	360.8	447.3	+ 24%				360.8	447.3	+ 24%
8 Others	34,114.8	47,344.4	+ 39%	1,814.5	2,515.4	+ 39%	35,929.3	49,859.8	+ 39%
Total private sector	34,475.6	47,791.7	+ 39%	1,814.5	2,515.4	+ 39%	36,290.1	50,307.1	+ 39%
TOTAL	51,046.0	60,629.4	+ 19%	7,888.5	5,019.2	- 36%	58,934.5	65,648.6	+ 11%

Table 10.1.4
TRANSPORT SECTOR REVIEW
 Ukrainian airports passenger traffic (in thousands) and proposed commercial classification

Airport	1990	1995			1996			1997			Proposed Category
	Total	Dom.	Int. (1)	Total	Dom.	Int. (1)	Total	Dom.	Int. (1)	Total	
Kiev Borispol	5,640	61	1,271	1,332	44	1,258	1,302	70	1,324	1,394	A
Simferopol	4,887	69	508	577	68	434	502	94	310	404	A
Odessa	3,019	28	352	380	30	334	364	32	264	296	A
Donetsk	1,771	84	197	281	74	174	248	84	112	196	A
Kiev Zhulyany	2,104	259	51	310	286	52	338	274	44	318	A
Lvov	2,531	39	91	130	34	100	134	38	84	122	A
Kharkov	1,792	24	55	79	16	54	70	18	46	64	A
Dnepropetrovsk	1,085	22	130	152	40	140	180	40	138	178	A
Poltava	270	5	23	28	2	2	4	2	1	3	C
Ivano-Frankovsk	532	18	29	47	13	19	31	14	12	26	B
Nikolaev	437	2	42	44	5	29	34	2	20	22	B
Lugansk	1,022	23	39	62	29	40	69	26	22	48	B
Uzhgorod	280	29	21	50	23	11	34	19	7	26	B
Zaporozhe	839	29	53	82	21	42	63	19	34	53	B
Chernovitsy	341	18	16	34	4	17	21	3	11	15	C
Kherson	347	1	6	7	3	5	7	1	6	7	C
Kerch	93	5	5	10	1		1	1		1	C
Kirovograd	320		4	4	0	3	3	2	19	21	B
Severodonetsk	122	5	6	11							C
Mariupol	199		9	9	12	7	19	14	8	22	B
Khmelnitsy	220		5	5	1	3	4	0	4	5	B
Krivoy Rog	255	2	9	11	1	12	13	1	8	10	C
Cherkassy	277		5	5		0	0	1		1	C
Vinnitsa	254	2	2	4	2	3	5	2	1	3	C
Sumy	104	2		2	3		3	2		2	C
Berdiansk	150	4		4	2		2	2		2	C
Chernigov	42	1		1							C
Ternopol	123	1		1	1		1	1		1	C
Lutsk	90	1		1	0		0	0		0	C
Rovny	285	3	24	27	2	8	11	3	2	5	B
Zhitomir	49										C
Total :	29,480	737	2,953	3,690	717	2,746	3,463	765	2,478	3,243	

(1) international including CIS

Source : TTC Report, CAA.

Table 10.15
TRANSPORT SECTOR REVIEW
Historic Traffic Analysis

(in thousand passengers)	1990	1995	1996	1997	% 1990
1. Total Ukrainian Airports	29,480	3,690	3,463	3,243	11%
Including					
Kiev-Borispol	5,640	1,332	1,302	1,394	25%
Kiev Zhulyany	2,104	310	338	318	15%
2. Sub Total-Kiev	7,744	1,642	1,640	1,712	22%
3. Sub Total Kiev (% of Total 1.)	26%	44%	47%	53%	
Simferopol	4,887	577	502	404	8%
Odessa	3,019	380	364	296	10%
Donetsk	1,771	281	248	196	11%
Lvov	2,531	130	134	122	5%
Kharkov	1,792	79	70	64	4%
Dnepropetrovsk	1,085	152	180	178	16%
4. Sub Total Main Airports	22,829	3,241	3,138	2,972	13%
5. Total 8 Main Airports (% of Total 1.)	77%	88%	91%	92%	
Other airports	6,651	449	325	271	4%
6. Total other Airports (% of Total 1.)	23%	12%	9%	8%	

Airport	1995			1996			1997		
	Dom.	Int. (1)	Total	Dom.	Int. (1)	Total	Dom.	Int. (1)	Total
Kiev Borispol & Zhulyany	320	1,322	1,332	330	1,310	1,302	344	1,368	1,394
Simferopol	69	508	577	68	434	502	94	310	404
Odessa	28	352	380	30	334	364	32	264	296
Donetsk	84	197	281	74	174	248	84	112	196
Dnepropetrovsk	22	130	152	40	140	180	40	138	178
Sub Total	523	2,509	2,722	542	2,392	2,596	594	2,192	2,468
Other airports	214	444	968	175	354	867	171	286	775
Total :	737	2,953	3,690	717	2,746	3,463	765	2,478	3,243

Graph 10.1.5: Ukrainian Airports- Indexed Traffic Trends (Base 100=1990)

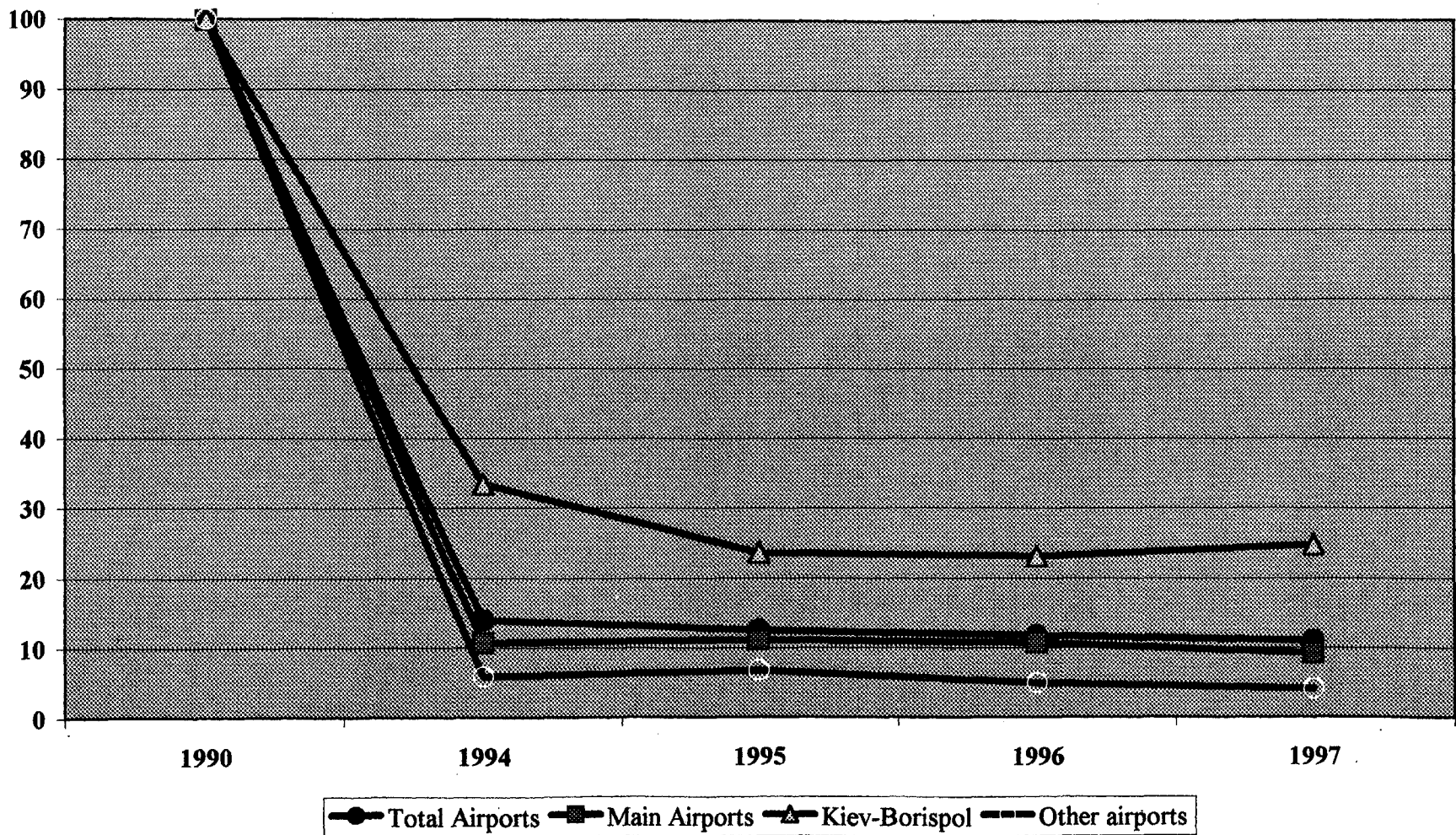


Table 10.1.6
TRANSPORT SECTOR REVIEW
AIRPORT SECTOR
Financial Highlights
for the year ended December 31st
(in million US\$'s)

Source : TTC

	1995 Borispol	1995 Lviv	1995 Simferopol	1995 Novosvitlovka
Operating airport revenues	20.678	1.578	3.022	0.861
Working Expenses	11.189	1.000	1.911	0.472
Operating Result before depreciation	9.489	0.578	1.111	0.389
Estimated depreciation*	2.000	0.500	0.500	0.250
Net operating result	7.489	0.078	0.611	0.139
Traffic (million pax)	1.332	0.310	0.577	0.081
Working Ratio	54%	63%	63%	55%
Operating Ratio	64%	95%	80%	84%
Pricing Ratio (in US\$/pass.)	15.52	5.09	5.24	10.63
Costing Ratio (working expenses in US\$/pax)	8.40	3.23	3.31	5.83
Costing Ratio (operating expenses in US\$/pax)	9.90	4.84	4.18	8.91
Operating Cash Flow before tax	9.489	0.578	1.111	0.389

* to be updated

Table 10.1.7
UKRAINE
TRANSPORT SECTOR REVIEW
AIRPORT SECTOR
Borispol International Airport
Financial Highlights
for the year ended December 31st
(in million US\$'s)

Source : TTC and Coopers & Lybrand-Kiev

	Borispol 1995	Borispol 1996	Borispol 1997	Borispol Normalised
Operating airport revenues	20.678	20.901	21.782	24.000
Working Expenses	11.189	14.285	18.444	15.750
Operating Result before depreciation	9.489	6.616	3.338	8.250
Estimated depreciation	2.000	4.431	5.973	5.500
Net operating result	7.489	2.185	(2.635)	2.750
Traffic (million pax)	1.332	1.302	1.394	1.500
Working Ratio	54%	68%	85%	66%
Operating Ratio	64%	90%	112%	89%
Pricing Ratio (in US\$/pass.)	15.52	16.05	15.63	16.00
Costing Ratio (working expenses in US\$/pax)	8.40	10.97	13.23	10.50
Costing Ratio (operating expenses in US\$/pax)	9.90	14.37	17.52	14.17
Operating Cash Flow before tax	9.489	6.616	3.338	8.250

Table 10.1.7
TRANSPORT SECTOR REVIEW
AIRPORT SECTOR
Borispol International Airport
Financial Highlights
for the year ended December 31st
(in million US\$'s)

Source : Coopers & Lybrand-Kiev

	Borispol 1996	Borispol 1997
Operating airport revenues	20.9	21.8
Working Expenses	14.3	18.4
Operating Result before depreciation	6.6	3.3
Net operating result	2.2	(2.6)
Net Profit (Loss) before Tax	7.4	4.5
Net Profit (Loss) after Tax	5.1	3.4
Traffic (million pass.)	1.302	1.394
Working Ratio	68%	85%
Operating Ratio	90%	112%
Pricing Ratio (in US\$/pass.)	16.05	15.63
Airport Operating Cash Flow	6.6	3.3
Net Cash Flow	9.5	9.3
Net Cash Flow/Operating Revenues	45%	43%

Table 10.1.8
TRANSPORT SECTOR REVIEW
AIRPORT SECTOR
Borispol International Airport
Income Statements and Cash Flow
for the year ended December 31st
(in million US\$'s)

Source : Coopers & Lybrand-Kiev

	Borispol 1996	Borispol 1997	Borispol 1996 (in US\$/pax)	Borispol 1997 (in US\$/pax)
Revenues	26.355	28.458	20.2	20.4
Airport Activities	20.901	21.782	16.1	15.6
Other Activities	5.454	6.676	4.2	4.8
Expenses				
Labor	7.884	10.342	6.1	7.4
Maintenance	4.519	5.214	3.5	3.7
Other	1.882	2.888	1.4	2.1
Working expenses	14.285	18.444	11.0	13.2
Depreciation	4.519	5.214	3.5	3.7
Provision	-0.088	0.759	-0.1	0.5
Operating Expenses	18.716	24.417	14.4	17.5
Operating Profit (Loss)	7.639	4.041	5.9	2.9
Other Income	1.830	3.207	1.4	2.3
Other Expenses	2.040	2.765	1.6	2.0
Profit before Tax	7.429	4.483	5.7	3.2
Tax	2.370	1.130	1.8	0.8
Profit after tax	5.059	3.353	3.9	2.4
Airport activities Operating Cash Flow	6.616	3.338	5.1	2.4
Net Cash Flow	9.490	9.326	7.3	6.7

Table 10.2.2
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 1: Complete Reform

Statistics
for the years ended december 31st

Source :	Фактично	1998	План PROJECTED			1998	1999	2000	2001
	1997		1999	2000	2001				
International									
Take off & Landig									
Freight (Tons):		0.030	0.033	0.036	0.040	0.042	0.044	0.046	0.049
Passenger-Borispol	1.368	1.400	1.540	1.694	1.863	1.957	2.054	2.157	2.265
Passenger-Other	1.110	1.100	1.177	1.259	1.348	1.415	1.486	1.560	1.638
Total									
Domestic									
Take off & Landig									
Freight (Tons):		0.030	0.033	0.036	0.040	0.042	0.044	0.046	0.049
Passengers	0.765	0.750	0.825	0.908	0.998	1.048	1.101	1.156	1.213
Total Take off & Landing	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Freight (mln Tons)	0.000	0.060	0.066	0.073	0.080	0.084	0.088	0.092	0.097
Total Passengers (mln)	3.243	3.250	3.542	3.861	4.209	4.420	4.641	4.873	5.116
Other	-----	-----	-----	-----	-----	-----	-----	-----	-----
Estimated Number Employee	10,000	10,000	7,500	5,625	4,219	4,006	3,807	3,617	3,436
Productivity/Employee									
Turnover/Employee									
Salary/Employee	125	125	150	150	216	238	261	287	316

Table 10.2.3
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 1: Complete Reform

Pro-Forma Income Statements
for the years ended december 31st
(US\$ mln)

Source : Reports	ФАКТИЧНО	ПЛАН PROJECTED							
	1997	1998	1999	2000	2001	1998	1999	2000	2001
Revenue :									
Freight									
International		0.060	0.071	0.084	0.099	0.109	0.121	0.133	0.147
Domestic		0.030	0.035	0.042	0.050	0.055	0.060	0.066	0.073
Passenger:									
International-Borispol	21.4	21.9	26.5	32.0	38.8	42.7	47.1	51.9	57.3
International-Other	13.0	12.9	15.2	17.9	21.0	23.2	25.5	28.2	31.1
Domestic	4.8	4.7	5.5	6.6	7.8	8.5	9.4	10.4	11.5
Other	6.6	6.7	8.1	9.8	11.9	13.1	14.4	15.9	17.5
Operating Revenues	45.7	46.2	55.4	66.4	79.6	87.7	96.7	106.6	117.5
Expense :									
Salaries	19.2	15.0	13.5	12.2	10.9	11.4	11.9	12.5	13.0
Pension & Benefits		7.5	4.7	4.3	3.8	2.9	3.0	3.1	3.3
SubTotal Salaries & Benefits		22.5	18.2	16.4	14.8	14.3	14.9	15.6	16.3
Maintenance	9.7	9.7	10.9	11.9	13.0	13.9	14.6	15.3	16.1
Other operating expenses	5.4	5.4	6.0	6.6	7.2	7.7	8.1	8.5	8.9
Overhead	1.0	1.0	1.2	1.3	1.4	1.5	1.5	1.6	1.7
Working Expenses	35	39	36	36	36	37	39	41	43
Operating Result	10	8	19	30	43	50	58	66	75
Depreciation	20	21	22	23	23	28	29	30	31
Provision for bad debts			2	2	2	4	5	5	6
Net Operating Result	(10)	(14)	(5)	6	18	18	24	30	37
Interest expenses									
Extraordinary items (net)									
Provision for Social Program			9	8	7	2	2	2	2
Net Income (Loss)	(10)	(14)	(14)	(2)	10	16	22	28	35
Taxes	0	0	0	0	3	5	7	8	11
Net Income (Loss) after Tax	(10)	(14)	(14)	(2)	7	11	15	20	25
Operating Expenditures	55	60	60	61	62	70	73	77	80

Table 10.2.4
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 1: Complete Reform

Pro-Forma Sources & Uses of Funds

per year, as of December 31

(US\$ mln)

Source : Reports	No	ПЛАН PROJECTED				
		1997	1998	1999	2000	2001
SOURCES OF FUNDS						
Net Income	(10)	(14)	(14)	(2)	7	11
Depreciation & Provisions	20	21	33	33	33	34
Other						
Funds from Operations	10	8	19	30	40	46
Borrowings						
Equity Capital						
Change in working capital	0	0	6	5	4	(4)
Financing	0	0	6	5	4	(4)
Total Sources	10	8	25	35	44	42
USES OF FUNDS						
Repayment of LT Debt			1	1	1	1
Net Plant & Equipment	10	8		20	20	30
Change in Working Capital nee	0	0	3	3	2	7
Bad debts	0	0	2	2	2	4
Staff rightsizing program			9	8	7	2
Total Uses	10	8	15	34	33	44
Total Sources & Uses	0	(0)	10	1	11	(2)
Estimated financing capacity	10	8	10	21	31	28

Table 10.2.5
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 1: Complete Reform

Pro-Forma Balance Sheets

per year, as of December 31

(US\$ mln)

Source : Reports	ФАКТИЧНО		ПЛАН				PROJECTED			
	No	1997	1998	1999	2000	2001	2002	2003	2004	2005
ASSETS										
Cash	2	2	2	12	13	24	22	34	50	72
Accounts Receivables	35	35	35	30	25	21	22	24	27	29
Inventories	3	3	3	3	2	2	5	6	6	6
Current assets	40	40	44	44	41	48	50	63	83	108
Fixed assets	675	708	733	733	753	773	803	833	863	893
Accumulated depreciation	400	421	443	443	466	489	517	546	576	608
Net Fixed assets	275	287	290	290	287	284	286	287	287	285
Work in progress	25	25								
Other assets	25									
Total Assets	365	351	334	334	328	332	336	350	369	393
LIABILITIES										
Current Liabilities	20	20	17	17	14	12	6	6	6	7
Long Term Debt	10	10	9	9	8	7	6	5	4	3
Provisions	0									
Paid in Capital	335	335	335	335	335	335	335	335	335	335
Retained Earning (Loss)			(14)	(14)	(27)	(30)	(22)	(11)	4	24
Current income		(14)	(14)	(14)	(2)	7	11	15	20	25
Total Equity	335	321	308	308	305	313	324	339	359	383
Total liabilities	365	351	334	334	328	332	336	350	369	393

Table 10.2.6
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 1: Complete Reform

ProForma Ratio Analysis

Source : Reports	Фактично		ПЛАН PROJECTED							
	No	1997	1998	1999	2000	2001	2002	2003	2004	
Efficiency:										
Revenue turnover		16.6%	16.1%	19.1%	23.1%	28.0%	30.7%	33.7%	37.2%	41.2%
Receivables turnover *		276	272	193	137	97	90	90	90	90
Inventory turnover *		24	23							
Number Employees		10,000	10,000	7,500	5,625	4,219	4,008	3,807	3,617	3,436
Traffic Units/Employee		324	325	472	686	998	1,103	1,219	1,347	1,489
Pricing :										
Passengers (number departing) @ US\$ per Unit		14.1	14.2	15.6	17.2	18.9	19.8	20.8	21.9	23.0
Profitability :										
Working Ratio		77%	- 84%	66%	54%	46%	43%	40%	38%	37%
Operating Ratio		121%	129%	108%	91%	78%	80%	76%	72%	68%

Graph 10.2.7: Main Financial Indicators

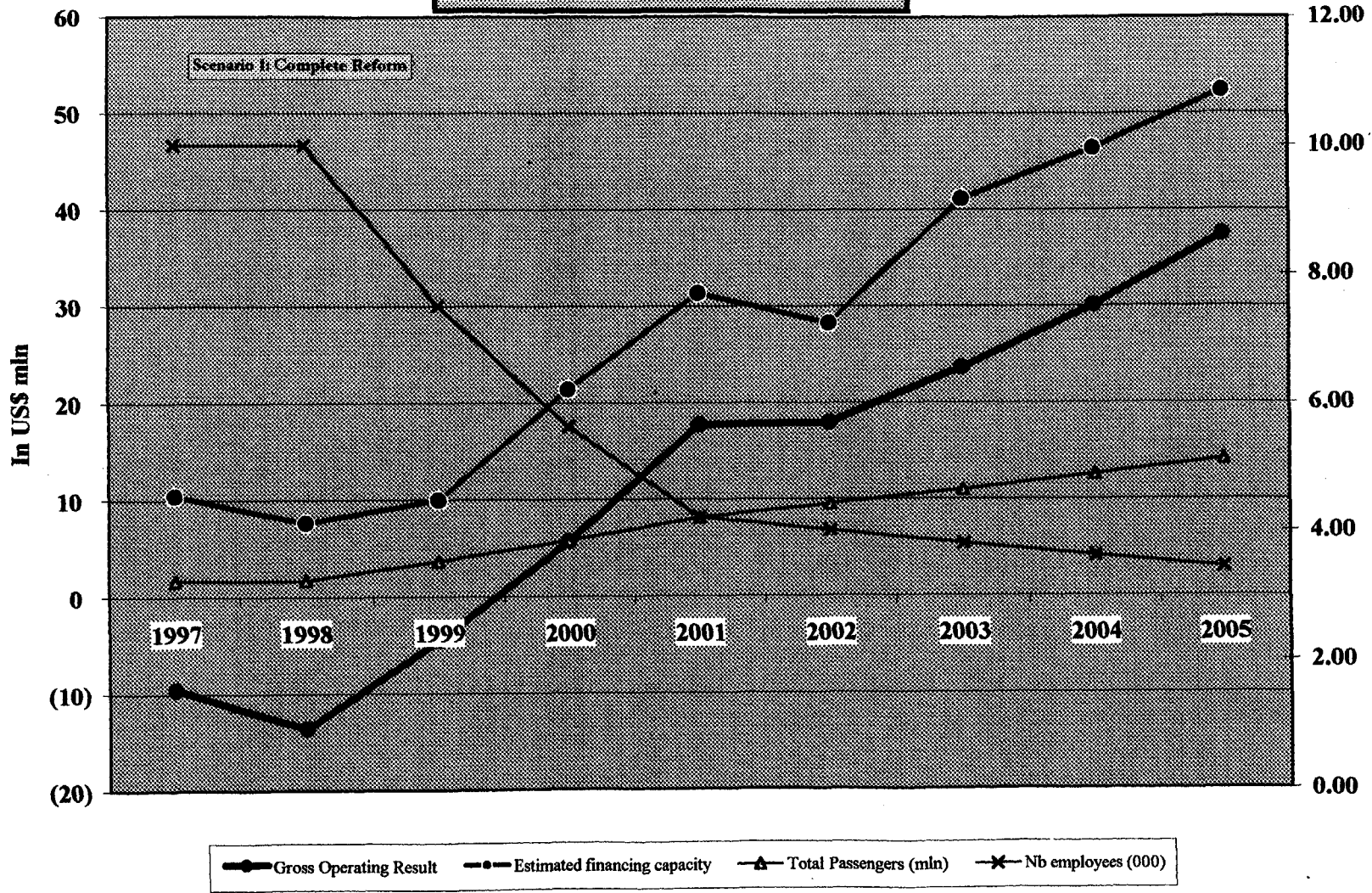


Table 10.2.2
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Україна / Ukraine

Statistics
for the years ended december 31st

Source :	Фактично	1998	План PROJECTED			1998	1999	2000	2001
	1997		1999	2000	2001				
International									
Take off & Landig									
Freight (Tons):		0.030	0.032	0.033	0.035	0.036	0.037	0.038	0.039
Passenger-Borispol	1.368	1.400	1.470	1.544	1.621	1.653	1.686	1.720	1.754
Passenger-Other	1.110	1.100	1.133	1.167	1.202	1.226	1.251	1.276	1.301
Total									
Domestic									
Take off & Landig									
Freight (Tons):		0.030	0.032	0.033	0.035	0.036	0.037	0.038	0.039
Passengers	0.765	0.750	0.773	0.796	0.820	0.836	0.853	0.870	0.887
Total Take off & Landing	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Freight (mln Tons)	0.000	0.060	0.063	0.066	0.069	0.072	0.074	0.076	0.078
Total Passengers (mln)	3.243	3.250	3.376	3.506	3.642	3.715	3.789	3.865	3.942
Other									
Estimated Number Employe	10,000	10,000	9,980	9,941	9,783	9,809	9,319	9,132	8,980
Productivity/Employee									
Turnover/Employee									
Salary/Employee	125	125	131	138	145	152	160	168	176

Table 10.2.3
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 1: Stable Run

Pro-Forma Income Statements
for the years ended december 31st
(US\$ mln)

Source : Reports	ФАКТИЧНО	ПЛАН PROJECTED							
	1997	1998	1999	2000	2001	1998	1999	2000	2001
Revenue :									
Freight									
International		0.060	0.068	0.076	0.086	0.093	0.101	0.109	0.118
Domestic		0.030	0.034	0.038	0.043	0.047	0.050	0.055	0.059
Passenger:									
International-Borispol	21.4	21.9	24.1	26.6	29.3	30.5	31.7	33.0	34.3
International-Other	13.0	12.9	13.7	14.5	15.4	16.0	16.7	17.3	18.0
Domestic	4.8	4.7	4.9	5.2	5.4	5.7	5.9	6.1	6.4
Other	6.6	6.7	7.4	8.1	9.0	9.3	9.7	10.1	10.5
Operating Revenues	45.7	46.2	50.2	54.5	59.3	61.7	64.2	66.8	69.5
Expense :									
Salaries	19.2	15.0	15.6	16.2	16.8	17.3	17.8	18.4	18.9
Pension & Benefits		7.5	5.5	5.7	5.9	6.1	6.2	6.4	6.6
SubTotal Salaries & Benefits		22.5	21.0	21.9	22.7	23.4	24.1	24.8	25.5
Maintenance	9.7	9.7	10.3	10.7	11.1	11.4	11.7	11.9	12.2
Other operating expenses	5.4	5.4	5.7	5.9	6.2	6.3	6.5	6.6	6.7
Overhead	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3	1.3
Working Expenses	35	39	38	40	41	42	43	45	46
Operating Result	10	8	12	15	18	19	21	22	24
Depreciation	20	21	22	23	23	28	29	30	31
Provision for bad debts			0	0	0	1	.1	1	1
Net Operating Result	(10)	(14)	(10)	(8)	(5)	(9)	(9)	(9)	(8)
Interest expenses									
Extraordinary items (net)									
Provision for Social Program			0	0	0	0	0	0	0
Net Income (Loss)	(10)	(14)	(10)	(8)	(5)	(9)	(9)	(9)	(8)
Taxes	0	0	0	0	0	0	0	0	0
Net Income (Loss) after Tax	(10)	(14)	(10)	(8)	(5)	(9)	(9)	(9)	(8)
Operating Expenditures	55	60	60	62	64	71	73	75	78

Table 10.2.4
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 1 - Status Quo

Pro-Forma Sources & Uses of Funds
per year, as of December 31
(US\$ mln)

Source : Reports	No	1997	1998	ПЛАН PROJECTED			1999	2000	2001	1999	2000	2001	2002
SOURCES OF FUNDS													
Net Income		(10)	(14)	(10)	(8)	(5)	(9)	(9)	(9)	(8)			
Depreciation & Provisions		20	21	22	23	23	29	30	31	32			
Other													
Funds from Operations		10	8	12	15	18	19	21	22	24			
Borrowings													
Equity Capital													
Change in working capital		0	0	6	5	4	4	(1)	(1)	(1)			
Financing		0	0	6	5	4	4	(1)	(1)	(1)			
Total Sources		10	8	18	20	22	23	20	21	23			
USES OF FUNDS													
Repayment of LT Debt				1	1	1	1	1	1	1			
Net Plant & Equipment		10	8		20	20	30	30	30	30			
Change in Working Capital nee		0	0	3	3	2	8	(0)	(0)	(0)			
Bad debts		0	0	0	0	0	1	1	1	1			
Staff rightsizing program				0	0	0	0	0	0	0			
Total Uses		10	8	4	24	23	39	32	32	32			
Total Sources & Uses		0	(0)	14	(4)	(1)	(16)	(12)	(10)	(9)			
Estimated financing capacity		10	8	14	16	19	14	18	20	21			

Table 10.2.5
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 1: Status Quo

Pro-Forma Balance Sheets

per year, as of December 31

(US\$ mln)

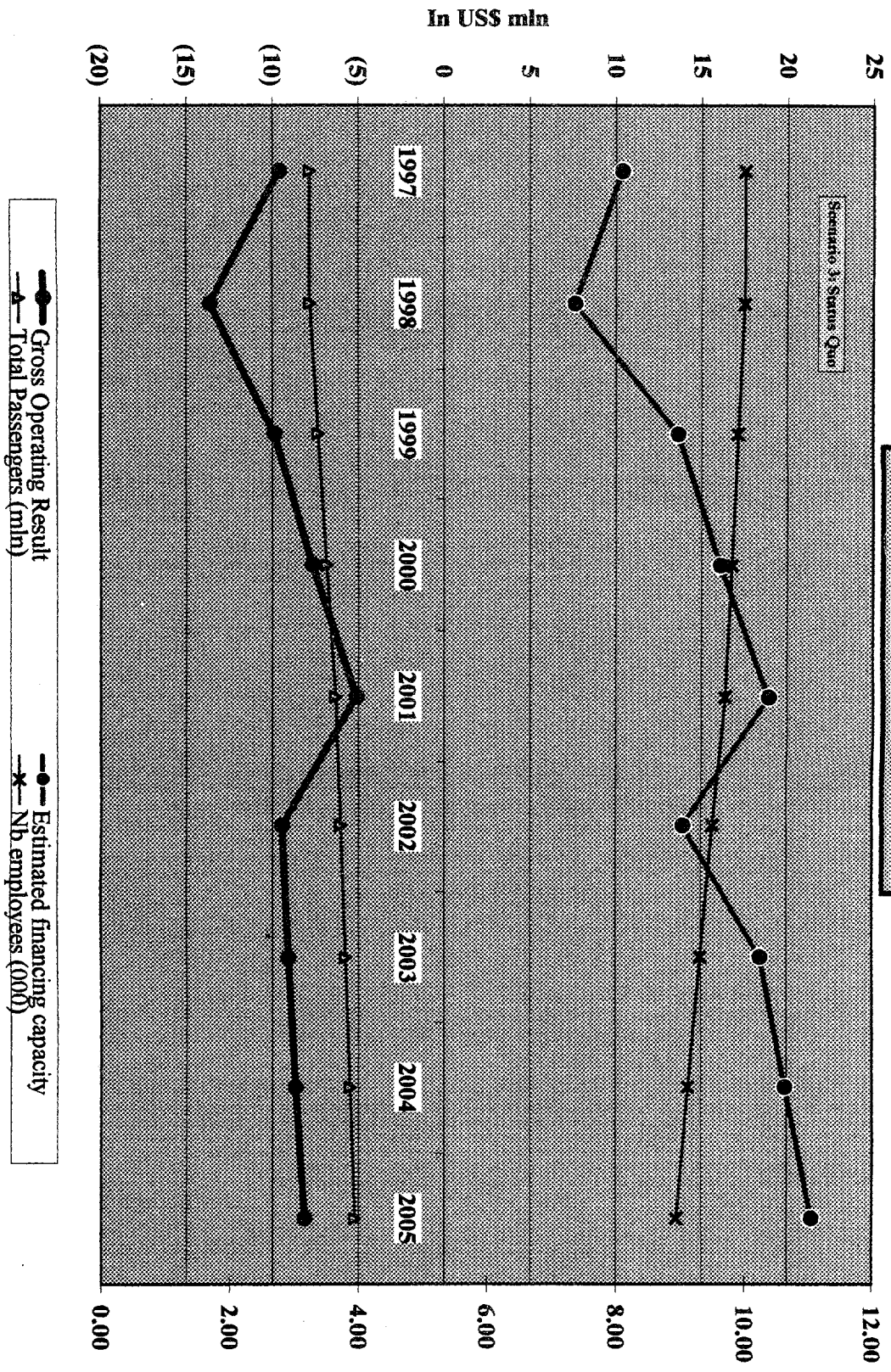
Source : Reports	ФАКТИЧНО		ПЛАН PROJECTED							
	No	1997	1998	1999	2000	2001				
ASSETS										
Cash	2	2	2	15	11	10	(6)	(17)	(28)	(36)
Accounts Receivables	35	35	35	30	25	21	15	16	17	17
Inventories	3	3	3	3	2	2	4	5	5	5
Current assets	40	40	40	48	39	34	14	3	(6)	(14)
Fixed assets	675	708	708	733	753	773	803	833	863	893
Accumulated depreciation	400	421	421	443	466	489	517	546	576	608
Net Fixed assets	275	287	287	290	287	284	286	287	287	285
Work in progress	25	25	25							
Other assets	25									
Total Assets	365	365	351	337	326	318	300	290	280	271
LIABILITIES										
Current Liabilities	20	20	20	17	14	12	5	5	5	5
Long Term Debt	10	10	10	9	8	7	6	5	4	3
Provisions	0									
Paid in Capital	335	335	335	335	335	335	335	335	335	335
Retained Earning (Loss)				(14)	(24)	(31)	(36)	(46)	(55)	(64)
Current income		(14)	(14)	(10)	(8)	(5)	(9)	(9)	(9)	(8)
Total Equity	335	321	321	311	304	299	289	280	271	263
Total liabilities	365	365	351	337	326	318	300	290	280	271

Table 10.2.6
TRANSPORT SECTOR REVIEW
UKRAINIAN AIRPORTS

Scenario 3: Status Quo
ProForma Ratio Analysis

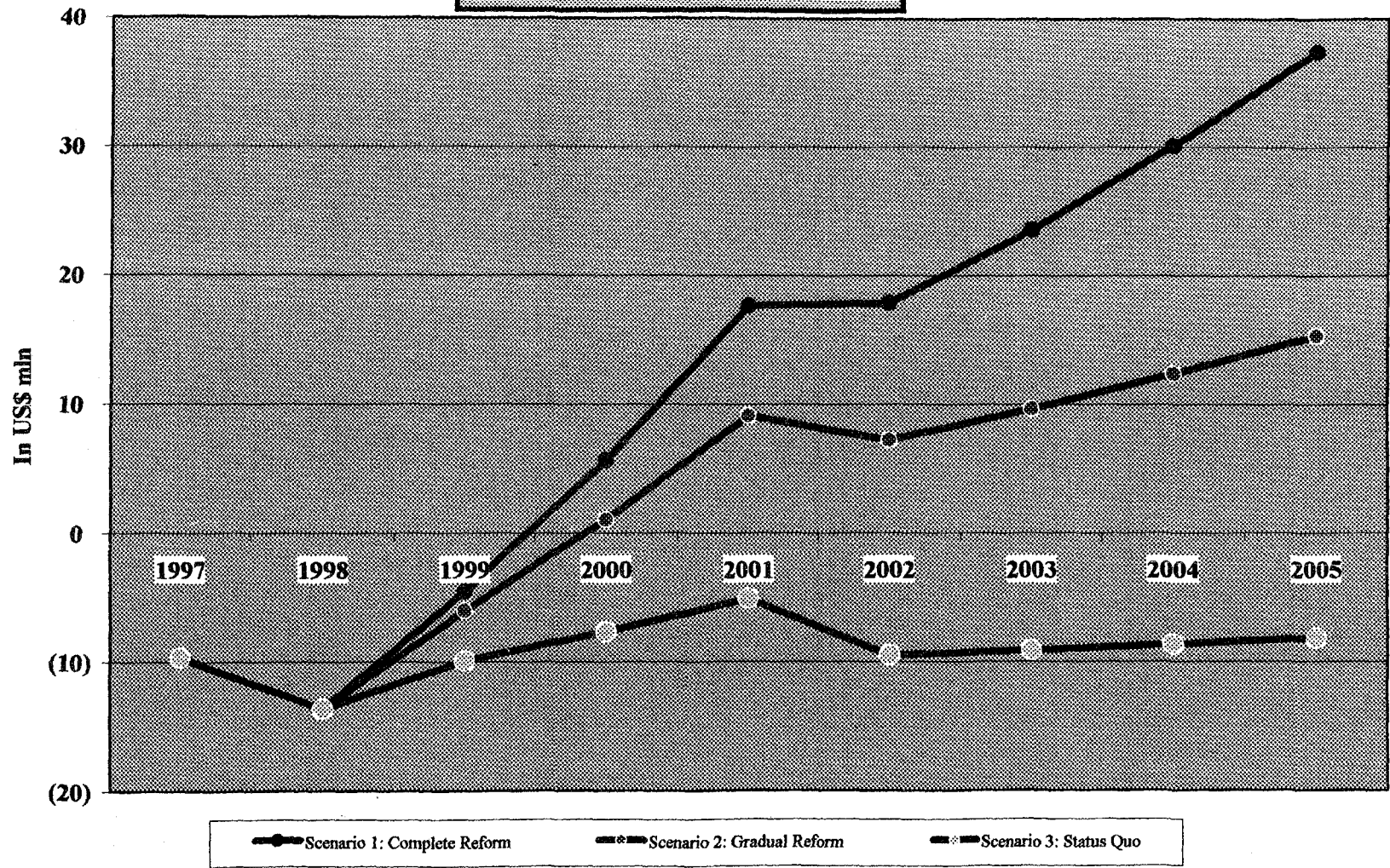
Source : Reports	Фактично		ПЛАН PROJECTED							
	No	1997	1998	1999	2000	2001				
Efficiency:										
Revenue turnover		16.6%	16.1%	17.3%	19.0%	20.9%	21.6%	22.4%	23.3%	24.3%
Receivables turnover *		276	272	213	167	131	90	90	90	90
Inventory turnover *		24	23							
Number Employees		10,000	10,000	9,900	9,801	9,703	9,509	9,319	9,132	8,950
Traffic Units/Employee		324	325	341	358	375	391	407	423	441
Pricing :										
Passengers (number departing)										
@ US\$ per Unit		14.1	14.2	14.9	15.6	16.3	16.6	16.9	17.3	17.6
Profitability :										
Working Ratio		77%	84%	76%	73%	70%	69%	68%	67%	66%
Operating Ratio		121%	129%	120%	114%	109%	115%	114%	113%	112%

Graph 10.2.7: Main Financial Indicators

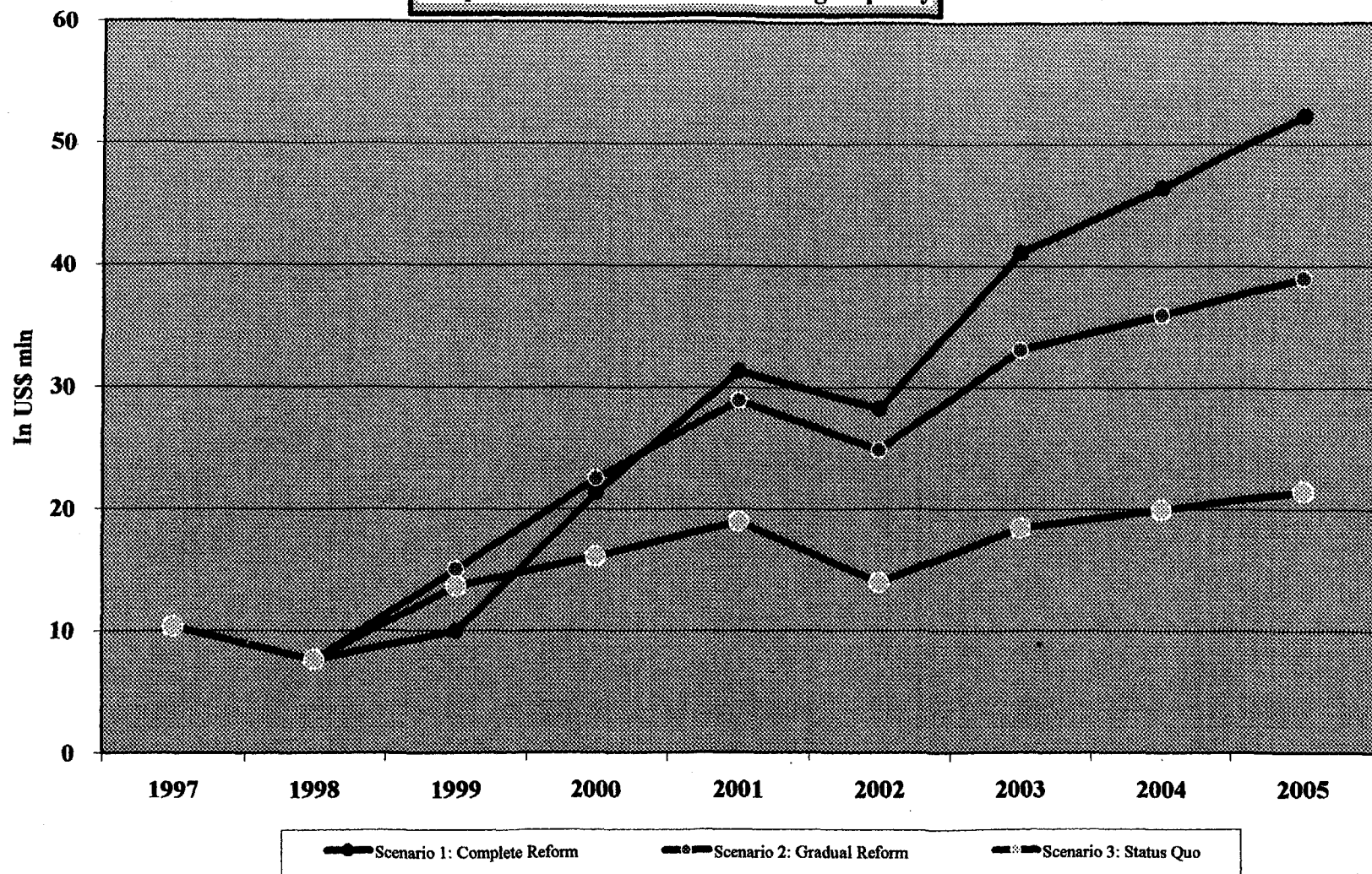


Gross Operating Result
 Total Passengers (mln)
 Estimated financing capacity
 Nb employees (000)

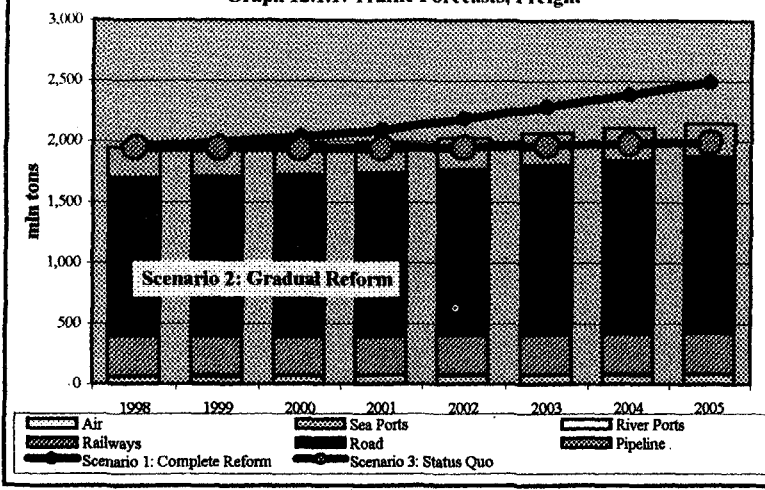
Graph 10.2.8: Gross Operating Result



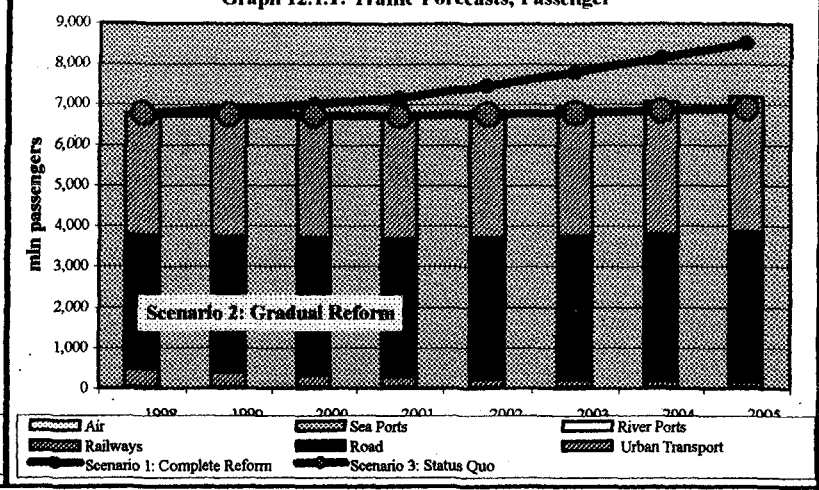
Graph 10.2.9: Investment Financing Capacity



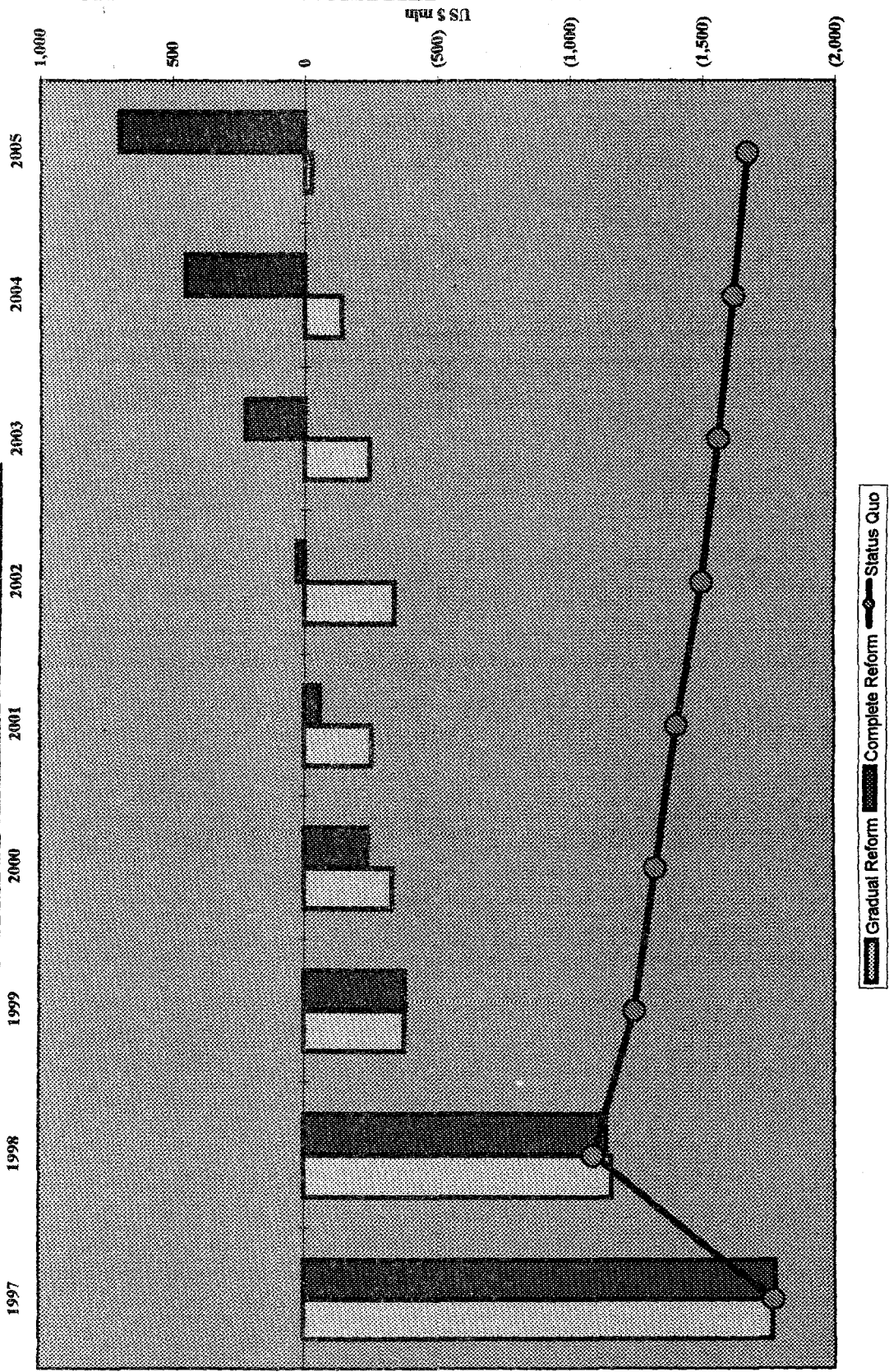
Graph 12.1.1: Traffic Forecasts, Freight



Graph 12.1.1: Traffic Forecasts, Passenger



Graph 12.1.2: Public Surplus in the Transport Sector



Graph 12.1.3: Expected Economic Benefits from Trade & Facilitation measures

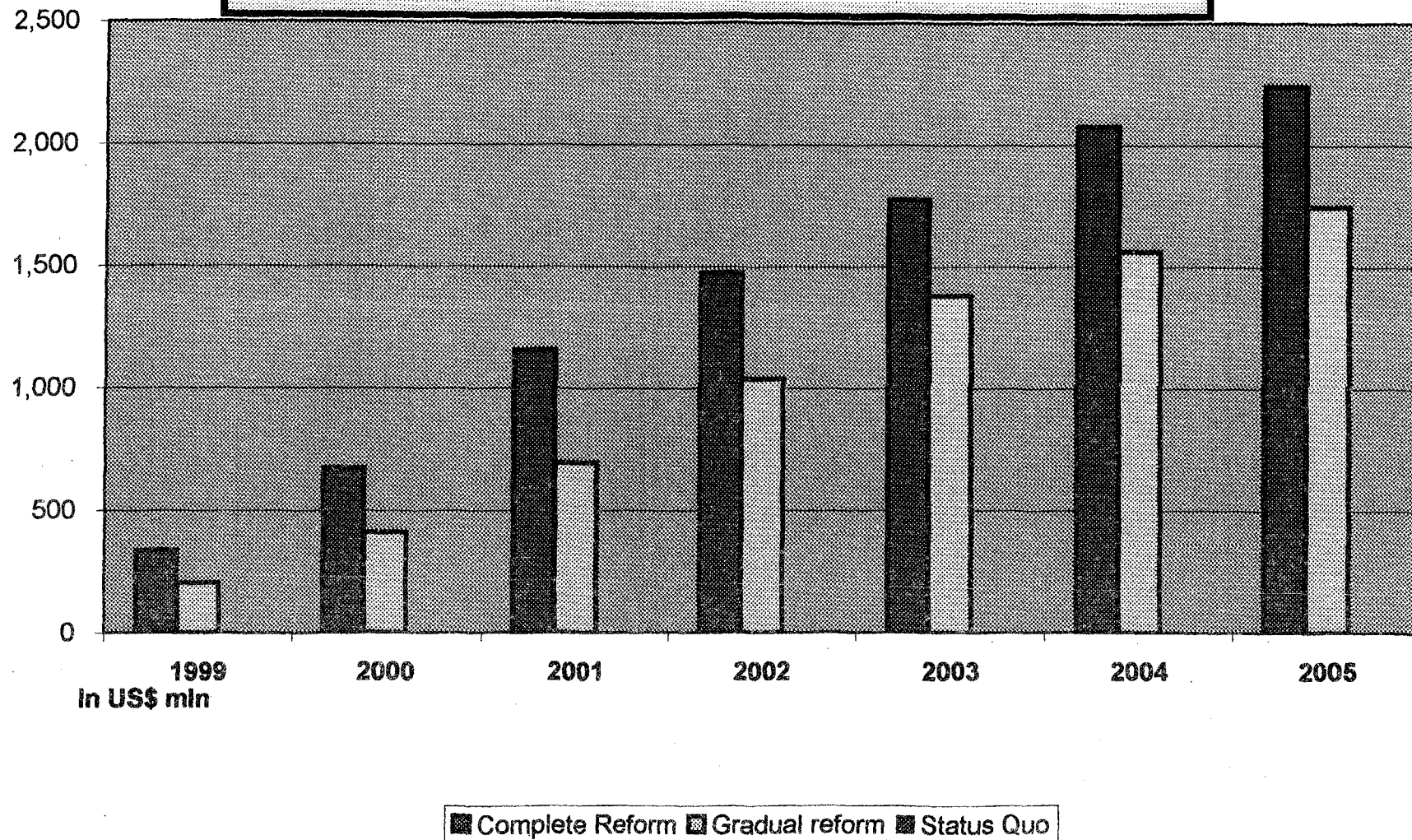


Table 12.2.1

TRANSPORT SECTOR REVIEW

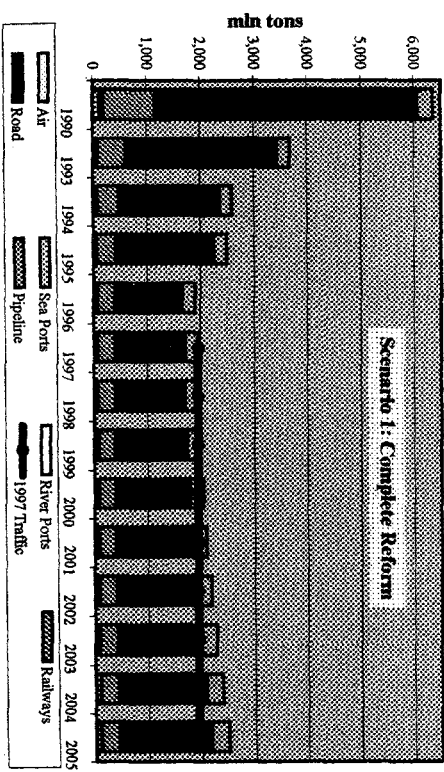
Scenario 1: Complete Reform

(Actual 1990-1997 and Projected 1998-2005)

	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
FREIGHT (mln tons)														
Air	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sea Ports	121.5	55.3	51.5	50.6	48.4	57.5	60.5	65.8	71.7	78.2	81.4	84.7	88.1	91.7
River Ports	66.0	25.0	20.0	13.0	8.0	2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.7
Railways	974.0	532.0	408.0	360.2	343.2	333.8	331.1	325.5	320.9	317.2	323.6	330.3	337.1	344.0
Road	4,897.0	2,811.0	1,869.0	1,816.0	1,254.0	1,300.0	1,300.0	1,339.0	1,379.2	1,420.5	1,491.6	1,566.2	1,644.5	1,726.7
Pipeline	296.0	251.0	244.0	246.0	246.0	250.0	250.0	257.5	265.2	273.2	286.8	301.2	316.2	332.1
TOTAL FREIGHT	6,354.7	3,674.3	2,592.5	2,485.8	1,899.6	1,943.3	1,943.7	1,989.9	2,039.2	2,091.4	2,185.8	2,284.8	2,388.5	2,497.2
PASSENGER (mln passengers)														
Air	29.5	15.0	10.0	3.7	3.5	3.2	3.3	3.5	3.9	4.2	4.4	4.6	4.9	5.1
Sea Ports	26.0	11.0	10.0	8.0	5.0	5.0	5.0	5.1	5.2	5.3	5.5	5.6	5.8	6.0
River Ports	19.0	8.0	7.0	4.0	3.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Railways	669.0	502.0	736.0	577.0	538.0	506.5	468.5	383.7	315.5	260.4	226.7	197.8	173.0	151.8
Road	8,331.0	4,795.0	4,040.0	3,483.0	3,305.0	3,300.0	3,300.0	3,399.0	3,501.0	3,606.0	3,786.3	3,975.6	4,174.4	4,383.1
Urban Transport	5,917.0	3,405.6	2,869.4	2,742.0	2,914.0	3,000.0	3,000.0	3,090.0	3,182.7	3,278.2	3,442.1	3,614.2	3,794.9	3,984.6
TOTAL PASSENGER	14,991.5	8,736.6	7,672.4	6,817.7	6,768.5	6,814.7	6,776.8	6,881.4	7,008.3	7,154.2	7,465.0	7,798.0	8,153.1	8,530.7

Source: Statistical documents all sources, Transport department, Railway, Sea and River Ports and Mission Estimates

Graph 12.2.2: Traffic Actual and Forecasts, Freight



Graph 12.2.2: Traffic Actual and Forecasts, Passenger

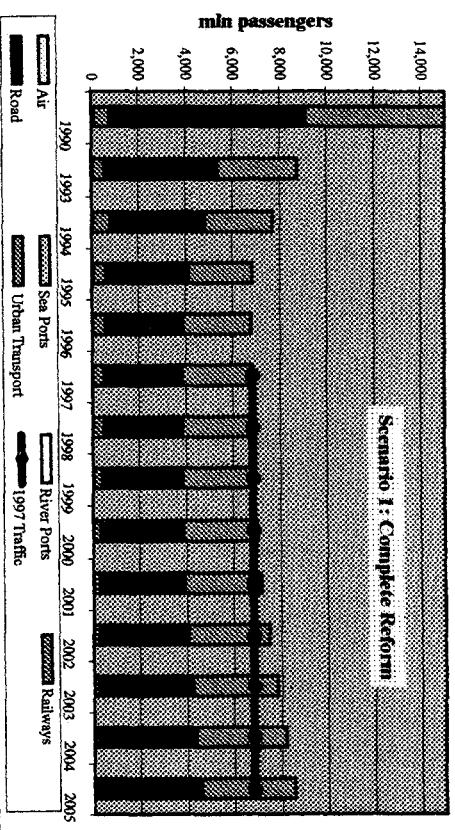


Table 12.2.3
TRANSPORT SECTOR REVIEW

Scenario: Complete Reform
(In US\$ mln)

	1997	1998	1999	2000	2001	2002	2003	2004	2005
OPERATING REVENUES									
Air	45.7	46.2	55.4	66.4	79.6	87.7	96.7	106.6	117.5
Sea Ports	324.8	325.0	330.2	335.3	341.1	360.2	380.3	401.7	424.3
River Ports	6.0	6.0	6.2	6.4	6.6	8.0	8.4	8.9	9.3
Railways	2,063.8	2,021.4	2,148.9	2,289.5	2,444.6	2,591.7	2,738.8	2,896.8	3,066.4
Road	405.0	544.0	1,345.6	1,254.9	1,195.1	1,299.7	1,414.1	1,538.8	1,674.5
Pipeline									
Urban Transport	109.5	116.0	142.0	173.8	212.7	234.4	258.4	284.8	313.8
Metro	55.0	55.0	64.5	75.7	88.8	96.0	103.8	112.3	121.4
TOTAL REVENUES	3,009.9	3,113.6	4,092.8	4,201.9	4,368.4	4,677.7	5,000.6	5,349.7	5,727.3
OPERATING EXPENDITURES									
Air	55.4	59.9	60.0	60.7	61.9	69.8	73.1	76.5	80.1
Sea Ports	170.9	207.5	206.7	210.9	218.3	235.3	251.3	268.6	287.2
River Ports	6.4	6.4	6.6	6.8	7.0	7.6	8.0	8.3	8.8
Railways	3,065.5	2,521.9	2,485.0	2,485.9	2,495.4	2,509.2	2,531.9	2,597.8	2,646.5
Road	1,200.0	1,151.7	1,401.1	1,353.4	1,310.0	1,476.1	1,527.8	1,571.5	1,616.7
Pipeline									
Urban Transport	218.3	222.5	230.3	238.4	247.0	255.6	264.6	273.8	283.5
Metro	69.8	80.7	82.7	84.6	86.7	95.0	98.1	101.2	104.5
TOTAL EXPENDITURE	4,786.2	4,250.6	4,472.3	4,440.8	4,426.1	4,648.5	4,774.8	4,897.9	5,027.2
GROSS OPERATING RESULT									
Air	(10)	(14)	(5)	6	18	18	24	30	37
Sea Ports	154	118	124	124	123	125	129	133	137
River Ports	(0)	(0)	(0)	(0)	(0)	0	0	1	1
Railways	(1,002)	(500)	(336)	(196)	(51)	83	187	299	420
Road	(795)	(608)	(55)	(99)	(115)	(176)	(114)	(33)	58
Pipeline	0	0	0	0	0	0	0	0	0
Urban Transport	(109)	(107)	(88)	(65)	(34)	(21)	(6)	11	30
Metro	(15)	(26)	(18)	(9)	2	1	6	11	17
TOTAL RESULT	(1,776)	(1,137)	(379)	(239)	(58)	29	226	452	700

Table 12.2.1

TRANSPORT SECTOR REVIEW

Scenario: Gradual Reform

(Actual 1990-1997 and Projected 1998-2005)

	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
FREIGHT (mln tons)														
Air	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sea Ports	121.5	55.3	51.5	50.6	48.4	57.5	60.5	64.0	67.8	71.9	74.1	76.5	78.9	81.4
River Ports	66.0	25.0	20.0	13.0	8.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2
Railways	974.0	532.0	408.0	360.2	343.2	333.8	331.1	326.6	322.7	319.3	324.2	329.2	334.3	339.5
Road	4,897.0	2,811.0	1,869.0	1,816.0	1,254.0	1,300.0	1,300.0	1,313.0	1,326.1	1,339.4	1,366.2	1,393.5	1,421.4	1,449.8
Pipeline	296.0	251.0	244.0	246.0	246.0	250.0	250.0	252.5	255.0	257.6	262.7	268.0	273.3	278.8
TOTAL FREIGHT	6,354.7	3,674.3	2,592.5	2,485.8	1,899.6	1,943.3	1,943.7	1,958.3	1,973.8	1,990.3	2,029.4	2,069.4	2,110.2	2,151.9
PASSENGER (mln passengers)														
Air	29.5	15.0	10.0	3.7	3.5	3.2	3.3	3.4	3.7	3.9	4.0	4.1	4.2	4.4
Sea Ports	26.0	11.0	10.0	8.0	5.0	5.0	5.0	5.1	5.2	5.3	5.5	5.6	5.8	6.0
River Ports	19.0	8.0	7.0	4.0	3.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Railways	669.0	502.0	736.0	577.0	538.0	506.5	468.5	383.7	315.5	260.4	226.7	197.8	173.0	151.8
Road	8,331.0	4,795.0	4,040.0	3,483.0	3,305.0	3,300.0	3,300.0	3,333.0	3,366.3	3,400.0	3,468.0	3,537.4	3,608.1	3,680.3
Urban Transport	5,917.0	3,405.6	2,869.4	2,742.0	2,914.0	3,000.0	3,000.0	3,030.0	3,060.3	3,090.9	3,152.7	3,215.8	3,280.1	3,345.7
TOTAL PASSENGER	14,991.5	8,736.6	7,672.4	6,817.7	6,768.5	6,814.7	6,776.8	6,755.3	6,751.0	6,760.6	6,856.9	6,960.7	7,071.3	7,188.1

Source: Statistical documents all sources, Transport department, Railway, Sea and River Ports and Mission Estimates

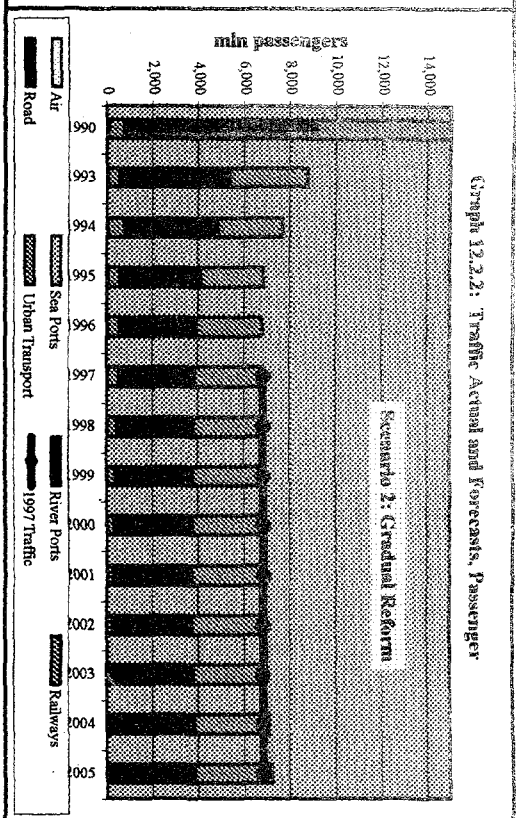
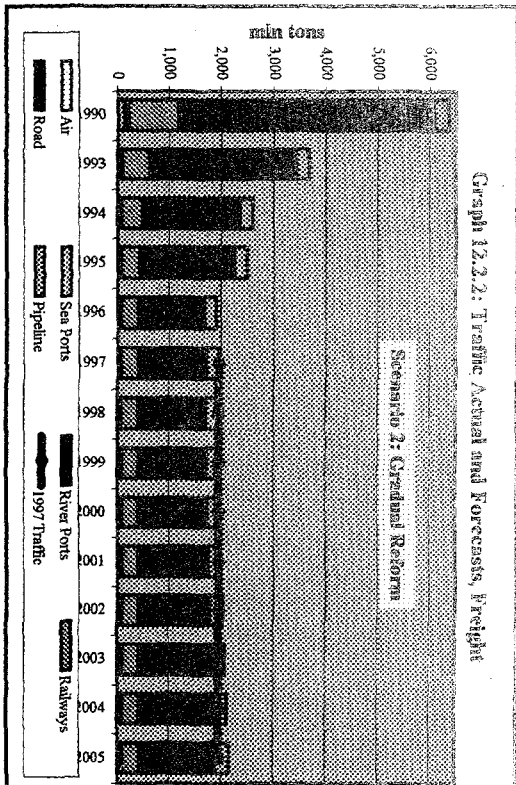


Table 12.2.3
TRANSPORT SECTOR REVIEW

Scenario: Gradual Reform

(in US\$ mln)

	1997	1998	1999	2000	2001	2002	2003	2004	2005
OPERATING REVENUES									
Air	45.7	46.2	52.9	60.5	69.2	73.4	77.9	82.6	87.7
Sea Ports	324.8	325.0	330.2	334.7	339.6	354.3	369.8	386.1	403.2
River Ports	4.0	4.0	4.0	4.1	4.1	5.3	5.4	5.5	5.6
Railways	2,063.8	2,021.4	2,088.7	2,160.8	2,237.8	2,320.9	2,398.9	2,481.4	2,568.4
Road	405.0	544.0	1,307.1	1,215.8	1,155.4	1,086.2	1,148.2	1,213.7	1,283.2
Pipeline									
Urban Transport	109.5	116.0	134.7	156.5	181.8	198.4	216.5	236.3	257.9
Metro	55.0	55.0	61.1	67.9	75.4	80.8	86.5	92.7	99.2
TOTAL REVENUES	2,843.4	2,940.6	3,782.9	3,775.8	3,806.2	3,840.1	4,000.1	4,169.3	4,348.1
OPERATING EXPENDITURES									
Air	55	70	60	61	63	69	72	74	77
Sea Ports	170.9	207.5	223.4	235.5	248.3	256.4	265.9	275.7	285.9
River Ports	6.4	6.4	6.5	6.5	6.6	6.9	7.1	7.2	7.4
Railways	3,065.5	2,554.9	2,531.1	2,521.7	2,518.1	2,470.3	2,488.7	2,508.8	2,530.6
Road	1,200.0	1,151.7	1,260.8	1,220.8	1,183.2	1,344.9	1,392.8	1,436.4	1,481.6
Pipeline									
Urban Transport	218.3	222.5	213.9	218.6	223.5	229.5	235.7	242.1	248.8
Metro	69.8	80.7	82.2	83.6	85.1	87.1	89.2	91.4	93.6
TOTAL EXPENDITURE	4,716.4	4,213.0	4,295.5	4,264.7	4,242.7	4,377.5	4,462.0	4,544.6	4,631.1
GROSS OPERATING RESULT									
Air	(10)	(24)	(7)	(1)	6	4	6	8	11
Sea Ports	154	118	107	99	91	98	104	110	117
River Ports	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Railways	(1,002)	(534)	(442)	(361)	(280)	(149)	(90)	(27)	38
Road	(795)	(608)	46	(5)	(28)	(259)	(245)	(223)	(198)
Pipeline	0	0	0	0	0	0	0	0	0
Urban Transport	(109)	(107)	(79)	(62)	(42)	(31)	(19)	(6)	9
Metro	(15)	(26)	(21)	(16)	(10)	(6)	(3)	1	6
TOTAL RESULT	(1,764)	(1,156)	(378)	(332)	(255)	(339)	(245)	(139)	(25)

Table 12.2.1

TRANSPORT SECTOR REVIEW

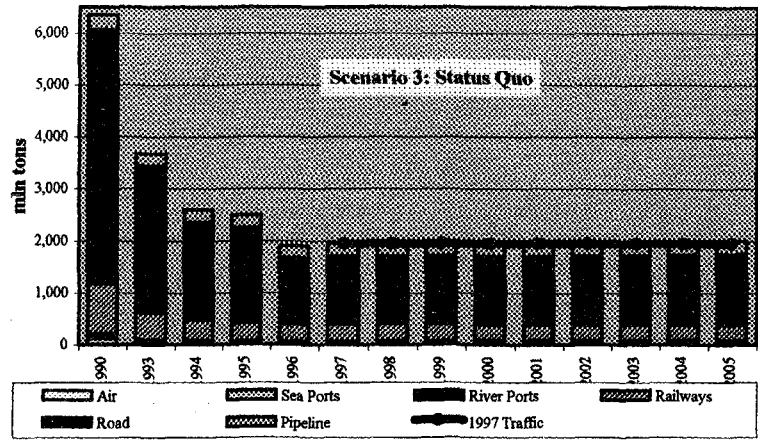
Annex 3: Transport

(Actual 1990-1997 and Projected 1998-2005)

	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
FREIGHT (mln tons)														
Air	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sea Ports	121.5	55.3	51.5	50.6	48.4	57.5	60.5	62.3	64.2	66.1	67.2	68.2	69.3	70.4
River Ports	66.0	25.0	20.0	13.0	8.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1
Railways	974.0	532.0	408.0	360.2	343.2	333.8	331.1	327.4	323.9	320.5	317.3	314.4	311.6	309.1
Road	4,897.0	2,811.0	1,869.0	1,816.0	1,254.0	1,300.0	1,300.0	1,300.0	1,300.0	1,300.0	1,313.0	1,326.1	1,339.4	1,352.8
Pipeline	296.0	251.0	244.0	246.0	246.0	250.0	250.0	250.0	250.0	250.0	252.5	255.0	257.6	260.2
TOTAL FREIGHT	6,354.7	3,674.3	2,592.5	2,485.8	1,899.6	1,943.3	1,943.7	1,941.8	1,940.1	1,938.7	1,952.1	1,965.9	1,980.0	1,994.6
PASSENGER (mln passengers)														
Air	29.5	15.0	10.0	3.7	3.5	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.9
Sea Ports	26.0	11.0	10.0	8.0	5.0	5.0	5.0	5.1	5.2	5.3	5.5	5.6	5.8	6.0
River Ports	19.0	8.0	7.0	4.0	3.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Railways	669.0	502.0	736.0	577.0	538.0	506.5	468.5	445.1	422.9	401.7	381.6	362.5	344.4	327.2
Road	8,331.0	4,795.0	4,040.0	3,483.0	3,305.0	3,300.0	3,300.0	3,300.0	3,300.0	3,300.0	3,333.0	3,366.3	3,400.0	3,434.0
Urban Transport	5,917.0	3,405.6	2,869.4	2,742.0	2,914.0	3,000.0	3,000.0	3,000.0	3,000.0	3,000.0	3,030.0	3,060.3	3,090.9	3,121.8
TOTAL PASSENGER	14,991.5	8,736.6	7,672.4	6,817.7	6,768.5	6,814.7	6,776.8	6,753.6	6,731.6	6,710.7	6,753.9	6,798.6	6,845.0	6,893.0

Source: Statistical documents all sources, Transport department, Railway, Sea and River Ports and Mission Estimates

Graph 12.2.2: Traffic Actual and Forecasts, Freight



Graph 12.2.2: Traffic Actual and Forecasts, Passenger

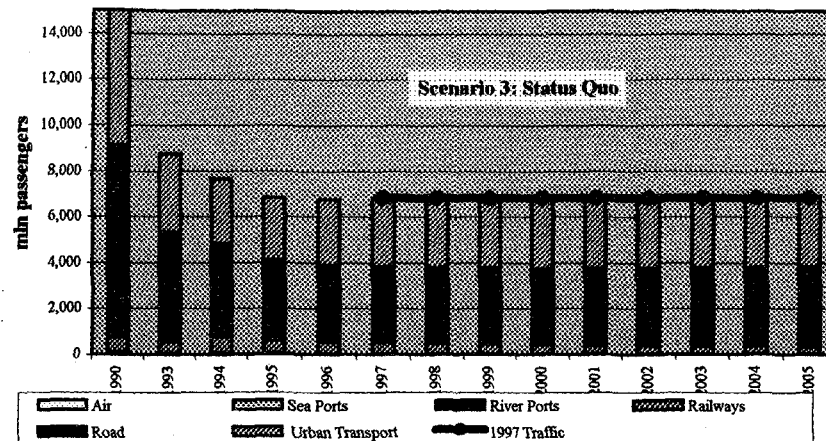


Table 12.2.3

TRANSPORT SECTOR REVIEW

Scenario: Status Quo
(In US\$ mln)

	1997	1998	1999	2000	2001	2002	2003	2004	2005
OPERATING REVENUES									
Air	45.7	46.2	50.2	54.5	59.3	61.7	64.2	66.8	69.5
Sea Ports	324.8	325.0	329.7	333.5	337.5	348.5	359.8	371.5	383.7
River Ports	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Railways	2,063.8	2,021.4	2,009.3	1,998.8	1,989.7	2,007.3	2,018.0	2,030.2	2,044.0
Road	405.0	544.0	439.2	395.3	355.8	302.4	257.0	218.5	185.7
Pipeline									
Urban Transport	109.5	116.0	114.8	113.6	112.5	110.2	108.0	105.8	103.6
Metro	55.0	55.0	56.1	57.2	58.4	59.5	60.7	62.0	63.2
TOTAL REVENUES	2,839.4	2,936.6	2,828.4	2,782.1	2,742.3	2,719.8	2,699.0	2,687.0	2,682.8
OPERATING EXPENDITURES									
Air	55.4	59.9	60.1	62.2	64.4	71.1	73.3	75.4	77.6
Sea Ports	170.9	207.5	233.3	253.3	275.4	293.9	306.8	320.0	333.6
River Ports	6.4	6.4	6.4	6.4	6.4	6.7	6.7	6.8	6.9
Railways	3,065.5	2,494.6	2,523.4	2,531.9	2,542.6	2,572.1	2,583.1	2,595.6	2,609.5
Road	1,200.0	1,151.7	1,155.1	1,158.5	1,162.0	1,177.1	1,192.5	1,208.0	1,223.8
Pipeline									
Urban Transport	218.3	222.5	209.2	209.2	209.5	207.9	206.5	205.4	204.6
Metro	69.8	75.6	76.3	76.9	77.6	78.8	80.0	81.2	82.5
TOTAL EXPENDITURE	4,716.4	4,142.6	4,187.6	4,221.6	4,260.3	4,328.9	4,368.9	4,411.3	4,456.0
GROSS OPERATING RESULT									
Air	(10)	(14)	(10)	(8)	(5)	(9)	(9)	(9)	(8)
Sea Ports	154	118	96	80	62	55	53	52	50
River Ports	(6)	(6)	(6)	(6)	(6)	(7)	(7)	(7)	(7)
Railways	(1,002)	(473)	(514)	(533)	(553)	(565)	(565)	(565)	(566)
Road	(795)	(608)	(716)	(763)	(806)	(875)	(935)	(990)	(1,038)
Pipeline	0	0	0	0	0	0	0	0	0
Urban Transport	(109)	(107)	(94)	(96)	(97)	(98)	(99)	(100)	(101)
Metro	(15)	(21)	(20)	(20)	(19)	(19)	(19)	(19)	(19)
TOTAL RESULTS	(1,768)	(1,090)	(1,244)	(1,326)	(1,406)	(1,499)	(1,562)	(1,619)	(1,670)